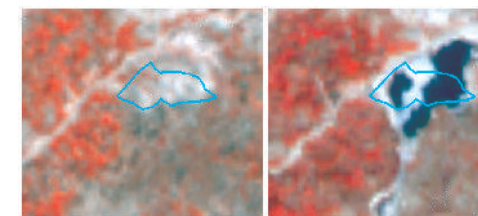


Salient Features

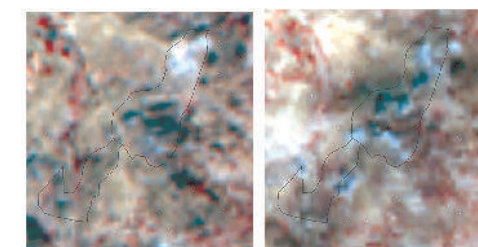
- Decrease in wastelands area by 7.28 sq. km.
- **Under-utilized/degraded forest (Scrub dominated)** has decreased by 47.94 sq. km.; Wastelands area under **barren rocky** category has decreased by 22.13 sq. km.
- Increase of 63.64 sq. km. area under **mining wastelands**;
- Giridih district witnessed decrease in wastelands area by 7.85 sq. km.; **land with open scrub** area decreased by 4.47 sq. km. under this district.
- Ranchi district observed decrease in wastelands area by 3.69 sq. km.;
- Chatra and Dhanbad districts witnessed increase in **mining wastelands** by 7.70 sq. km. and 5.05 sq. km. respectively.
- An area of 8.75 sq. km. area converted from wastelands to forest plantation and 8.34 sq. km. to agricultural plantations.

JHARKHAND

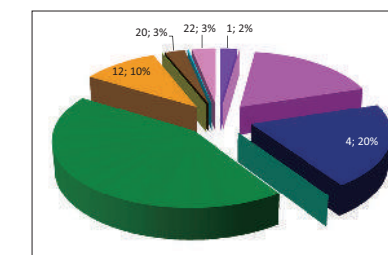
Spatial Distribution of Wastelands 2015-16



Lat : 24°8'45.684"N Long : 84°4'51.978"E
District : Palamu
08-09 :Open Scrub; 15-16 : Water bodies



Lat : 23°26'23.894"N Long : 85°15'14.908"E
District : Ranchi
08 09 :Open Scrub; 15 16 : Built up



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

UTTARA
PRADESH

BIHAR

WEST BENGAL

CHATTISGARH

ODISHA



Partner Inst.
Jharkhand Space Application Center
Department of IT, Government of Jharkhand
Second Floor, Engineer's Hostel – II
Dhurva, Ranchi – 834 002

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): 79706.00 sq. km.
Total wasteland area : 11767.08 sq. km.
Wasteland Percentage: 14.77

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

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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	11	12	14	15	20	21	22	24	25	26	27	28	29	30	32	Category Total	Grand Total	
1	270.02													0.07		0.37		0.07		0.18		270.70	11774.36	
2		0.90																				0.90		
3			2095.65	0.57						3.59				0.51	1.11			0.73			0.80	2102.97		
4			0.41	2399.08						4.34	1.24			3.32	2.35	0.44		7.26		0.45	1.60	2420.50		
5					0.11					0.15												0.26		
6						0.15																0.15		
11							5072.65	23.36		16.55	0.28				0.21			0.29		7.86	0.13	5121.33		
12								1184.09		0.52										0.26	0.06	1184.93		
14									5.31													5.31		
15										0.02												0.02		
20										252.69				0.19	0.15							253.03		
21											20.02											20.02		
22										22.27		371.97										394.24		
999			0.88	0.28			0.74	0.06	0.98	16.55	1.50	0.14												
Category Total (2015-16)	270.02	0.90	2096.95	2399.93	0.11	0.15	5073.39	1207.51	6.29	0.02	316.66	23.04	372.11	4.08	3.82	0.81		8.34		8.75	2.59			
Grand Total (2015-16)	11767.08																							

WL Category	Reduction from 0809 to 1516		Increase from 0809 to 1516	
	Area	No of polygons	Area	No of polygons
1	0.68	9		
2				
3	3.16	37	0.88	7
4	15.42	174	0.28	4
5				
6				
11	8.49	59	0.74	1
12	0.32	4	0.06	2
14			0.98	13
15				
20	0.34	3	16.55	77
21			1.50	8
22			0.14	1
Total	28.40	283	21.12	113

Wastelands becoming Non-wastelands (-) **28.40**
 Non-wastelands becoming Wastelands (+) **21.12**
 NET Change (2015 - 16)- (2008 - 09) (-) **7.28**

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

Jharkhand

Wastelands Area Changes – 2008-09 and 2015-16

District	WL_Class	1	2	3	4	5	6	7	8	9	10	11
Bokaro	2008-09	1.48	--	148.13	115.78	--	--	--	--	--	--	223.30
	2015-16	1.48	--	148.29	115.21	--	--	--	--	--	--	222.46
	Change	0.00	--	0.16	-0.56	--	--	--	--	--	--	-0.83
Chatra	2008-09	49.81	--	6.43	131.72	--	--	--	--	--	--	774.50
	2015-16	49.81	--	6.43	130.91	--	--	--	--	--	--	771.67
	Change	0.00	--	0.00	-0.81	--	--	--	--	--	--	-2.83
Deoghar	2008-09	20.09	--	170.63	152.40	--	--	--	--	--	--	117.60
	2015-16	20.09	--	170.55	151.43	--	--	--	--	--	--	117.41
	Change	0.00	--	-0.09	-0.97	--	--	--	--	--	--	-0.19
Dhanbad	2008-09	0.40	--	123.84	106.43	0.15	--	--	--	--	--	76.52
	2015-16	0.40	--	122.90	104.55	--	--	--	--	--	--	76.14
	Change	0.00	--	-0.94	-1.89	-0.15	--	--	--	--	--	-0.38
Dumka	2008-09	4.30	--	34.66	148.37	--	--	--	--	--	--	124.84
	2015-16	4.30	--	34.84	148.09	--	--	--	--	--	--	124.62
	Change	0.00	--	0.18	-0.28	--	--	--	--	--	--	-0.22
Garhwa	2008-09	25.52	--	85.45	75.87	--	--	--	--	--	--	430.82
	2015-16	25.52	--	85.43	75.74	--	--	--	--	--	--	414.70
	Change	0.00	--	-0.02	-0.13	--	--	--	--	--	--	-16.13
Giridih	2008-09	25.55	--	8.21	253.47	--	--	--	--	--	--	451.49
	2015-16	25.55	--	8.21	249.01	--	--	--	--	--	--	446.92
	Change	0.00	--	0.00	-4.47	--	--	--	--	--	--	-4.56
Godda	2008-09	0.21	--	28.57	128.83	--	--	--	--	--	--	55.41
	2015-16	0.21	--	28.45	128.71	--	--	--	--	--	--	55.41
	Change	0.00	--	-0.12	-0.13	--	--	--	--	--	--	0.00
Gumla	2008-09	8.53	--	189.65	39.93	--	--	--	--	--	--	180.81
	2015-16	8.46	--	189.50	38.34	--	--	--	--	--	--	180.70
	Change	-0.07	--	-0.15	-1.59	--	--	--	--	--	--	-0.11
Hazaribag	2008-09	42.56	0.90	58.30	240.39	--	--	--	--	--	--	432.26
	2015-16	42.56	0.90	57.94	239.63	--	--	--	--	--	--	431.97
	Change	0.00	0.00	-0.36	-0.76	--	--	--	--	--	--	-0.29
Jamtara	2008-09	0.63	--	8.26	97.12	--	--	--	--	--	--	50.78
	2015-16	0.63	--	7.94	95.86	--	--	--	--	--	--	50.47
	Change	0.00	--	-0.33	-1.26	--	--	--	--	--	--	-0.30
Koderma	2008-09	11.25	--	37.93	142.69	--	--	--	--	--	--	143.62
	2015-16	11.07	--	37.93	141.00	--	--	--	--	--	--	142.48
	Change	-0.18	--	0.00	-1.69	--	--	--	--	--	--	-1.14
Latehar	2008-09	70.52	--	177.18	111.68	--	--	--	--	--	--	460.64
	2015-16	70.52	--	177.12	111.30	--	--	--	--	--	--	460.23
	Change	0.00	--	-0.06	-0.38	--	--	--	--	--	--	-0.40
Lohardaga	2008-09	5.78	--	5.38	31.92	--	--	--	--	--	--	41.10
	2015-16	5.41	--	5.38	31.62	--	--	--	--	--	--	41.10
	Change	-0.37	--	0.00	-0.30	--	--	--	--	--	--	0.00

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

2008-09 Wastelands statistics are revised version.

- | | |
|--|--|
| 1. Gullied and/ or ravinous land (Medium) | 7. Land affected by salinity/alkalinity (Medium) |
| 2. Gullied and/ or ravinous 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
69.07	--	--	--	--	--	--	--	26.74	15.73	3.24	--	603.47	2861
69.07	--	--	--	--	--	--	--	26.74	15.73	3.24	--	602.24	
0.00	--	--	--	--	--	--	--	0.00	0.00	0.00	--	-1.23	
151.48	--	--	--	--	--	--	--	11.04	--	3.19	--	1128.17	3706
151.25	--	--	--	--	--	--	--	18.75	--	3.19	--	1132.00	
-0.24	--	--	--	--	--	--	--	7.70	--	0.00	--	3.83	
71.69	--	--	--	--	--	--	--	2.51	--	9.69	--	544.62	2476
71.69	--	--	--	--	--	--	--	2.51	--	9.69	--	543.37	
0.00	--	--	--	--	--	--	--	0.00	--	0.00	--	-1.25	
24.26	--	--	--	--	--	--	--	75.08	0.21	4.44	--	411.33	2996
24.20	--	--	--	--	--	--	--	80.13	1.41	4.44	--	414.17	
-0.06	--	--	--	--	--	--	--	5.05	1.20	0.00	--	2.83	
12.15	--	--	--	--	--	--	--	13.66	--	11.76	--	349.73	4412
12.15	--	--	--	--	--	--	--	13.66	--	11.76	--	349.41	
0.00	--	--	--	--	--	--	--	0.00	--	0.00	--	-0.32	
10.50	--	--	0.02	--	--	--	--	1.03	--	22.58	--	651.80	4044
26.63	--	--	0.02	--	--	--	--	1.03	--	22.58	--	651.65	
16.13	--	--	0.00	--	--	--	--	0.00	--	0.00	--	-0.15	
127.71	--	--	--	--	--	--	--	3.23	0.39	6.64	--	876.69	4029
128.17	--	--	--	--	--	--	--	3.94	0.39	6.64	--	868.84	
0.47	--	--	--	--	--	--	--	0.71	0.00	0.00	--	-7.85	
5.28	--	--	--	--	--	--	--	4.02	--	14.27	--	236.59	2108
5.28	--	--	--	--	--	--	--	4.83	--	14.27	--	237.16	
0.00	--	--	--	--	--	--	--	0.81	--	0.00	--	0.56	
30.67	--	--	--	--	--	--	--	3.75	--	115.27	--	568.61	5321
30.61	--	--	--	--	--	--	--	9.28	--	111.67	--	568.56	
-0.06	--	0.00	--	--	--	--	--	5.53	--	-3.60	--	-0.05	
91.00	--	0.15	--	--	--	--	--	30.45	0.46	14.86	--	911.34	4913
91.05	--	0.15	--	--	--	--	--	32.30	0.52	14.80	--	911.84	
0.05	--	0.00	--	--	--	--	--	1.85	0.06	-0.05	--	0.49	
8.79	--	0.08	--	--	--	--	--	0.14	--	8.58	--	174.38	1800
8.79	--	1.06	--	--	--	--	--	0.26	--	8.56	--	173.58	
0.00	--	0.98	--	--	--	--	--	0.12	--	-0.02	--	-0.81	
10.12	--	1.32	--	--	--	--	--	11.03	0.36	2.09	--	360.42	2545
10.12	--	1.32	--	--	--	--	--	11.35	1.73	2.09	--	359.09	
0.00	--	0.00	--	--	--	--	--	0.32	1.37	0.00	--	-1.33	
25.93	--	--	--	--	--	--	--	1.83	--	2.01	--	849.77	4250
26.13	--	--	--	--	--	--	--	1.83	--	2.01	--	849.13	
0.20	--	--	--	--	--	--	--	0.00	--	0.00	--	-0.64	
5.24	--	--	--	--	--	--	--	3.79	--	3.18	--	96.39	1491
5.10	--	--	--	--	--	--	--	4.22	--	3.18	--	96.02	
-0.14	--	--	--	--	--	--	--	0.44	--	0.00	--	-0.37	

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	



Jharkhand contd...

Wastelands Area Changes – 2008-09 and 2015-16

District	WL_Class	1	2	3	4	5	6	7	8	9	10	11
Pakur	2008-09	0.30	--	56.95	79.93	0.04	--	--	--	--	--	30.96
	2015-16	0.30	--	56.82	79.93	0.04	--	--	--	--	--	30.96
	Change	0.00	--	-0.12	0.00	0.00	--	--	--	--	--	0.00
Palamu	2008-09	2.12	--	61.86	129.14	--	0.05	--	--	--	--	408.43
	2015-16	2.06	--	61.16	128.46	--	0.05	--	--	--	--	407.98
	Change	-0.07	--	-0.70	-0.68	--	0.00	--	--	--	--	-0.45
Pashchim Singhbhum	2008-09	--	--	207.82	62.88	--	--	--	--	--	--	168.97
	2015-16	--	--	207.82	62.88	--	--	--	--	--	--	168.97
	Change	--	--	0.00	0.00	--	--	--	--	--	--	0.00
Purba Singhbhum	2008-09	--	--	91.99	73.33	--	--	--	--	--	--	157.92
	2015-16	--	--	91.24	72.42	--	--	--	--	--	--	157.92
	Change	--	--	-0.76	-0.91	--	--	--	--	--	--	0.00
Ranchi	2008-09	1.27	--	191.12	122.96	--	--	--	--	--	--	302.80
	2015-16	1.27	--	190.07	119.64	--	--	--	--	--	--	302.80
	Change	0.00	--	-1.06	-3.32	--	--	--	--	--	--	0.00
Sahibganj	2008-09	--	--	35.50	25.27	0.07	0.08	--	--	--	--	40.71
	2015-16	--	--	35.08	24.86	0.07	0.08	--	--	--	--	40.66
	Change	--	--	-0.41	-0.41	0.00	0.00	--	--	--	--	-0.06
Saraikela Kharasawan	2008-09	0.10	--	45.00	102.40	--	0.02	--	--	--	--	91.65
	2015-16	0.10	--	44.81	102.36	--	0.02	--	--	--	--	91.34
	Change	0.00	--	-0.19	-0.04	--	0.00	--	--	--	--	-0.30
Simdega	2008-09	0.29	--	330.08	47.99	--	--	--	--	--	--	356.20
	2015-16	0.29	--	329.02	47.99	--	--	--	--	--	--	336.47
	Change	0.00	--	-1.06	0.00	--	--	--	--	--	--	-19.74
Grand Total	2008-09	270.70	0.90	2102.97	2420.50	0.26	0.15	--	--	--	--	5121.33
	2015-16	270.02	0.90	2096.95	2399.93	0.11	0.15	--	--	--	--	5073.39
	Change	-0.68	0.00	-6.02	-20.57	-0.15	0.00	--	--	--	--	-47.94

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

2008-09 Wastelands statistics are revised version.

- | | |
|--|--|
| 1. Gullied and/ or ravinous land (Medium) | 7. Land affected by salinity/alkalinity (Medium) |
| 2. Gullied and/ or ravinous 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
3.31	--	--	--	--	--	--	--	14.56	0.01	5.52	--	191.58	1805
3.31	--	--	--	--	--	--	--	16.95	0.01	5.52	--	193.85	
0.00	--	--	--	--	--	--	--	2.39	0.00	0.00	--	2.27	
64.11	--	--	--	--	--	--	--	0.24	--	43.80	--	709.75	4455
64.44	--	--	--	--	--	--	--	1.97	--	43.59	--	709.71	
0.33	--	--	--	--	--	--	--	1.73	--	-0.21	--	-0.04	
134.41	--	--	--	--	--	--	--	13.83	--	11.20	--	599.12	7267
134.41	--	--	--	--	--	--	--	13.83	--	11.20	--	599.12	
0.00	--	--	--	--	--	--	--	0.00	--	0.00	--	0.00	
57.44	--	0.06	--	--	--	--	--	2.81	2.34	6.16	--	392.05	3533
57.44	--	0.06	--	--	--	--	--	3.40	2.73	6.14	--	391.34	
0.00	--	0.00	--	--	--	--	--	0.59	0.39	-0.03	--	-0.71	
112.46	--	--	--	--	--	--	--	14.66	--	64.63	--	809.92	7698
112.46	--	--	--	--	--	--	--	16.73	--	63.26	--	806.23	
0.00	--	--	--	--	--	--	--	2.06	--	-1.37	--	-3.69	
14.56	--	--	--	--	--	--	--	14.13	--	2.49	--	132.80	1600
14.56	--	--	--	--	--	--	--	14.32	--	2.49	--	132.11	
0.00	--	--	--	--	--	--	--	0.19	--	0.00	--	-0.68	
14.79	--	3.70	--	--	--	--	--	1.95	0.52	5.27	--	265.40	2640
14.79	--	3.70	--	--	--	--	--	2.61	0.52	5.40	--	265.67	
0.00	--	0.00	--	--	--	--	--	0.66	0.00	0.14	--	0.27	
139.96	--	--	--	--	--	--	--	2.52	--	33.37	--	910.41	3756
145.86	--	--	--	--	--	--	--	36.00	--	16.39	--	912.01	
5.90	--	--	--	--	--	--	--	33.48	--	-16.98	--	1.60	
1184.93	--	5.31	0.02	--	--	--	--	253.03	20.02	394.24	--	11774.36	79706
1207.51	--	6.29	0.02	--	--	--	--	316.66	23.04	372.11	--	11767.08	
22.57	--	0.98	0.00	--	--	--	--	63.64	3.02	-22.13	--	-7.28	

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	

