

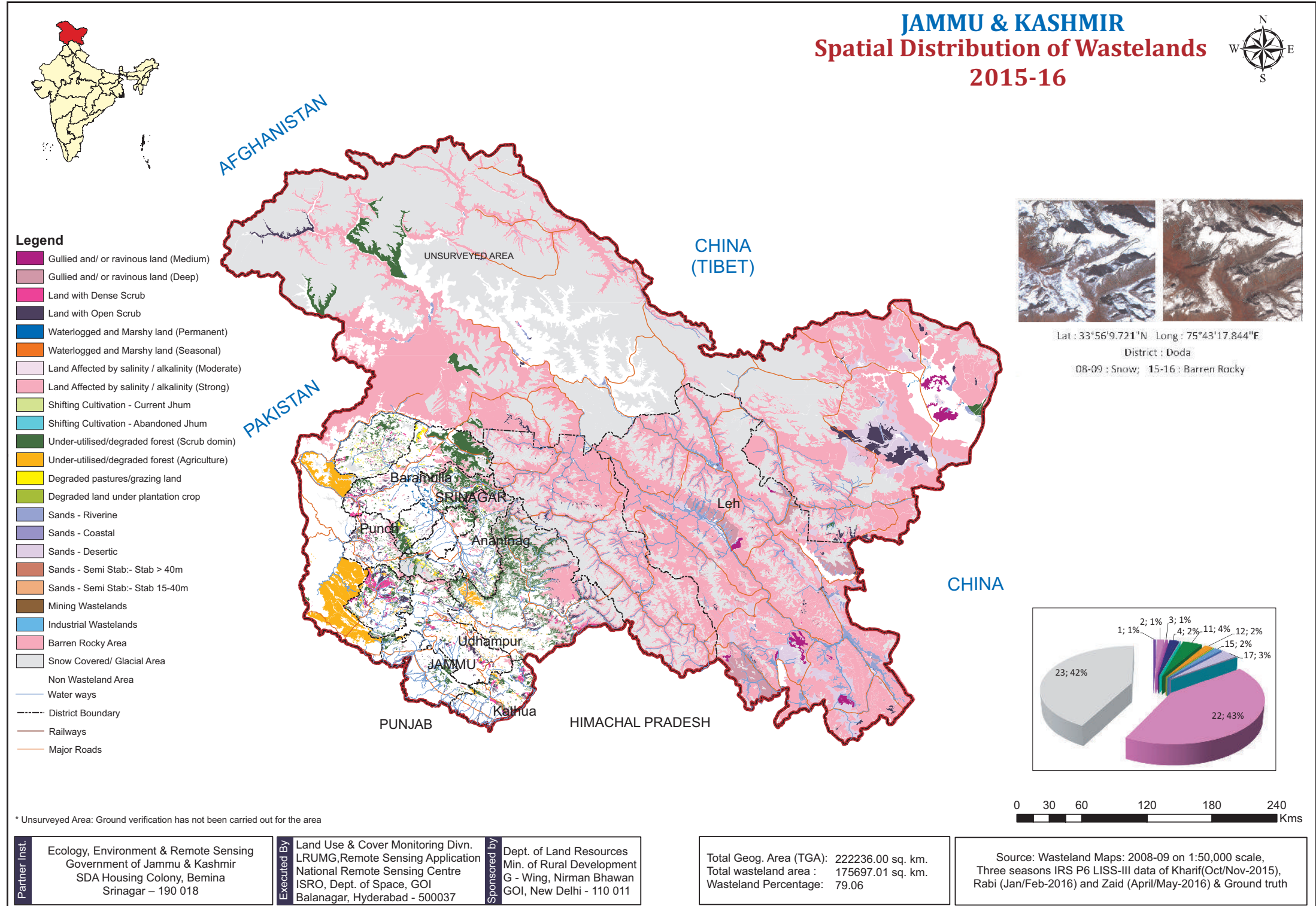
Salient Features

- Decrease in wastelands area is observed by 383.24 sq. km.
- Maximum decrease in wastelands area is noticed under **snow covered / Glacial Area** by 3085.55 sq. km.
- Maximum increase is observed in the area under **barren rocky** by 2048.05 sq. km., followed by **sands - desertic** by 576.08 sq. km.
- An area of 326.33 sq. km. of the **snow covered/ Glacial Area** was converted to water bodies.
- Leh district witnessed maximum decrease in wastelands area by 326.84 sq. km., which was due to decrease in **snow cover**.

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Spatial Distribution of Wastelands

2015-16



Legend

- Gullied and/ or ravinous land (Medium)
- Gullied and/ or ravinous land (Deep)
- Land with Dense Scrub
- Land with Open Scrub
- Waterlogged and Marshy land (Permanent)
- Waterlogged and Marshy land (Seasonal)
- Land Affected by salinity / alkalinity (Moderate)
- Land Affected by salinity / alkalinity (Strong)
- Shifting Cultivation - Current Jhum
- Shifting Cultivation - Abandoned Jhum
- Under-utilised/degraded forest (Scrub domin)
- Under-utilised/degraded forest (Agriculture)
- Degraded pastures/grazing land
- Degraded land under plantation crop
- Sands - Riverine
- Sands - Coastal
- Sands - Desertic
- Sands - Semi Stab:- Stab > 40m
- Sands - Semi Stab:- Stab 15-40m
- Mining Wastelands
- Industrial Wastelands
- Barren Rocky Area
- Snow Covered/ Glacial Area
- Non Wasteland Area
- Water ways
- District Boundary
- Railways
- Major Roads

* Unsurveyed Area: Ground verification has not been carried out for the area

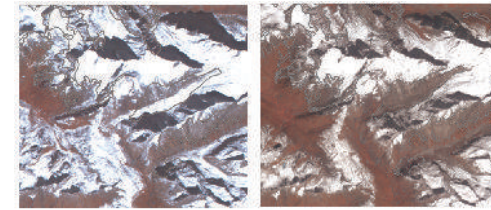
Partner Inst.
Ecology, Environment & Remote Sensing
Government of Jammu & Kashmir
SDA Housing Colony, Bemina
Srinagar – 190 018

Executed By
Land Use & Cover Monitoring Divn.
LRUMG, Remote Sensing Application
National Remote Sensing Centre
ISRO, Dept. of Space, GOI
Balanagar, Hyderabad - 500037

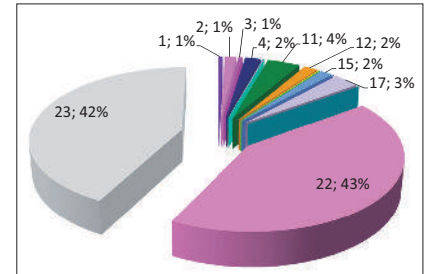
Sponsored by
Dept. of Land Resources
Min. of Rural Development
G - Wing, Nirman Bhawan
GOI, New Delhi - 110 011

Total Geog. Area (TGA): 222236.00 sq. km.
Total wasteland area : 175697.01 sq. km.
Wasteland Percentage: 79.06

Source: Wasteland Maps: 2008-09 on 1:50,000 scale,
Three seasons IRS P6 LISS-III data of Kharif (Oct/Nov-2015),
Rabi (Jan/Feb-2016) and Zaid (April/May-2016) & Ground truth



Lat : 33°56'9.721"N Long : 75°43'17.844"E
District : Doda
08-09 : Snow; 15-16 : Barren Rocky



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Wastelands Area Change Matrix : 2008-09 and 2015-16

Area in Sq.km

WL Category	WL during 2008-09 remaining as WL in 2015-16																	WL 2008-09 becoming non_WL in 2015-16				2008-09			
	1	2	3	4	5	6	7	8	11	12	13	14	15	17	20	21	22	23	26	28	29	32	Category Total	Grand Total	
1	880.85																				0.07		880.91	176080.25	
2		2481.05																0.27					2481.32		
3			896.91	3.71																			900.62		
4			0.42	3264.61			0.32	7.66			1.20	21.09					4.38	6.72	0.59	0.04		0.71	3307.74		
5					100.47																		100.47		
6						0.11																	0.11		
7							98.45						0.31				0.77						99.54		
8								69.03															69.03		
11									6907.90	3.08							5.60	110.30					7026.88		
12										2925.19													2925.19		
13									0.44		189.27							0.18		0.03			189.92		
14												39.59											39.59		
15				1.87									2662.21	34.63				0.06					2698.77		
17				0.79			0.34	1.95						0.02	5056.08			0.56					5059.74		
20															4.47								4.47		
21																3.75							3.75		
22			0.16	5.51									8.74				68537.28	4084.07				0.17	72635.93		
23	17.30		15.00	37.42			3.06	0.53	114.86	1.26	1.46		23.19	544.13			6135.91	70346.16	4.33	0.61	84.72	326.33	77656.27		
999				0.25					0.01	6.88			3.82	0.98			0.04	22.39							
Category Total (2015-16)	898.15	2481.05	912.49	3314.16	100.47	0.11	102.17	79.17	7023.20	2936.41	190.73	40.79	2719.38	5635.82	4.47	3.75	74683.98	74570.72	4.92	0.68	84.79	327.22			
Grand Total (2015-16)	175697.01																								

WL Category	Reduction from 0809 to 1516		Increase from 0809 to 1516	
	Area	No of polygons	Area	No of polygons
1	0.07			
2				
3				
4	1.34		0.25	2
5				
6				
7				
8				
11			0.01	1
12			6.88	2
13	0.03			
14				
15			3.82	25
17			0.98	1
20				
21				
22	0.17		0.04	1
23	415.99		22.39	4
Total	417.60		34.37	

Wastelands becoming Non-wastelands (-) **417.6**
 Non-wastelands becoming Wastelands (+) **34.37**
 NET Change (2015 - 16) - (2008 - 09) (-) **383.24**

Green denotes Change from wasteland to non-wasteland
Red denotes change from non-wasteland to wastelands
Blue denotes no change in the wasteland category
 2008 - 09 Wastelands statistics are revised version.
 Area under category total is rounded to nearest decimal.

Wasteland Classes	Non-Wasteland Classes
1. Gullied and/ or ravinous land (Medium)	24. Built-up
2. Gullied and/ or ravinous land (Deep)	25. Industrial Area
3. Land with Dense Scrub	26. Cropland
4. Land with Open Scrub	27. Fallow Land
5. Waterlogged and Marshy land (Permanent)	28. Plantation
6. Waterlogged and Marshy land (Seasonal)	29. Forest-Dense/Open
7. Land affected by salinity/alkalinity (Medium)	30. Forest Plantation
8. Land affected by salinity/alkalinity (Strong)	31. Grasslands
9. Shifting Cultivation - Current Jhum	32. Waterbodies
10. Shifting Cultivation - Abandoned Jhum	
11. Under-utilised/degraded forest (Scrub domin)	
12. Under-utilised/degraded forest (Agriculture)	
13. Degraded pastures/ grazing land	
14. Degraded land under plantation crop	
15. Sands-Riverine	
16. Sands-Coastal	
17. Sands-Desertic	
18. Sands-Semi Stab.-Stab>40m	
19. Sands-Semi Stab.-Stab 15-40m	
20. Mining Wastelands	
21. Industrial wastelands	
22. Barren Rocky/Stony waste	
23. Snow covered /Glacial area	
999. Non-Wasteland Area	

Jammu & Kashmir

Wastelands Area Changes – 2008-09 and 2015-16

Area in sq.km

District	WL_Class	1	2	3	4	5	6	7	8	9	10	11
Anantnag	2008-09	3.38	--	45.69	75.20	3.24	--	--	--	--	--	472.09
	2015-16	3.38	--	45.69	75.20	3.24	--	--	--	--	--	503.95
	Change	0.00	--	0.00	0.00	0.00	--	--	--	--	--	31.86
Badgam	2008-09	1.46	6.81	6.54	19.95	21.66	0.02	--	--	--	--	255.32
	2015-16	1.46	6.81	7.49	23.10	21.66	0.02	--	--	--	--	240.60
	Change	0.00	0.00	0.95	3.15	0.00	0.00	--	--	--	--	-14.72
Baramulla	2008-09	--	--	91.28	93.18	15.85	--	--	--	--	--	922.17
	2015-16	--	--	87.63	97.53	15.85	--	--	--	--	--	899.65
	Change	--	--	-3.65	4.36	0.00	--	--	--	--	--	-22.52
Doda	2008-09	--	--	107.38	488.35	--	--	--	--	--	--	1884.20
	2015-16	--	--	115.05	491.52	--	--	--	--	--	--	1938.35
	Change	--	--	7.67	3.17	--	--	--	--	--	--	54.15
Jammu	2008-09	1.14	3.73	13.18	29.39	--	--	--	--	--	--	181.93
	2015-16	1.07	3.73	13.36	27.93	--	--	--	--	--	--	181.93
	Change	-0.07	0.00	0.17	-1.46	--	--	--	--	--	--	0.00
Kargil	2008-09	--	--	26.22	179.44	--	--	--	--	--	--	0.09
	2015-16	--	--	27.45	202.35	--	--	--	--	--	--	0.09
	Change	--	--	1.23	22.91	--	--	--	--	--	--	0.00
Kathua	2008-09	13.24	26.71	93.41	104.59	--	--	--	--	--	--	196.50
	2015-16	13.24	26.71	93.47	100.28	--	--	--	--	--	--	194.21
	Change	0.00	0.00	0.05	-4.31	--	--	--	--	--	--	-2.29
Kupwara	2008-09	--	--	47.90	38.87	--	0.09	--	--	--	--	266.36
	2015-16	--	--	47.90	37.67	--	0.09	--	--	--	--	220.07
	Change	--	--	0.00	-1.20	--	0.00	--	--	--	--	-46.29
Leh	2008-09	428.77	2392.71	65.98	378.73	--	--	21.60	69.03	--	--	1.72
	2015-16	446.07	2392.44	71.21	360.48	--	--	24.24	79.17	--	--	1.72
	Change	17.30	-0.27	5.23	-18.24	--	--	2.63	10.14	--	--	0.00
Punch	2008-09	--	--	49.97	102.32	--	--	--	--	--	--	80.42
	2015-16	--	--	49.97	101.73	--	--	--	--	--	--	68.77
	Change	--	--	0.00	-0.59	--	--	--	--	--	--	-11.66
Pulwama	2008-09	8.24	0.48	1.52	3.89	0.58	--	--	--	--	--	152.76
	2015-16	8.24	0.48	1.52	4.10	0.58	--	--	--	--	--	162.00
	Change	0.00	0.00	0.00	0.21	0.00	--	--	--	--	--	9.24
Rajouri	2008-09	86.67	50.88	185.06	167.10	--	--	--	--	--	--	293.83
	2015-16	86.67	50.88	185.26	167.00	--	--	--	--	--	--	292.87
	Change	0.00	0.00	0.20	-0.10	0.00	--	--	--	--	--	-0.97
Srinagar	2008-09	--	--	18.35	30.13	33.15	--	--	--	--	--	674.65
	2015-16	--	--	18.35	30.49	33.15	--	--	--	--	--	673.78
	Change	--	--	0.00	0.36	0.00	--	--	--	--	--	-0.87
Udhampur	2008-09	0.04	--	104.36	155.22	--	--	--	--	--	--	166.87
	2015-16	0.04	--	104.36	153.39	--	--	--	--	--	--	167.25
	Change	0.00	--	0.00	-1.84	--	--	--	--	--	--	0.38

Note: "--" Denotes this Class is not existing in the District / State

2008-09 Wastelands statistics are revised version.

- | | |
|--|--|
| 1. Gullied and/ or ravine land (Medium) | 7. Land affected by salinity/alkalinity (Medium) |
| 2. Gullied and/ or ravine land (Deep) | 8. Land affected by salinity/alkalinity (Strong) |
| 3. Land with Dense Scrub | 9. Shifting Cultivation - Current Jhum |
| 4. Land with Open Scrub | 10. Shifting Cultivation - Abandoned Jhum |
| 5. Waterlogged and Marshy land (Permanent) | 11. Under-utilised/degraded forest (Scrub domin) |
| 6. Waterlogged and Marshy land (Seasonal) | 12. Under-utilised/degraded forest (Agriculture) |

Area in sq.km

12	13	14	15	16	17	18	19	20	21	22	23	Total	TGA
5.25	52.56	0.45	0.47	--	--	--	--	0.35	--	582.74	487.07	1728.51	3984
5.25	53.05	0.45	0.47	--	--	--	--	0.35	--	548.08	486.36	1725.48	
0.00	0.49	0.00	0.00	--	--	--	--	0.00	--	-34.66	-0.72	-3.03	
--	24.13	3.74	--	--	--	--	--	2.56	3.74	20.26	49.07	415.26	1371
--	23.70	3.74	--	--	--	--	--	2.56	3.74	11.29	68.92	415.09	
--	-0.44	0.00	--	--	--	--	--	0.00	0.00	-8.98	19.85	-0.18	
2.30	56.60	0.01	--	--	--	--	--	--	--	434.21	163.89	1779.49	4588
7.52	57.50	0.01	--	--	--	--	--	--	--	368.59	249.47	1783.77	
5.22	0.90	0.00	--	--	--	--	--	--	--	-65.62	85.59	4.28	
194.10	4.08	--	--	--	--	--	--	--	--	2091.54	1974.91	6744.56	11691
194.29	4.08	--	--	--	--	--	--	--	--	2047.73	1880.48	6671.49	
0.18	0.00	--	--	--	--	--	--	--	--	-43.82	-94.43	-73.07	
25.83	--	--	22.41	--	--	--	--	0.14	--	6.09	0.17	284.01	3097
25.83	--	--	27.43	--	0.98	--	--	0.14	--	6.03	--	288.44	
0.00	--	--	5.02	--	0.98	--	--	0.00	--	-0.05	-0.17	4.43	
--	--	--	4.11	--	63.87	--	--	--	--	10613.92	3084.59	13972.23	14036
--	--	--	4.05	--	63.87	--	--	--	--	8508.19	5164.13	13970.12	
--	--	--	-0.06	--	0.00	--	--	--	--	-2105.73	2079.54	-2.11	
47.53	--	--	10.91	--	--	--	--	--	--	29.19	5.01	527.09	2651
48.56	--	--	13.57	--	--	--	--	--	--	31.68	4.53	526.25	
1.03	--	--	2.66	--	--	--	--	--	--	2.50	-0.47	-0.84	
1.71	23.78	30.36	--	--	--	--	--	--	--	29.44	96.95	535.45	2379
1.71	23.74	31.57	--	--	--	--	--	--	--	26.15	167.54	556.42	
0.00	-0.03	1.20	--	--	--	--	--	--	--	-3.29	70.59	20.98	
--	--	2.31	2155.93	--	2123.81	--	--	--	--	23009.65	13914.32	44564.56	45110
--	--	2.31	2168.80	--	2698.91	--	--	--	--	27168.02	8824.36	44237.72	
--	--	0.00	12.87	--	575.10	--	--	--	--	4158.37	-5089.97	-326.84	
2.91	5.28	1.43	0.25	--	--	--	--	--	--	92.86	60.54	395.97	1674
4.58	5.29	1.43	0.25	--	--	--	--	--	--	118.55	47.16	397.72	
1.66	0.01	0.00	0.00	--	--	--	--	--	--	25.69	-13.38	1.75	
1.03	4.15	0.71	--	--	--	--	--	0.71	0.01	71.64	28.67	274.37	1398
1.03	4.21	0.71	--	--	--	--	--	0.71	0.01	71.43	17.19	272.19	
0.00	0.06	0.00	--	--	--	--	--	0.00	0.00	-0.21	-11.48	-2.18	
87.51	0.33	0.58	3.63	--	--	--	--	--	--	12.62	32.30	920.51	2630
89.37	0.33	0.58	3.75	--	--	--	--	--	--	23.23	15.36	915.30	
1.86	0.00	0.00	0.12	--	--	--	--	--	--	10.60	-16.94	-5.21	
2.34	13.30	--	3.99	--	--	--	--	0.70	--	305.69	117.27	1199.57	2228
2.34	13.12	--	3.99	--	--	--	--	0.70	--	298.14	125.03	1199.09	
0.00	-0.18	--	0.00	--	--	--	--	0.00	--	-7.56	7.76	-0.48	
54.09	5.71	--	4.34	--	--	--	--	--	--	85.65	132.36	708.64	4550
55.34	5.71	--	4.34	--	--	--	--	--	--	206.45	11.03	707.90	
1.26	0.00	--	0.00	--	--	--	--	--	--	120.80	-121.33	-0.73	

TGA - Total Geographical Area

13. Degraded pastures/ grazing land	19. Sands-Semi Stab.-Stab 15-40m
14. Degraded land under plantation crop	20. Mining Wastelands
15. Sands-Riverine	21. Industrial wastelands
16. Sands-Coastal	22. Barren Rocky/Stony waste
17. Sands-Desertic	23. Snow covered /Glacial area
18. Sands-Semi Stab.-Stab>40m	



Jammu & Kashmir contd...

Wastelands Area Changes – 2008-09 and 2015-16

District	WL_Class	1	2	3	4	5	6	7	8	9	10	11
Unsurveyed Area*	2008-09	337.97	0.00	43.79	1441.38	25.99	--	77.93	--	--	--	1477.98
	2015-16	337.97	0.00	43.79	1441.38	25.99	--	77.93	--	--	--	1477.98
	Change	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	--	0.00
Grand Total	2008-09	880.91	2481.32	900.62	3307.74	100.47	0.11	99.54	69.03	--	--	7026.88
	2015-16	898.15	2481.05	912.49	3314.16	100.47	0.11	102.17	79.17	--	--	7023.20
	Change	17.23	-0.27	11.87	6.43	0.00	0.00	2.63	10.14	--	--	-3.68

Note: "--" Denotes this Class is not existing in the District / State

2008-09 Wastelands statistics are revised version.

*For Unsurveyed area Ground Truth not carried out

Jammu & Kashmir contd...

Wastelands Area Changes – 2008-09 and 2015-16

Area in sq.km

12	13	14	15	16	17	18	19	20	21	22	23	Total	TGA
2500.60	--	--	492.74	--	2872.05	--	--	--	--	35250.42	57509.17	102030	120849
2500.60	--	--	492.74	--	2872.05	--	--	--	--	35250.42	57509.17	102030	
0.00	--	--	0.00	--	0.00	--	--	--	--	0.00	0.00	0.00	
2925.19	189.92	39.59	2698.77	--	5059.74	--	--	4.47	3.75	72635.93	77656.27	176080	222236
2936.41	190.73	40.79	2719.38	--	5635.82	--	--	4.47	3.75	74683.98	74570.72	175697	
11.22	0.81	1.20	20.60	--	576.08	--	--	0.00	0.00	2048.05	-3085.55	-383.24	

TGA - Total Geographical Area

1. Gullied and/ or ravinous land (Medium)	9. Shifting Cultivation - Current Jhum	17. Sands-Desertic
2. Gullied and/ or ravinous land (Deep)	10. Shifting Cultivation - Abandoned Jhum	18. Sands-Semi Stab.-Stab>40m
3. Land with Dense Scrub	11. Under-utilised/degraded forest (Scrub domin)	19. Sands-Semi Stab.-Stab 15-40m
4. Land with Open Scrub	12. Under-utilised/degraded forest (Agriculture)	20. Mining Wastelands
5. Waterlogged and Marshy land (Permanent)	13. Degraded pastures/ grazing land	21. Industrial wastelands
6. Waterlogged and Marshy land (Seasonal)	14. Degraded land under plantation crop	22. Barren Rocky/Stony waste
7. Land affected by salinity/alkalinity (Medium)	15. Sands-Riverine	23. Snow covered /Glacial area
8. Land affected by salinity/alkalinity (Strong)	16. Sands-Coastal	