



Environmental Conditions and Quality

Physical, biological and chemical characteristics of the environment

- ★ Atmosphere, climate & weather
- ★ Geological & geographical information
- ★ Soil characteristics,
- ★ Land cover, ecosystem & biodiversity
- ★ Environment quality of air, freshwater and marine water quality.



Statement 1.01 : Annual and Seasonal Mean Temperature - India

Unit - (°C)

Year	Annual	Jan-Feb	Mar-May	June-Sept	Oct-Dec
1901-10*	25.26	20.37	27.36	27.85	22.98
1911-20*	25.27	20.68	27.24	27.81	22.98
1921-30*	25.40	20.69	27.71	27.83	22.97
1931-40*	25.38	20.81	27.45	27.78	23.15
1941-50*	25.38	20.58	27.60	27.90	23.01
1951-60*	25.53	20.97	27.70	27.90	23.22
1961-70*	25.44	20.81	27.55	27.88	23.17
1981-90*	25.57	20.93	27.56	28.03	23.38
1991-2000*	25.73	21.09	27.76	28.12	23.60
2001	25.87	21.29	27.96	28.02	23.98
2002	26.03	21.29	28.28	28.30	23.94
2003	25.90	21.32	28.09	28.23	23.67
2004	25.94	21.36	28.35	28.13	23.67
2005	25.86	21.41	27.93	28.40	23.37
2006	26.15	22.59	27.92	28.17	24.06
2007	26.01	21.54	28.18	28.26	23.82
2008	25.85	20.78	27.97	27.96	24.30
2009	26.40	22.31	28.44	28.74	23.94
2010	26.41	21.76	29.34	28.39	23.94
2011	25.82	20.91	27.84	28.18	23.92
2012	25.89	20.73	28.02	28.48	23.76
2013	25.96	21.41	28.29	28.10	23.80
2014	26.01	21.05	27.85	28.68	23.93
2015	26.15	21.57	27.81	28.53	24.38
2016	26.46	22.25	28.86	28.45	24.20

Source: India Meteorological Department, Ministry of Earth Science (retrieved from data.gov.in)

* Denotes average for the period.

Statement: 1.02 - Annual and Seasonal Minimum and Maximum Temperature - India

Unit - (°C)

Year	Annual		Jan-Feb		Mar-May		June-Sept		Oct-Dec	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1901-10*	20.21	30.45	13.60	27.25	21.32	33.42	23.98	31.98	16.92	28.74
1911-20*	20.18	30.31	14.37	26.71	21.01	33.61	23.94	32.11	17.47	28.98
1921-30*	20.45	30.52	14.09	27.09	21.78	34.17	24.09	31.76	17.42	28.26
1931-40*	20.47	30.34	14.94	26.62	21.72	33.42	24.13	31.64	17.54	28.71
1941-50*	19.88	30.70	13.53	27.37	21.50	33.74	24.03	31.77	16.54	29.11
1951-60*	20.45	30.72	14.40	27.52	21.56	33.90	23.91	31.84	17.18	29.20
1961-70*	20.14	30.97	14.25	27.79	21.20	33.89	23.84	32.01	17.06	29.20
1971-80*	19.93	30.93	13.94	27.38	21.41	33.96	23.61	32.42	17.13	29.31
1981-90*	20.20	31.09	14.35	27.67	21.49	34.06	23.88	32.80	17.51	29.29
1991-2000*	20.43	30.91	14.73	27.22	21.64	33.72	24.15	32.23	17.75	29.76
2001	20.86	30.89	15.26	27.32	22.43	33.49	24.29	31.75	18.45	29.52
2002	21.00	31.07	15.43	27.15	22.75	33.80	24.42	32.17	18.40	29.47
2003	20.93	30.88	15.56	27.09	22.56	33.62	24.43	32.02	18.20	29.15
2004	20.93	30.96	15.49	27.23	22.71	33.99	24.29	31.97	18.28	29.07
2005	20.83	30.89	15.87	26.94	22.31	33.55	24.46	32.34	17.84	28.91
2006	21.11	31.20	16.17	29.00	22.33	33.51	24.37	31.98	18.82	29.31
2007	21.02	31.00	15.72	27.37	22.60	33.77	24.58	31.94	18.23	29.42
2008	20.85	30.85	14.91	26.64	22.31	33.63	24.22	31.70	18.87	29.74
2009	21.24	31.55	16.25	28.37	22.67	34.21	24.69	32.80	18.54	29.34
2010	21.45	31.37	15.82	27.70	23.56	35.11	24.58	32.19	18.91	28.98
2011	20.67	30.97	14.81	27.02	22.10	33.58	24.39	31.97	18.18	29.65
2012	20.70	31.08	14.69	26.78	22.07	33.97	24.58	32.37	18.18	29.34
2013	20.99	30.93	15.54	27.28	22.50	34.09	24.41	31.80	18.55	29.05
2014	20.99	31.04	15.44	26.66	22.09	33.62	24.74	32.61	18.58	29.28
2015	21.13	31.18	15.76	27.39	22.29	33.34	24.53	32.52	19.01	29.74
2016	21.28	31.63	16.17	28.33	23.15	34.57	24.61	32.28	18.37	30.04

Source: India Meteorological Department, Ministry of Earth Science (retrieved from data.gov.in)

* Denotes min. & max. for the period.

Statement 1.03: Annual and Monthly Rainfall - India

Unit -Millimetre

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1901-10*	19.7	22.4	24.2	37.1	49.5	147.8	273.5	254.9	161.4	60.8	21.5	15.9	1088.7
1911-20*	20.2	25.4	32.6	36.2	64.8	186.7	268.4	247.1	165.6	78.6	36.5	12.5	1174.6
1921-30*	25.6	23.3	23.2	40.6	61.5	167.9	315.9	256.9	180.4	77.1	35.0	18.0	1225.3
1931-40*	17.8	31.8	28.3	40.6	66.4	190.5	308.1	263.4	176.9	79.3	33.1	14.4	1250.5
1941-50*	27.0	24.4	29.8	42.0	71.2	165.3	322.0	264.7	192.0	72.7	29.7	15.0	1255.7
1951-60*	23.6	16.0	28.9	33.6	66.9	162.9	307.9	271.7	183.9	98.9	24.0	11.4	1229.8
1961-70*	15.9	20.4	28.2	36.9	58.8	159.9	292.3	262.7	177.9	69.1	24.1	18.5	1164.4
1971-80*	15.3	21.9	24.1	36.6	59.2	172.3	279.6	263.2	156.5	76.9	36.4	14.2	1156.2
1981-90*	18.2	25.9	36.5	43.2	67.2	164.6	285.5	263.1	172.2	72.9	27.0	20.3	1196.5
1991-2000*	20.0	23.3	28.0	34.7	64.8	171.6	289.9	256.2	167.2	78.9	30.2	15.6	1180.1
2001	7.2	10.3	21.3	45.5	61.3	215.1	281.1	210.0	109.2	97.7	18.5	6.0	1083.3
2002	16.8	21.0	22.9	38.9	57.7	170.1	138.9	246.2	133.9	54.4	14.7	5.2	920.8
2003	7.2	42.1	33.7	35.5	38.6	164.5	305.6	247.8	179.9	92.7	10.2	16.6	1174.5
2004	26.2	10.7	11.9	50.6	74.5	167.8	241.7	252.5	123.6	88.8	16.9	6.1	1071.3
2005	40.3	46.0	42.6	38.5	50.3	146.9	340.3	192.0	200.7	96.2	27.2	11.5	1232.5
2006	17.4	11.5	34.4	30.4	80.7	151.4	298.5	302.6	175.4	52.3	32.1	12.7	1199.4
2007	2.7	35.7	34.4	33.6	50.4	201.4	295.8	259.2	215.1	55.3	15.2	16.7	1215.6
2008	22.4	19.2	37.7	32.6	45.2	208.8	250.0	264.3	165.7	50.5	25.1	10.8	1132.1
2009	11.8	13.2	15.2	26.0	56.6	86.5	283.7	191.9	140.3	70.1	53.2	10.8	959.3
2010	7.5	16.3	16.6	42.1	69.0	140.9	293.6	272.3	195.6	67.7	56.7	22.1	1200.5
2011	7.7	26.3	21.4	41.0	51.6	182.8	243.0	284.6	190.5	36.5	18.4	6.5	1110.1
2012	28.5	10.8	10.6	48.5	32.1	125.0	258.1	263.9	197.7	59.8	28.9	9.6	1073.5
2013	10.0	36.9	14.5	29.4	56.5	217.9	305.4	248.4	148.4	128.9	13.7	6.2	1216.2
2014	17.3	25.9	32.6	20.2	72.8	95.5	258.8	237.9	187.9	60.9	13.5	10.4	1033.7
2015	17.4	21.0	62.0	69.4	53.8	192.8	242.4	205.2	131.8	42.9	39.4	15.0	1093.2
2016	7.8	10.1	30.8	31.4	68.1	147.6	309.2	239.6	168.0	54.5	7.7	8.4	1083.1

Source: India Meteorological Department, Ministry of Earth Science (retrieved from data.gov.in)

* Denotes average for the period.

Statement 1.04: Monsoon performance as departure from long-term mean**(June-September)**

Sl. No.	Year	Number of Meteorological Sub-Divisions			Percentage of Long Period Average Rainfall for the Country as a Whole
		Normal	Large Excess/ Excess (LE/E)	Deficient/Large Deficient (D/LD)	
1	1998	22	11	2	105
2	1999	25	3	7	96
3	2000	23	5	7	92
4	2001	28	1	6	91
5	2002	14	1	21	81
6	2003	23	8	5	105
7	2004	23	0	13	87
8	2005	24	8	4	99
9	2006	21	6	9	100
10	2007	18	13	5	106
11	2008	31	2	3	98
12	2009	11	3	22	78
13	2010	17	14	5	102
14	2011	26	7	3	102
15	2012	22	1	13	93
16	2013	16	14	6	106
17	2014	24	1	11	88
18	2015	19	1	16	86
19	2016	22	4	10	97

Source : India Meteorological Department, Ministry of Earth Sciences.

Category: % Age from LPA(Long Period Average)

LE : Large Excess +60% or more

E : Excess +20% to +59%

N : Normal +19% to -19%

D : Deficient

LD : Large Deficient

NR : No Rain

-20% to -59%

-60% to -90%

-100%

Statement 1.05 : Sub divisional Actual and Normal rainfall

Unit -Millimetre

Sl. No.	Meteorological Sub-divisions	2012		2013		2014		2015		2016	
		Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal
East & North India											
1	Arunachal Pradesh	2760.9	2933.7	2042.9	2933.7	2403.2	2933.7	2593.2	2933.7	2706.9	2933.7
2	Assam and Meghalaya	2321.3	2624.9	1811.5	2624.9	2171.9	2624.9	2509.4	2624.9	2266.9	2624.9
3	Bihar	924.2	1205.6	1069.9	1205.6	1061.0	1205.6	874.0	1205.6	1158	1205.6
4	Gangetic West Bengal	1258.3	1527.2	1804.7	1527.2	1241.7	1527.2	1507.7	1527.2	1427	1527.2
5	Jharkhand	1102.0	1296.3	1253.6	1296.3	1156.6	1296.3	1085.6	1296.3	1264	1296.3
6	Nagaland, Mizoram, Manipur & Tripura	1669.2	2278.0	1557.2	2278.0	1599.9	2278	1947.4	2278.0	1956.4	2278
7	Sub-Himalayan West Bengal & Sikkim	2630.2	2708.9	2406.1	2708.9	2322.6	2708.9	2501.7	2708.9	2624.8	2708.9
North West India											
1	Haryana, Chandigarh & Delhi	313.6	562.8	461.3	562.8	305.6	562.8	437.8	562.8	6	562.8
2	Himachal Pradesh	1035.1	1373.9	1216.9	1373.9	1019.9	1373.9	1223.2	1373.9	444	1373.9
3	Jammu & Kashmir	1116.5	1205.3	1193.8	1205.3	1278.4	1205.3	1572.6	1205.3	902.8	1205.3
4	Punjab	338.9	635.9	586.6	635.9	382.7	635.9	512.6	635.9	398.7	635.9
5	East Uttar Pradesh	853.6	1018.6	1042.1	1018.6	701.4	1018.6	603.6	1018.6	871.7	1018.6
6	West Uttar Pradesh	582.8	886.2	925.9	886.2	487.0	886.2	586.4	886.2	692.8	886.2
7	Uttarakhand	1309.7	1580.9	1735.4	1580.9	1287.4	1580.9	1247.6	1580.9	1308	1580.9
8	East Rajasthan	695.8	671.3	834.9	671.3	683.0	671.3	650.6	671.3	860.6	671.3
9	West Rajasthan	318.3	299.3	389.4	299.3	302.4	299.2	458.6	299.2	247	299.2
Central India											
1	Odisha	1430.2	1460.5	1632.4	1460.5	1536.9	1460.5	1210.1	1460.5	1253.5	1460.5
2	West Madhya Pradesh	1012.3	956.3	1396.3	956.3	864.9	956.3	1045.4	956.3	1098	956.3
3	East Madhya Pradesh	1097.0	1169.4	1521.9	1169.4	924.1	1169.4	943.5	1169.4	1340	1169.4
4	Gujarat Region	652.0	943.4	1250.5	943.4	792.2	943.4	677.6	943.4	764.9	956.9
5	Saurashtra, Kutch	315.2	507.0	823.9	507.0	467.8	507.0	516.1	507.0	482.9	511.3
6	Konkan & Goa	2993.9	3100.5	3684.9	3100.5	2913.2	3100.2	2191.5	3100.2	3663.9	3101.1
7	Madhya Maharashtra	664.2	876.8	962.4	876.8	838.0	876.8	629.5	876.8	906.3	876.8
8	Marathwada	538.4	821.6	888	821.6	548.9	821.6	532.8	821.6	949	821.6
9	Vidarbha	1090.3	1084.5	1520	1084.5	919.2	1084.5	993.7	1084.5	1163	1084.5
10	Chhattisgarh	1366.8	1290.7	1418.3	1290.7	1274.7	1290.7	1136.0	1290.7	1315.8	1298.9
South Peninsula											
1	Andaman & Nicobar Islands	3515.9	2926.3	3757.8	2926.3	2622.4	2926.3	2904.4	2926.3	2851.9	2926.3
2	Coastal Andhra Pradesh	1183.4	1024.2	1081.8	1024.2	777.4	1024.2	987.9	1024.2	908.9	1024.2
3	Telangana	972.8	942.6	1272.1	942.6	685.6	942.6	747.9	942.6	1043.4	942.6
4	Rayalaseema	665.3	706.1	677.2	706.1	523.4	706.1	875.6	706.1	555.4	706.1
5	Tamilnadu & Puducherry	709.6	914.4	741.9	914.4	913.2	914.4	1204.5	914.4	535	914.4
6	Coastal Karnataka	3395.0	3526.3	4044.6	3526.3	3563.9	3526.3	2757.3	3526.3	2619.7	3526.3
7	North Interior Karnataka	529.4	740.3	723.2	740.3	756.8	740.3	549.9	740.3	625	740.3
8	South Interior Karnataka	832.1	1019.2	1110.7	1019.2	1184.1	1019.2	1083.8	1019.2	687.3	1019.2
9	Kerala	2187.5	2923.4	3255.4	2923.4	3046.4	2924.3	2602.9	2924.3	1870.9	2924.3
10	Lakshadweep	1433.2	1600.0	1426.3	1600.0	1395.0	1600	1640.0	1600.0	1065.7	1600

Source : India Meteorological Department, Ministry of Earth Sciences

Statement 1.06 : (a) State-wise rainfall distribution of districts

Season: Monsoon, 2016

Sl. No.	State/UT	LE	E	N	D	LD	NR	ND	Total	% of normal rainfall
1	Andhra Pradesh	0	4	8	1	0	0	0	13	62
2	Arunachal Pradesh	2	0	4	5	1	0	4	16	25
3	Assam	0	0	14	12	0	0	1	27	52
4	Bihar	0	7	20	11	0	0	0	38	53
5	Chhattisgarh	0	5	18	4	0	0	0	27	67
6	Goa	0	0	2	0	0	0	0	2	100
7	Gujarat	0	2	15	16	0	0	0	33	45
8	Haryana	0	0	9	11	1	0	0	21	43
9	Himachal Pradesh	0	0	8	3	1	0	0	12	67
10	Jammu & Kashmir	0	1	10	5	1	0	5	22	45
11	Jharkhand	1	3	15	5	0	0	0	24	63
12	Karnataka	0	2	16	12	0	0	0	30	53
13	Kerala	0	0	0	14	0	0	0	14	0
14	Madhya Pradesh	2	23	21	5	0	0	0	51	41
15	Maharashtra	0	17	17	2	0	0	0	36	47
16	Manipur	1	0	0	1	0	0	7	9	0
17	Meghalaya	0	1	1	2	0	0	3	7	14
18	Mizoram	0	0	3	1	0	0	5	9	33
19	Nagaland	0	1	1	2	0	0	7	11	9
20	Odisha	0	0	25	5	0	0	0	30	83
21	Punjab	0	2	8	8	2	0	0	20	40
22	Rajasthan	2	19	11	1	0	0	0	33	33
23	Sikkim	0	0	4	0	0	0	0	4	100
24	Tamil Nadu	0	1	14	16	1	0	0	32	44
25	Telangana	0	7	3	0	0	0	0	10	30
26	Tripura	0	0	2	2	0	0	0	4	50
27	Uttar Pradesh	0	6	30	31	5	0	0	72	42
28	Uttarakhand	0	2	6	5	0	0	0	13	46
29	West Bengal	0	0	17	2	0	0	0	19	89
30	Andaman & Nicobar Islands	0	0	2	1	0	0	0	3	67
31	Chandigarh	0	0	0	1	0	0	0	1	0
32	Dadra & Nagar Haveli	0	1	0	0	0	0	0	1	0
33	Daman & Diu	0	1	1	0	0	0	0	2	50
34	Delhi	0	0	6	2	0	0	1	9	67
35	Lakshadweep	0	0	0	1	0	0	0	1	0
36	Puducherry	0	0	2	0	0	0	2	4	50
Total		8	105	313	187	12	0	35	660	47

Source: India Meteorological Department, M/o Earth Sciences

Note: The rainfall categories have been modified w.e.f. 2016.

LE : Large Excess +60% or More

E : Excess +20% to +59%

N : Normal + 19% to -19%

D : Deficient

LD : Large Deficient

NR : No Rain

-20% to -59%

-60% to -90%

-100%

Statement 1.06 : (b) State-wise rainfall distribution of districts

Season: Monsoon, 2011

Sl. NO.	STATE/UT	E	N	D	S	NR	ND	Total	% of normal rainfall
1	Andhra Pradesh	1	18	4	0	0	0	23	78
2	Arunachal Pradesh	1	2	7	1	0	5	16	13
3	Assam	0	6	18	0	0	3	27	22
4	Bihar	9	18	11	0	0	0	38	47
5	Chhattisgarh	3	14	1	0	0	0	18	78
6	Goa	1	1	0	0	0	0	2	50
7	Gujarat	10	12	4	0	0	0	26	46
8	Haryana	1	11	8	1	0	0	21	52
9	Himachal Pradesh	1	8	2	1	0	0	12	67
10	Jammu & Kashmir	3	11	3	2	0	3	22	50
11	Jharkhand	6	11	2	0	0	5	24	46
12	Karnataka	3	15	12	0	0	0	30	50
13	Kerala	2	10	2	0	0	0	14	71
14	Madhya Pradesh	20	28	2	0	0	0	50	56
15	Maharashtra	7	26	2	0	0	0	35	74
16	Manipur	0	1	0	0	0	8	9	11
17	Meghalaya	0	3	1	0	0	3	7	43
18	Mizoram	0	0	1	0	0	8	9	0
19	Nagaland	0	0	3	0	0	8	11	0
20	Orissa	4	22	4	0	0	0	30	73
21	Punjab	4	10	5	1	0	0	20	50
22	Rajasthan	29	4	0	0	0	0	33	12
23	Sikkim	0	3	0	0	0	1	4	75
24	Tamil Nadu	6	11	14	1	0	0	32	34
25	Tripura	0	3	1	0	0	0	4	75
26	Uttar Pradesh	9	40	21	1	0	0	71	56
27	Uttaranchal	7	6	0	0	0	0	13	46
28	West Bengal	8	10	1	0	0	0	19	53
29	Andaman & Nicobar Islands	1	2	0	0	0	0	3	67
30	Chandigarh	0	1	0	0	0	0	1	100
31	Dadra & Nagar Haveli	0	2	0	0	0	0	2	100
32	Daman & Diu	0	1	0	0	0	0	1	100
33	Delhi	1	4	4	0	0	0	9	44
34	Lakshadweep	0	1	0	0	0	0	1	100
35	Pondicherry	1	0	1	0	0	2	4	0
Total		138	315	134	8	0	46	641	49

Source: India Meteorological Department, M/o Earth Sciences

Legend :

E : Excess

N : Normal

ND : No Data

D : Deficient

S : Scanty

NR : No Rainfall

Blank figures indicate nil

Statement 1.07 : Wetlands in India

(Area in Ha.)

Sr. No.	Wettcode	Wetland Category	Number of wetlands	Total Wetland area	% of Wetland area	Open Water	
						Post-monsoon area	Pre-monsoon area
	1100	Inland wetlands-Natural					
1	1101	Lake/Pond	11740	729532	4.78	454416	198054
2	1102	Ox-bow lake/Cut-off meander	4673	104124	0.68	57576	37818
3	1103	High altitude lake	2707	124253	0.81	116615	109277
4	1104	Riverine wetland	2834	91682	0.60	48918	29739
5	1105	Waterlogged	11957	315091	2.06	197003	112631
6	1106	River/Stream	11747	5258385	34.46	3226238	2628182
	1200	Inland Wetlands-Man-made					
7	1201	Reservoir/Barrage	14894	2481987	16.26	2260574	1268237
8	1202	Tank/Pond	122370	1310443	8.59	916020	349512
9	1203	Waterlogged	5488	135704	0.89	85715	33822
10	1204	Salt pan	60	13698	0.09	5293	2599
		Total -Inland	188470	10564899	69.22	7368368	4769871
	2100	Coastal Wetlands-Natural					
11	2101	Lagoon	178	246044	1.61	208915	191301
12	2102	Creek	586	206698	1.35	199743	189489
13	2103	Sand/Beach	1353	63033	0.41	-	-
14	2104	Intertidal mud flat	2931	2413642	15.82	516636	366953
15	2105	Salt Marsh	744	161144	1.06	5369	2596
16	2106	Mangrove	3806	471407	3.09	-	-
17	2107	Coral Reef	606	142003	0.93	-	-
	2200	Coastal Wetlands-Man-made					
18	2201	Salt pan	609	148913	0.98	105253	94047
19	2202	Aquaculture pond	2220	287232	1.88	196514	186963
		Total -Coastal	13033	4140116	27.13	1232430	1031349
		Sub-Total	201503	14705015	96.35	8600798	5801220
		Wetlands(<2.25ha)	555557	555557	3.64	-	-
		Total	757060	15260572	99.99	8600798	5801220

Area under Aquatic Vegetation			1322837	2065096
Area under turbidity levels				
Low			3206003	1888493
Mooderate			4168401	2967523
High			1226394	945204

Source : National Wetlands Atlas, National Remote Sensing Centre, Government of India

Statement 1.08 : State-wise Inland Water Resources

Sl. No.	States	Rivers & Canals (Length in kms.)	Reservoirs (Lakh Ha.)	Tanks & Ponds (Lakh Ha.)	Floodplain Lakes & Derelict Water (Lakh Ha.)	Brackish Water (Lakh Ha.)	Total (Lakh Ha.)
1	Andhra Pradesh	11514	2.34	5.17	-	0.60	8.11
2	Arunachal Pradesh	2000	-	2.76	0.42	-	3.18
3	Assam	4820	0.02	0.23	1.10	-	1.35
4	Bihar	3200	0.60	0.95	0.05	-	1.60
5	Chhattisgarh	3573	0.84	0.63	-	-	1.47
6	Goa	250	0.03	0.03	-	NEG	0.06
7	Gujarat	3865	2.43	0.71	0.12	1.00	4.26
8	Haryana	5000	NEG	0.10	0.10	-	0.20
9	Himachal Pradesh	3000	0.42	0.01	-	-	0.43
10	Jammu & Kashmir	27781	0.07	0.17	0.06	-	0.30
11	Jharkhand	4200	0.94	0.29	-	-	1.23
12	Karnataka	9000	4.40	2.90	-	0.10	7.40
13	Kerala	3092	0.30	0.30	2.43	2.40	5.43
14	Madhya Pradesh	17088	2.27	0.60	-	-	2.87
15	Maharashtra	16000	2.79	0.59	-	0.10	3.48
16	Manipur	3360	0.01	0.05	0.04	-	0.10
17	Meghalaya	5600	0.08	0.02	NEG	-	0.10
18	Mizoram	1395	-	0.02	-	-	0.02
19	Nagaland	1600	0.17	0.50	NEG	-	0.67
20	Odisha	4500	2.56	1.14	1.80	4.30	9.80
21	Punjab	15270	NEG	0.07	-	-	0.07
22	Rajasthan	5290	1.20	1.80	-	-	3.00
23	Sikkim	900	-	-	0.03	-	0.03
24	Tamil Nadu	7420	5.70	0.56	0.07	0.60	6.93
25	Tripura	1200	0.05	0.13	-	-	0.18
26	Uttar Pradesh	28500	1.38	1.61	1.33	-	4.32
27	Uttarakhand	2686	0.20	0.01	0.00	-	0.21
28	West Bengal	2526	0.17	2.76	0.42	2.10	5.45
29	Andaman & Nicobar Islands	-	0.00367	0.001600	-	0.33	0.33527
30	Chandigarh	2	-	NEG	NEG	-	0.00
31	Dadra & Nagar Haveli	54	0.05	-	-	-	0.05
32	Daman & Diu	12	-	NEG	-	NEG	0.00
33	Delhi	150	0.04	-	-	-	0.04
34	Lakshadweep	-	-	-	-	-	0.00
35	Puducherry	247	-	NEG	0.01	NEG	0.01
TOTAL		195095	29.26	24.32	7.98	11.55	73.12

Source : Annual report 2016-17, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare
NEG: Negligible

Statement 1.09 : Water Sheds in India

Name of Basin & River length	S. No.	Name of Sub-Basin	Area (Sq. Km.)	Size Range of Watershed (Sq. Km.)	No. of Watersheds	Dams	Barrages	Weirs	Anicuts	Lifts	Power House
Indus - 1114 (2280) km	1	Beas	19002.47	389 - 999	30	11	2	5	0	4	16
	2	Chenab	29981.38	323 - 1127	48	4	0	2	0	5	6
	3	Ghaghar and others	26235.29	207 - 1158	45	2	0	0	0	5	0
	4	Gilgit	27088.70	340 - 1012	37	0	0	0	0	0	0
	5	Jhelum	29200.52	320 - 1322	44	3	1	5	0	26	8
	6	Lower Indus	23894.10	319 - 1270	31	0	0	0	0	0	0
	7	Ravi	13710.20	390 - 1303	20	7	3	1	0	2	9
	8	Shyok	38545.05	430 - 1374	53	0	0	0	0	0	0
	9	Satluj Lower	38442.79	329 - 1296	58	7	4	0	0	3	6
	10	Satluj Upper	21439.43	384 - 952	31	4	1	2	0	0	10
	11	Upper Indus	46450.13	383 - 974	70	1	2	3	0	0	4
	12	Above Ramganga Confluence	39104.61	430 - 1301	51	3	9	0	0	0	11
	13	Banas	51651.51	331 - 1433	64	76	0	0	0	0	0
	14	Bhagirathi and others (Ganga Lower)	64038.97	308 - 1755	75	12	10	3	0	0	4
Ganga - 2525 km	15	Chambal Lower	10941.26	406 - 1136	14	3	0	0	0	2	0
	16	Chambal Upper	25546.57	405 - 1404	30	31	1	0	0	1	2
	17	Damodar	41965.49	326 - 1301	60	39	3	6	0	0	4
	18	Gandak and others	56260.43	335 - 1309	76	30	5	36	0	6	0
	19	Ghaghara Confluence to Gomti confluence	58634.18	372 - 1762	36	11	7	0	0	7	3
	20	Ghaghara	26254.06	375 - 1300	76	12	0	7	0	7	2
	21	Gomti	29865.21	333 - 1331	41	0	1	0	0	0	0
	22	Kali Sindh and others up to Confluence with Parbati	48492.61	430 - 1275	64	125	1	2	0	0	1
	23	Kosi	18413.58	304 - 1695	19	0	0	2	0	0	1
	24	Ramganga	30839.69	350 - 1443	40	11	9	1	0	0	1
	25	Sone	65110.05	381 - 1389	83	159	2	19	0	5	7
	26	Tons	16905.74	442 - 1173	23	32	3	1	0	2	2
	27	Upstream of Gomti confluence to Muzaffarnagar	29061.37	364 - 1281	40	14	0	1	0	2	1
	28	Yamuna Lower	124867.19	734 - 1781	98	201	5	11	1	7	3
	29	Yamuna Middle	34586.39	410 - 1232	43	19	1	0	0	0	0
	30	Yamuna Upper	35798.19	328 - 1241	47	6	9	3	0	6	14

Contd.

Name of Basin & River length	S. No.	Name of Sub-Basin	Area (Sq. Km.)	Size Range of Watershed (Sq. Km.)	No. of Watersheds	Dams	Barrages	Weirs	Anicuts	Lifts	Power House
Brahmaputra - 916(2900) km Cauvery - 800 km	31	Brahmaputra Lower	87392.22	429 - 1490	83	13	16	5	0	2	18
	32	Brahmaputra Upper	98972.87	489- 1473	97	3	1	0	0	2	3
	33	Cauvery Lower	17386.45	321 -979	28	2	0	1	3	0	0
	34	Cauvery Middle	57280.98	377-935	86	85	10	3	9	2	23
Godavari - 1465 km	35	Cauvery Upper	10958.80	363-991	18	9	0	0	0	7	1
	36	Wardha	46242.09	361 - 946	69	236	3	4	0	4	0
	37	Weinganga	49695.40	305 - 972	80	149	2	3	0	15	1
	38	Godavari Lower	44492.93	304 - 990	67	28	5	3	1	7	7
	39	Godavari Middle	36290.47	325 - 955	56	186	16	0	0	15	3
	40	Godavari Upper	21443.23	331 - 988	33	114	0	5	0	7	3
	41	Indravati	38306.10	343 - 993	60	21	0	0	0	0	0
	42	Manjra	29472.88	421 - 981	44	128	1	1	0	6	2
Subernarekha Barak and Others	43	Pranhita and others	36119.60	326 - 982	57	59	1	2	0	8	0
	44	Subernarekha	25792.16	387 - 962	45	38	4	12	-	-	3
	45	Barak	27658.98	365 - 844	47	1	0	0	0	0	1
	46	Kynchiang and other south flowing rivers	10267.39	309 - 790	17	2	0	0	0	0	1
Krishna - 1401 km	47	Naochchara and others	76,95.81	384 - 857	13	1	3	0	0	0	1
	48	Bhima Lower	23652.70	396 - 929	36	68	5	0	0	2	0
	49	Bhima Upper	44793.32	351 - 940	71	273	0	1	0	30	9
	50	Krishna Lower	39494.33	277 - 971	59	29	2	0	2	1	4
	51	Krishna Middle	22229.12	341 - 963	36	34	0	0	0	8	4
	52	Krishna Upper	54504.77	322 - 964	85	188	4	57	0	61	10
	53	Tungabhadra Lower	41556.48	357 - 976	59	37	0	0	3	4	3
	54	Tungabhadra Upper	28519.41	331 - 924	45	31	1	0	1	13	5
Brahmani and Baitarni - 799 km Pennar - 597 km	55	Baitarni	14351.23	472 - 975	21	18	2	1	1	-	-
	56	Brahmani	37545.83	333 - 964	58	43	3	3	0	-	-
	57	Pennar Lower	17979.85	358 - 851	29	19	0	0	2	-	-
	58	Pennar Upper	36263.58	310 - 927	61	39	0	1	0	-	-
Mahanadi-851km	59	Mahanadi Lower	57958.88	320 - 1458	91	75	7	4	-	-	-
	60	Mahanadi Middle	51895.91	301 - 902	88	116	3	5	-	-	-
	61	Mahanadi Upper	29796.64	314 - 908	48	62	4	4	-	-	-
	62	Vasisthi and others	27473.95	335 - 979	47	113	0	2	0	1	9
West flowing rivers from Tapi to Tadri	63	Bhatsol and others	29348.90	311 - 932	49	106	0	1	0	0	9

Contd.

Name of Basin & River length	S. No.	Name of Sub-Basin	Area (Sq. Km.)	Size Range of Watershed (Sq. Km.)	No. of Watersheds	Dams	Barrages	Weirs	Anicuts	Lifts	Power House
Mahi-583 km	64	Mahi Lower	13377.00	372 - 873	22	47	0	2	0	0	1
	65	Mahi Upper	24959.80	331 - 954	41	87	0	2	0	0	2
Tapi - 724 km	66	Tapi Lower	4108.90	427 - 782	7	6	0	2	0	0	1
	67	Tapi Middle	31766.67	366 - 938	47	225	6	7	0	5	1
East flowing rivers between Pennar and Kanyakumari	68	Tapi Upper	28047.34	322-937	46	125	2	2	0	8	0
	69	Vaippar and others	20356.69	318-888	33	18	0	1	-	-	2
Narmada- 1312 km	70	Palar and other	35392.34	322-957	56	18	2	5	-	-	0
	71	Pamba and others	18289.41	317-938	30	7	0	2	-	-	3
West flowing rivers of Kutch and Saurashtra including Luni	72	Ponnaiyar and other	28249.49	357-900	46	18	0	5	-	-	1
	73	Narmada Lower	8904.02	308 - 750	16	22	0	1	-	0	2
Sabarmati - 371 km	74	Narmada Middle	40575.72	338 - 957	63	134	1	0	-	3	4
	75	Narmada Upper	43192.68	327 - 986	71	121	1	1	-	1	3
East flowing rivers between Mahanadi and Pennar	76	Luni Upper	70202.58	381-1448	81	27	0	0	0	0	0
	77	Luni Lower	29180.12	316-1419	42	55	0	0	0	0	0
West flowing rivers of Kutch and Saurashtra including Luni	78	Drainage of Rann	21229.90	311-968	40	107	0	1	0	0	0
	79	Saraswati	27260.84	309-1018	43	50	1	0	0	0	0
Sabarmati - 371 km	80	Bhadar and other WFR	18489.70	331-965	30	70	0	6	0	0	0
	81	Shetrunji and other EFR	18221.67	300-856	32	99	0	3	0	0	0
East flowing rivers between Mahanadi and Pennar	82	Sabarmati Lower	8904.02	398 - 986	17	17	0	0	0	0	0
	83	Sabarmati Upper	40575.72	313 - 828	34	33	2	10	0	0	0
West flowing rivers from Tadri to Kanyakumari	84	Vamsadhara & other	21870.63	392-930	34	27	2	12	6	0	0
	85	Nagvati & other	24372.24	358-928	41	21	2	0	3	0	0
Minor rivers draining into Myanmar and Bangladesh	86	East flowing rivers between Godavari & Krishna	10342.29	472-902	16	3	0	0	0	0	0
	87	East flowing rivers between Krishna & Pennar	23334.63	205-1404	41	13	1	0	3	0	0
West flowing rivers from Tadri to Kanyakumari	88	Netravati and others	18762.09	317 - 929	32	9	1	1	1	0	6
	89	Periyar and others	21895.21	340 - 934	37	40	4	2	0	0	17
Minor rivers draining into Myanmar and Bangladesh	90	Varrar and others	14164.70	363 - 978	23	20	1	3	3	0	6
	92	Imphal and others Sub Basin	16754.90	321 - 900	29	3	5	0	0	3	0
Mangpui Lui and others Sub Basin	93	Karnaphuli and Others Sub Basin	3776.84	312 - 882	6	-	-	-	-	-	-
	94	Mangpui Lui and others Sub Basin	7976.18	359 - 656	16	-	-	-	-	-	-
Muhury and Others Sub Basin	95	Muhury and Others Sub Basin	1676.39	532 - 608	3	-	-	-	-	-	-

Source : Basin-wise Reports as downloaded from India WRIS

Statement 1.10: Catchment area of major river basins

Sl. No.	Name of the River	Origin	Length (Km.)	Catchment Area (Sq. Km.)
1	Indus	Mansarovar (Tibet)	1114 (2880)	321289 (1165500)
2	a) Ganga	Gangotri	2525	861452 (1186000)
	b) Brahmaputra	Kailash Range (Tibet)	916 (2900)	194413 (580000)
	c) Barak & other rivers flowing into Meghna like Gomti, Muhari, Fenny etc.	Manipur Hills (Manipur)		41723
3	Sabarmati	Aravalli Hills (Rajasthan)	371	21674
4	Mahi	Dhar (Madhya Pradesh)	583	34842
5	Narmada	Amarkantak (Madhya Pradesh)	1312	98796
6	Tapi	Betul (Madhya Pradesh)	724	65145
7	Brahmani	Ranchi (Bihar)	799	39033
8	Mahanadi	Nazri Town (Madhya Pradesh)	851	141589
9	Godavari	Nasik (Maharashtra)	1465	312812
10	Krishna	Mahabaleshwar (Maharashtra)	1401	258948
11	Pennar	Kolar (Karnataka)	597	55213
12	Cauvery	Coorg (Karnataka)	800	81155
Total				2528084

Source : Water Year Book 2012, Central Water Commission

Note: Figures within bracket indicate the total river basin in India and neighbouring countries.

Statement 1.11 : Status of monitored glacial lakes & water bodies

Month	No. of Glacial Lakes /Water Bodies Monitored	Water Spread Area		
		Increased	Decreased	No Change
June-Oct, 2011	391	218	35	138
June-Oct, 2012	391*	88	110	190
June-Oct, 2013	476**	165	115	195
June-Oct, 2014	438#	88	178	170
June-Oct, 2015	459\$	119	144	195
June-Oct, 2016				
June 2016	372	25	247	100
July 2016	112	21	55	36
August 2016	181	21	95	65
September 2016	195	29	110	56
October 2016	398	105	168	125
June-Oct, 2017				
June 2017	192	58	90	44
July 2017	176	47	87	42
August 2017	165	37	86	42
September 2017	273	80	116	77
October 2017	326	97	122	107

Note:

*: Includes 3 new Glacial lakes that were missed earlier

**: Includes 1 Glacial lake that is dry

#: Includes 2 Water Bodies that are dry

\$: Includes 1 Glacial lake that is dry

Source: Monitoring of Glacier, Lakes and water Bodies in Himalayan region of Indian river basin (Report of the respective months), Centre Water Commission

Statement 1.12 : Glacial lakes with significant change in water spread**(a) : Lakes with increasing water spread**

S. No.	UID	Lake_ID	Water spread area in Ha	% Difference in Water spread area				
			2009 (Inventory)	2017	2016	2015	2014	2013
1	JK_5	01_42H_005	52	25.11	Cloud	-3.8	-7.7	-3.8
2	JK_120	01_43M_003	208	23.92	11.54	21.2	-3.8	10.6
3	JK_159	01_43N_032	49	30.08	22.45	12.2	8.2	-4.1
4	JK_115	01_43K_014	112	23.25	Cloud	16.1	13.4	6.3
5	HP_1	01_52D_001	688	29.05	26.16	8.6	9.4	11.3
6	HP_12	01_53E_001	72	81.65	79.17	15.3	20.8	29.2
7	HP_3	01_52H_002	62	44.58	29.03	25.8	21	21
8	JK_195	01_52I_003	180	24.12	23.33	17.2	Dry	9.4
9	CH_38	01_61C_010	88	27.28	Cloud	9.1	4.5	0
10	CH_39	01_61C_011	408	27.3	Cloud	12.5	0.5	-1.7
11	CH_53	01_61D_001	70	28.93	Cloud	8.6	7.1	-2.9
12	CH_55	01_61D_003	46	66.97	Cloud	-4.3	0	17.4
13	CH_101	01_62F_010	45	49.72	Cloud	13.3	8.9	4.4
14	CH_298	03_62J_026	103	24.69	Cloud	10.7	9.7	12.6
15	CH_303	03_62J_031	166	36.51	Cloud	15.7	2.4	4.8
16	CH_304	03_62J_032	77	21.32	Cloud	3.9	0	2.6
17	CH_313	03_62K_009	250	22.25	Cloud	17.6	14.4	12.4
18	CH_423	03_71G_014	140	22.22	Cloud	16.4	20.7	12.1
19	CH_430	03_71K_007	80	20.4	Cloud	-3.8	1.3	11.3
20	CH_132	02_71H_012	89	40.63	Cloud	41.6	34.8	23.6
21	CH_834	03_82J_004	378	45.7	Cloud	34.1	11.6	9
22	CH_1075	03_91C_024	239	31.5	Cloud	16.7	8.4	19.2
23	CH_183	02_71L_028	77	25.26	Cloud	14.3	15.6	3.9
24	CH_188	02_71L_034	46	29.97	Cloud	21.7	8.7	17.4
25	CH_244	02_72I_004	121	71.92	Cloud	26.4	15.7	2
26	NP_64	02_72I_011	100	44.68	Cloud	23	14	2
27	CH_235	02_71P_047	71	20.64	Cloud	16.9	5.6	7
28	CH_217	02_71P_029	80	21.21	Cloud	13.8	-6.3	10
29	CH_269	02_78A_003	124	22.35	Cloud	14.5	6.5	4.8
30	CH_270	02_78A_004	84	24.71	Cloud	10.7	8.3	9.5
31	CH_159	02_71L_004	86	38.86	Cloud	10.7	9.3	12.8
32	JK_67	01_43G_001	22154	21.2	Cloud	23.4	19	7.6
33	JK_187	01_52C_003	45	27.36	35.56	24.4	8.9	11.1
34	HP_5	01_52H_004	46	42.26	202.17	178.3	173.9	163
35	CH_432	03_71K_009	170	35.3	Cloud	0	11.8	18.8
36	NP_57	02_72E_001	142	20.9	Cloud	2.8	5.6	23.9
37	UK_8	02_53O_005	1510	21.17	0	2.2	-1.1	-31.8
38	SK_19	03_78A_013	63	28.29	60.32	28.6	14.3	0

Source: Monitoring of Glacier, Lakes and water Bodies in Himalayan region of Indian river basin for October 2017, Centre Water Commission

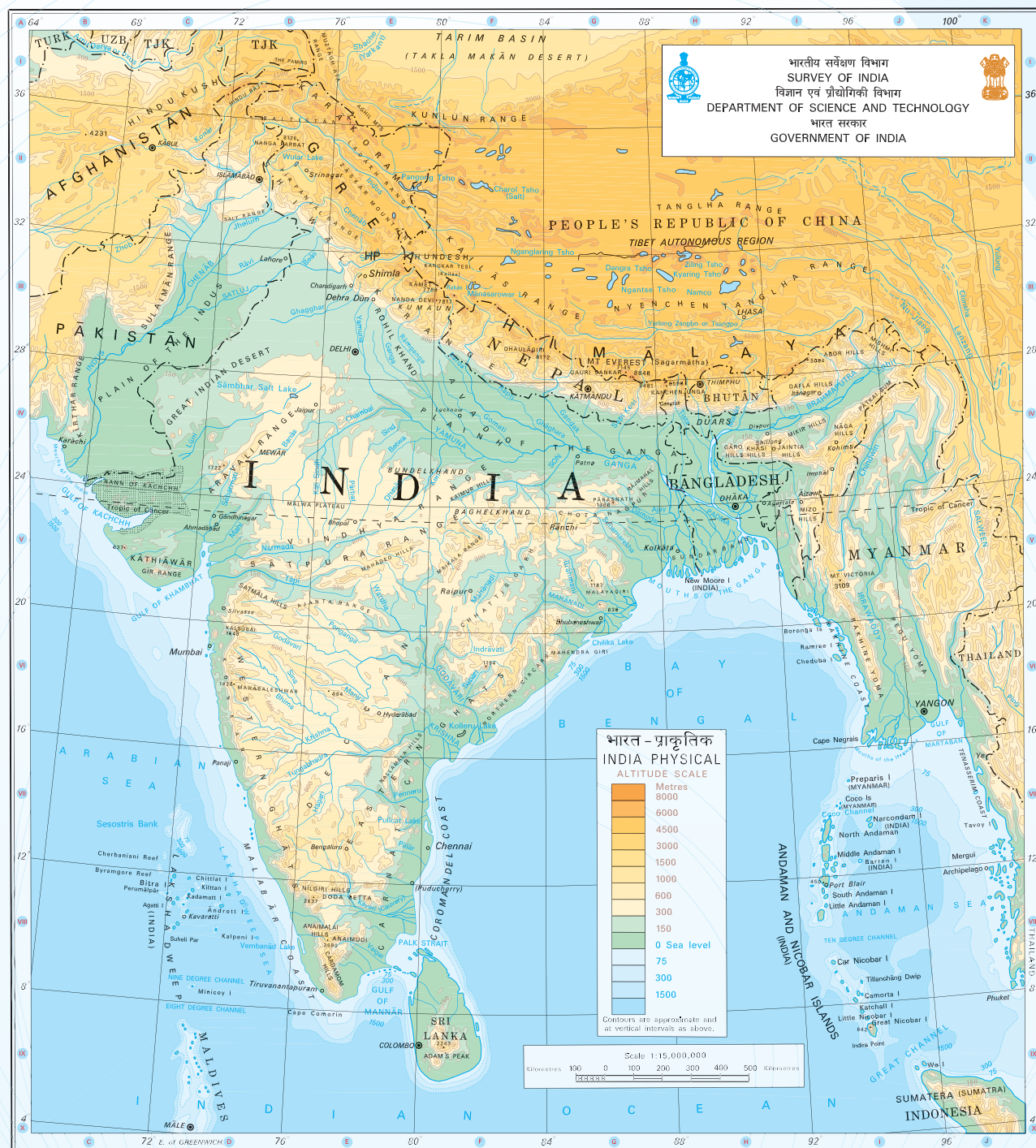
Statement 1.12 : Glacial lakes with significant change in water spread
(b) Lakes with decreasing water spread

S. NO.	UID	Lake_ID	Water spread Area in Ha	% Difference in Water spread area				
			2009 (Inventory)	2017	2016	2015	2014	2013
1	CH_73	01_62B_001	440	-33.62	Cloud	-9.50	-2.50	1.80
2	UK_11	02_53P_003	1078	-40.56	-29.78	1.60	-14.80	-13.60
3	CH_809	03_82G_048	55	-31.04	Cloud	-29.10	-27.30	0.00
4	CH_259	02_77D_004	1273	-41.75	Cloud	-15.60	-14.30	-9.80
5	CH_256	02_77D_001	5831	-65.74	Cloud	-19.80	-18.50	-13.60
6	HP_6	01_52H_005	45	-41.51	Cloud	-6.70	2.20	11.10
7	CH_812	03_82G_051	49	-75.85	Cloud	Cloud	-20.40	0.00
8	CH_816	03_82G_055	62	-22.69	Cloud	-16.10	-17.70	0.00
9	CH_959	03_82K_103	50	-31.14	Cloud	-22.00	-18.00	-16.00
10	CH_1098	03_91C_070	57	-25.37	Cloud	-22.80	Cloud	-24.60
11	CH_1085	03_91C_052	64	-29.00	Cloud	-20.30	Cloud	-23.40
12	CH_1182	03_91H_017	46	-26.55	Cloud	-21.70	Cloud	-19.60
13	CH_1194	03_91H_029	50	-28.01	Cloud	-16.00	Cloud	-8.00
14	CH_33	01_61C_005	139	-54.99	Cloud	76.30	33.80	23.30
15	CH_438	03_71O_002	48	-33.38	Cloud	-18.80	10.40	2.10
16	CH_347	03_62O_002	52	-22.27	Cloud	-15.40	-32.70	-19.20
17	UK_10	02_53P_002	734	-40.59	-36.51	21.30	-42.00	-36.00
18	AP_54	03_82O_061	54	-21.84	-14.81	3.70	0.00	-9.30
19	CH_990	03_82N_019	55	-20.41	Cloud	-7.30	-10.90	5.50
20	AP_100	03_91C_064	89	-20.20	-32.58	-15.70	Cloud	-12.40

Source: Monitoring of Glacier, Lakes and water Bodies in Himalayan region of Indian river basin for October 2017, Centre Water Commission

Statement 1.13 : Geographical Characteristics of India

a) Physical Map of India



Refer to this map at: 1:15,000,000
INDIA-PHYSICAL
Showing sea depths
THIRD EDITION (PRM)

TJK.....TAJKISTAN TURK.....TURKIMENISTAN UZB.....UZBEKISTAN

भारत के मासिक/वार्षिक मानक जलमय विविध नदियों, निशित क्षेत्रों में प्रकाशित।
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Survey of India, Hidabakshi Estate, Post Box No. 37, Dehra Dun-248001 (Uttarakhand)
Department of Science & Technology, Government of India.

2018.

The territorial waters of India extend into the sea to distance of twelve nautical miles from the appropriate base line.

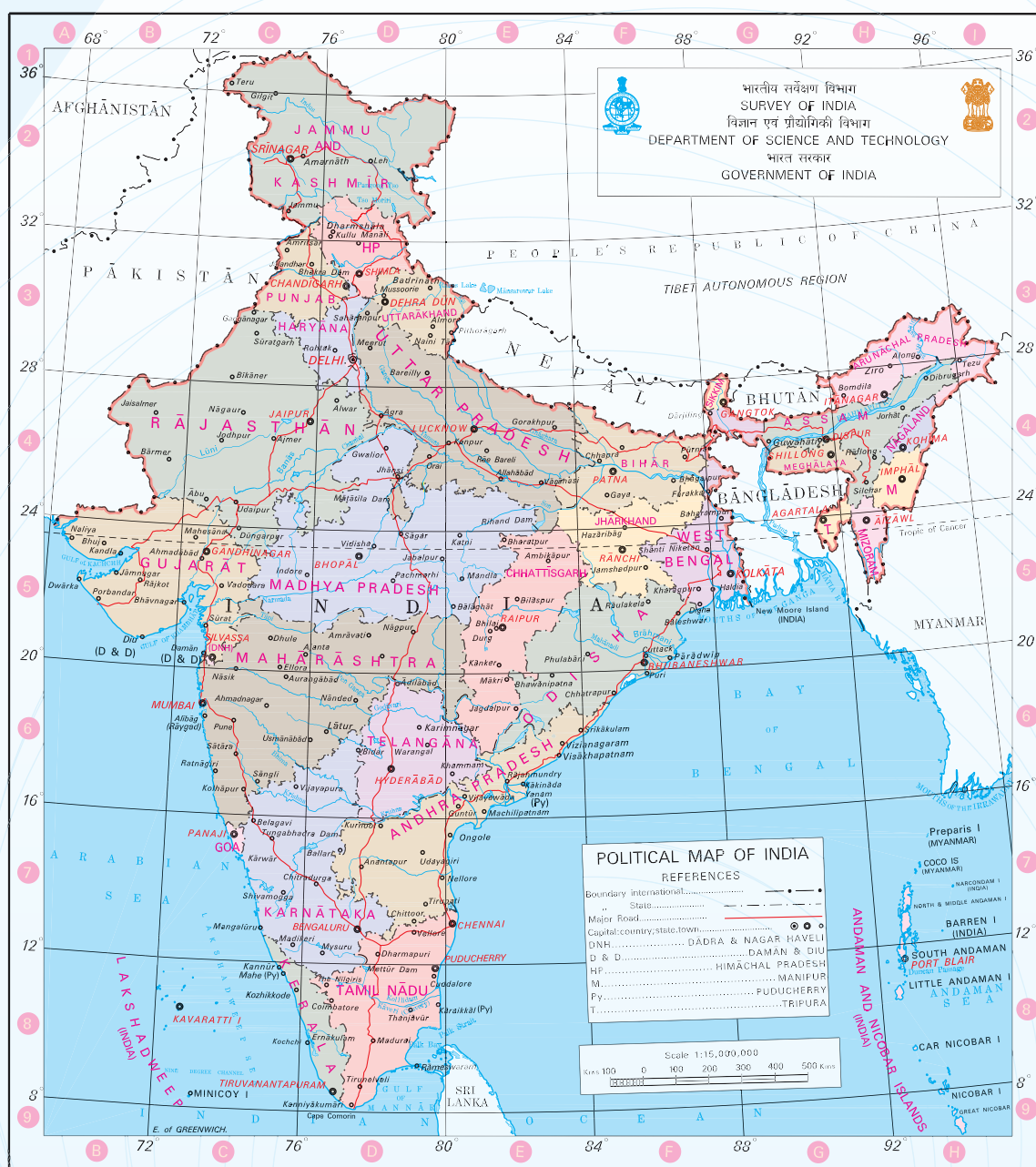
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Statement 1.13 : Geographical Characteristics of India

b) Political Map of India



Refer to this map as:
POLITICAL MAP OF INDIA
1:15,000,000
SECOND EDITION

भारत के महासर्वेक्षक मैजर जनरल गृधिश कुमार, वरिष्ठ मैप मैक के निदेशन में प्रकाशित,
Published under the direction of Major General Girdish Kumar, VSM Surveyor General of India,
Survey of India, Mathabhakta Estate, Post Box No. 37, Dehra Dun - 248001 (Uttarakhand),
Department of Science & Technology, Government of India.

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2018.

The Administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh.
The Administrative headquarters of Telangana and Andhra Pradesh are at Hyderabad.
The Interstate boundaries between Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the North-Eastern Areas (Reorganisation) Act 1971, but yet to be verified.
The Interstate boundaries between Bihar-Jharkhand and Andhra Pradesh-Telangana are yet to be verified by the Concerned Governments.
The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.



LEGEND

IGNEOUS ROCKS
PLUTONIC ROCKS
ACID

	TERTIARY (T): Tintir/Kakret Granitoid Complex (7Tn), Acid Intrusives of Tertiary age (7Ti) of W. Himalaya; Tourmaline Granite (7Tn) of E. Himalaya
	CRETACEOUS-TERTIARY (KT): Ladakh Granitoid Complex (7KTn), Karakoram Granitoid Complex (7KTn) and equivalent acid intrusive rocks (KTn) of Ladakh Karakoram; Lohit Granodiorite Complex (7KTn) of E. Himalaya
	MESOZOIC-TERTIARY (MZ): Acid Intrusive rocks of Mesozoic-Tertiary age (MZn) of Karakoram.
	MESOZOIC (MZ): Acid Intrusives of Mesozoic age (MZn) of Karakoram; Lohit-Migmatite Complex with diorite intrusives (7MZn) of E. Himalaya
	NEOPROTEROZOIC-LR. PALAEOZOIC (P₁P₂): Kyzylmet, Nongpho, Mylliem Granites, South Khasi Batholith and equivalent granites (P ₁ P ₂) of Meghalaya
	PALAEOZOIC (P₂): Kaplas, Dulhousie (P ₂) and equivalent granites of W. Himalaya
	NEOPROTEROZOIC (P₁): Unclassified acid intrusive granites (P ₁) of W. India, E. India & W. Himalaya; Jalore Granite (P ₁), Malani Plutonic Suite (P ₁), Empress Granite (P ₁), and Godwin Granite (P ₁) of W. India; Gangpur Granite (P ₁), Harnarth Granite and Pegmatite (P ₁) of E. India
	MESOPROTEROZOIC (P₂): Sarda-Ambaji Granite and Gneiss (P ₂) of Rajasthan; Arkanasi Granophyre (P ₂), Soda Granite (P ₂), Kailash Granite (P ₂), Manbhurn Granite (P ₂) and Lingate Granite Gneiss (P ₂) of E. India and E. Himalaya
	PALAEOPROTEROZOIC-MESOPROTEROZOIC (P₁P₂): Baran Granite (P ₁ P ₂) of W. India
	PALAEOPROTEROZOIC (P₁): Dangarghar Granite (P ₁), Malankhand Granite (P ₁), Granite of Son-Narmada Valley (P ₁) of C. India; Cloister Granite (P ₁) of S. India; Mayurbhanj and Sakti Granites of E. India (P ₁)
	PROTEROZOIC (Undiff.) (P): Granophyre (P) of E. India; Younger Granite (P) of S. India; Gneissic Granite of Arunachal Pradesh (P) and Granites (P) of W. Himalaya
	ARCHAEO-PALAEOPROTEROZOIC (AP₁): Unclassified Granites of S. India (AP ₁), Bundelkhand Granite of U.P. (AP ₁)
	ARCHAEO (A): Singhbhum Granite Complex (A); Bonai Granite of Orissa (A) and Chakradharpur Granite (A) of E. India; Acidic bodies (A) of Rajasthan, S. India & E. India; Berch Granite and Gneiss (A), Uralia and Ganga Granite (A) of Rajasthan; Granite within megacrysts (A) of S. India
	UNKNOWNAGE: Granite of Unknown age (Y)

INTERMEDIATE / BASIC

	CRETACEOUS-TERTIARY (KT): Alkali Complex of Sang Sanchamp (KTn) of N.E. India
	PROTEROZOIC (P₁): Alkali Complex (P ₁) of S. India and Rajasthan; Kishenghar Granite (P ₁) of Rajasthan; Alkali Syenite of Orissa (P ₁) and Kharak (P ₁)
	PROTEROZOIC (P₂): Gabro and anorthosite of S. India & E. India (P ₂)

ULTRABASIC / ULTRAMAFIC

	CRETACEOUS-TERTIARY (KT): Tiding Serpentine (KTn) of N.E. India
	PALAEOPROTEROZOIC (P₁): Rakhabar Ultrabasic Suite (P ₁) of W. India; Simlipal Ultramafics (P ₁), Jajhata Ultramafics (P ₁) of E. India
	ARCHAEO-PROTEROZOIC (AP₁): Sakti Ultramafics (AP ₁) of E. India and Ultrabasic (AP ₁) of S. India

HYBABYSSAL AND VOLCANIC ROCKS

	CAINOZOIC (Undiff.) (C₂): Unclassified Volcanics of Barrier Island (C ₂)
	PALAEOCENE-EOCENE (P₂P₃): Ahar Volcanics (Young phase) (P ₂ P ₃)
	CRETACEOUS-PALAEOGENE (KP₂): Decan Traps (KP ₂) of West, Central & S. India; Tuting Volcanics (KP ₂) of N.E. Himalaya
	CRETACEOUS-TERTIARY (KT): Kharidung Volcanics (KTn), Dars Volcanics and equivalents (KTn) and Baluchistan Volcanics (KTn) of W. Himalaya
	JURASSIC-CRETACEOUS (JK): Rajmahal Trap (JKn) of E. India
	MESOZOIC (MZ): Basic Volcanics of W. Himalaya (JMz)
	PERMIAN (P): The Volcanics (P) of W. Himalaya; Ahar Volcanics (Old Phase) (P) of N.E. Himalaya
	CARBONIFEROUS-PERMIAN (CP): Undiff. Panaji Volcanics with Agglomerate Slate & Nishad Bath Beds Fm (CP) of W. Himalaya
	NEOPROTEROZOIC (P₁): Malani Volcanic Suite (Rhyolite) (P ₁) of W. India
	MESOPROTEROZOIC (P₂): Cuddapah Trap (P ₂) of S. India; Sandanagar Fm with Mandi Darla Volcanics (P ₂) and Sami Volcanics (P ₂) of W. Himalaya
	PALAEOPROTEROZOIC/ARCHAEO PROTEROZOIC: Darna Volcanics (P ₁ P ₂), Simlipal lava (P ₁ P ₂), Dhanraj lava (P ₁ P ₂) and other basic intrusives, Durgapuri lava (P ₁ P ₂), Ongarbar Trap (P ₁ P ₂) and Bonai lava (BAP ₁) of E. India; Manabash of Chitradurga Gp (BAP ₁) of S. India
	PROTEROZOIC (P₁): Khasi Greenstone (P ₁) of N.E. India
	PROTEROZOIC (Undiff.): Biju Rhyolite (P ₁ P ₂) and Pitrapani Andesite (P ₁ P ₂) of Nandgaon Gp of C. India
	ARCHAEO (A): Basic sills and dykes (A)

OPHILITES

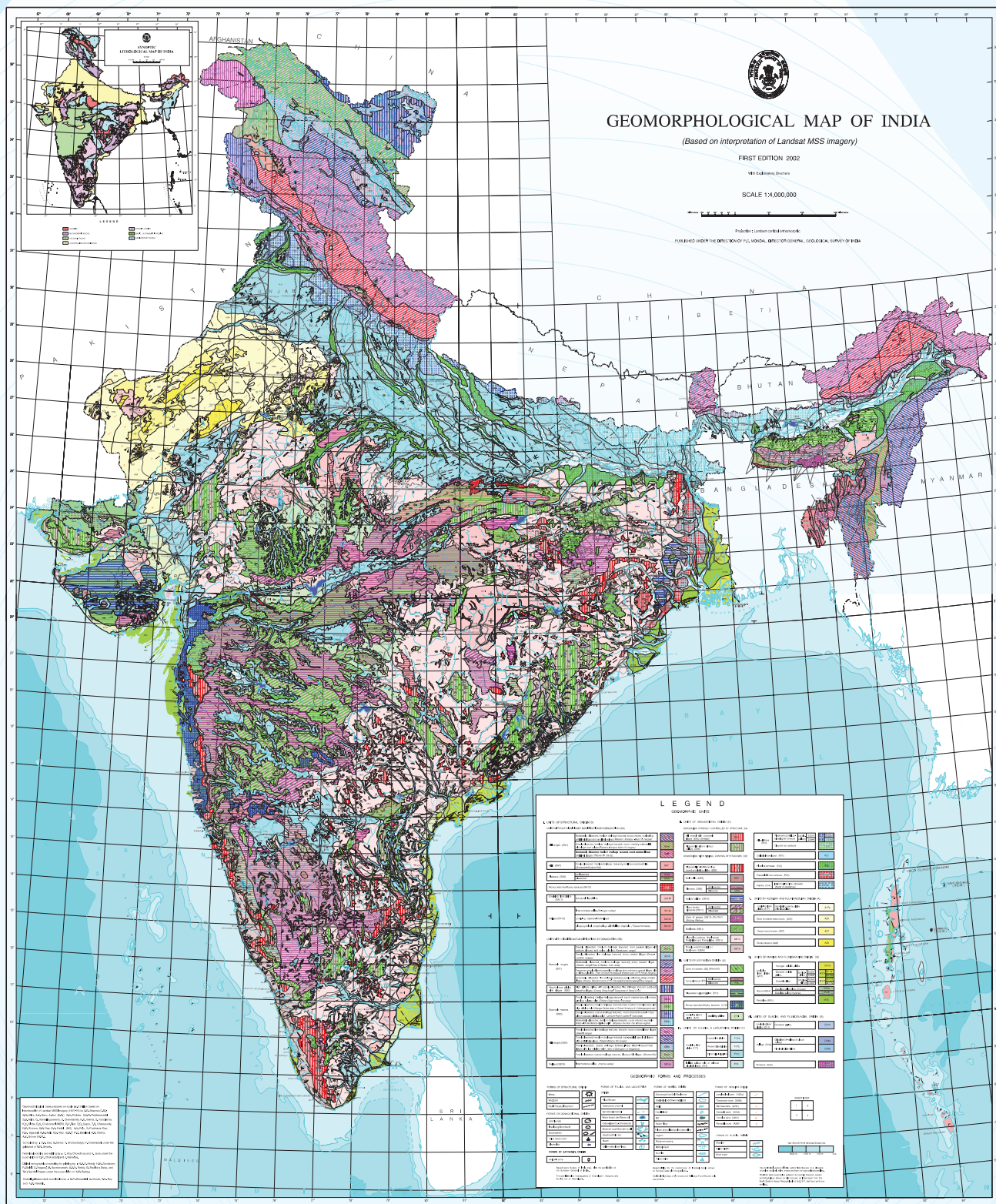
	CRETACEOUS-PALAEOGENE (KP₂): Ophiolite of Nagaland (KP ₂) of N.E. India
	CRETACEOUS-TERTIARY (KT): Ophiolite within Sangtham Gp (KTn) of W. Himalaya
	MESOZOIC - PALAEOGENE (MZ-Pg): Ophiolite of Andaman & Nicobar Islands (MZ-Pg)
	PALAEOPROTEROZOIC-MESOPROTEROZOIC (P₁P₂): Pradab Ophiolite Complex (P ₁ P ₂) of Rajasthan

Fault/Shear Zone	Abbreviations
Thrust	Fm-Formation Gp-Group Spg-Supergroup
Confirmed / Inferred Contact	Water depths below sea level
Assumed formation boundary	Meters 0 200 1000 3000
Blank uncoloured patches represent unlocated areas	The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate baseline.
Glacier	Geographical details are based upon Survey of India map with the permission of the Surveyor General of India.
Coral reefs	The boundary of Meghalaya shown on this map is as interpreted from the North Eastern area (Reorganisation) Act, 1971 but is yet to be verified.
	The administrative headquarters of Haryana and Punjab are at Chandigarh.
	National Highways, major roads and Railways Trunk Routes only are shown.

SEDIMENTARY AND METAMORPHIC ROCKS

	QUATERNARY (Q): Undiff. Quaternary (Q) of W. Himalaya; Quaternary (Q) of N.E. India
	CAINOZOIC (C₂): Laterite and basaltic (C ₂); Calcareous clay and sandstone (C ₂) of S. India; Gravel and sandstone (C ₂) of E. India
	PLIO-PLISTOCENE (N₂Q₁): Undiff. Sivalik Gp (N ₂ Q ₁) of E. Himalaya; Diding Fm (N ₂ Q ₁), Dupitla Fm (N ₂ Q ₁) and Namung Fm (N ₂ Q ₁) of N.E. India; Upper Sivalik Gp (N ₂ Q ₁) of Himalaya and Karawa Gp (N ₂ Q ₁) of W. Himalaya
	PLIOCENE (N₂): Kankar Fm (N ₂), Dwaraka beds (N ₂) of W. India; Rajmala Fm (N ₂) of E. India
	MIO-PLIOCENE (N₂Q₂): Tapan Gp (N ₂ Q ₂) and Chengpura Fm (N ₂ Q ₂) of N.E. India; Quilon (N ₂ Q ₂), Warkhali (N ₂ Q ₂) and Rajmahal (N ₂ Q ₂) Fms of S. India; Kati Fm (N ₂ Q ₂) of C. India; Achelpur Gp (N ₂ Q ₂) of Andaman & Nicobar Islands; Middle Sivalik Gp (N ₂ Q ₂) of W. Himalaya and N.E. Himalaya
	MIOCENE (N₁): Surma Gp (N ₁), Bokali Fm (N ₁), Bhutan Fm (N ₁), Bagmati Fm (N ₁) of N.E. India; Cuddalore Fm (N ₁) of Tamilnadu; Khari (N ₁) and Gaj (N ₁) Fms of Gujarat; Baripada Fm (N ₁) of Orissa; Lower Sivalik Gp (N ₁) of W. Himalaya
	Eocene-Miocene (P₂N₁): Upper Murree Gp (P ₂ N ₁), Lower Murree Gp (P ₂ N ₁), Undiff. Murree Gp, Dharmala Gp, Daghai and Kasali Fms (P ₂ N ₁) of W. Himalaya
	OLIGOCENE (P₂): Bernoti Fm (P ₂) of Gujarat; Andaman Flysch (P ₂) of Andaman & Nicobar Islands
	Eocene-Oligocene (P₂N₁): Barail Gp (P ₂ N ₁) and Simang Fm (P ₂ N ₁) of N.E. India
	Eocene (P₂): Dzung Gp (P ₂), Phokhar Fm (P ₂) of N.E. India; Kapuri Fm (P ₂), Bandha Fm (P ₂), Jogra Fm (P ₂) and Undiff. Eocene Fm (P ₂) of Rajasthan, Undiff. Eocene Fm (P ₂) of Gujarat; Yankong Fm (P ₂) of N.E. India; Karji Gp (P ₂) of W. Himalaya
	PALAEOCENE-Eocene (P₂Q₁): Mithakari Gp (P ₂ Q ₁) of Andaman & Nicobar Islands; Sabharwal Fm (P ₂ Q ₁) and Nannulmit Fm (P ₂ Q ₁) of W. Himalaya; Jaitia Gp (P ₂ Q ₁) of N.E. India; Manuvil and Karur Fms (P ₂ Q ₁) of S. India
	PALAEOCENE (P₂): Ninjar Fm (P ₂) of S. India; Palana Fm (P ₂), Akli Fm (P ₂), Math Fm (P ₂), Sam Fm (P ₂), Khasi Fm (P ₂) and Mandai Fm (P ₂) of Rajasthan and Math Fm (P ₂) of Gujarat
	TERTIARY (T): Undiff. Tertiary (T) Fms of W. Himalaya
	CRETACEOUS-PALAEOGENE (KP₂): Oceanic Pelagic sediments (KP ₂) of N.E. Himalaya; Undiff. Cretaceous to Palaeogene Fms of W. Himalaya
	CRETACEOUS-Eocene (KP₂): Undiff. Mankot shell limestone and Sabharwal Fm (KP ₂) of W. Himalaya
	CRETACEOUS-TERTIARY (KT): India Gp (KTn) and Sargolima Gp (KTn) of W. Himalaya
	CRETACEOUS (K): Trinapatti (K), Arivahar (K) and Uttara-Pati (K) Fms of S. India; Jabalpur Fm (K), Lameti (K) & Bagh (K) Gps, Bhuj (K), Farsang (K) and Ahir (K) Fms, Wagal sandstone (K) of W. India; Khasi Gp (K) of Meghalaya; Cretaceous Fms of Ladakh-Karakoram (K), Undiff. Guntal and Chikini Fms (K) of W. Himalaya
	JURASSIC-CRETACEOUS (JK): Pauriwar (JK) and Himmatnagar (JK) Fms of W. India; Anghar Fm (JK) of E. India; Jurassic Cretaceous Fms of Karakoram (JK)
	JURASSIC (J): Badar (J), Baisakhi (J), Jaisimr (J), Lathi (J), and Maykar Fms (J) of Rajasthan, Bhuraj (J), Jaura (J), Middle Jurassic Fm (J) of Gujarat, Chikini (J), Kota Fm (J) of E. India; Durgapur bed (J) of E. India; Spin shale (J), Barua Fm (J) and Jauran Fm (J) of W. Himalaya
	TRIASSIC-JURASSIC (TJ): Mahadevi (TJ) and Dabrujar (TJ) Fms of E. India; Lilang Gp (TJ), Undiff. Laphat, Kion, Kufi, Kalpani and Chetani Fms (TJ) of W. Himalaya
	TRIASSIC-CRETACEOUS (TK): Undiff. Maleri, Kota, Chikila, Jabalpur, Dabrujar, Pursara, Bagra Fms (TK) of Gondsava Spp (Upper) of East, Central & S. India
	PERMIAN-JURASSIC (PJ): Undiff. Kuling Fm and Lilang Gp (PJ) of W. Himalaya
	TRIASSIC (T): Maleri Fm (T), Panchet Pachmarhi (T) and Bagra (T) Fms of Gondsava Spp of East, Central & S. India; Undiff. Bisot and Kalbel Fms (T) of W. Himalaya; Tui Lian Fm (T) of E. India
	MESOZOIC (MZ): Undiff. Mesozoic Fms (MZ) of W. Himalaya
	CARBONIFEROUS - PERMIAN and Eocene Undiff (CP-P₂): Undiff. Agglomerate Slate, Panaji Volcanics, Punch-Mandi and Rajpara Fms (CP-P ₂) of W. Himalaya
	PERMIAN-TRIASSIC (PT): Kamthi Fm (PT) of Gondsava Spp of S. & C. India; Vili Gp (PT), Murga Fm (PT) and Undiff. Permian-Triassic (PT) Fms of W. Himalaya
	CARBONIFEROUS - TRIASSIC (CT): Undiff. Tabbar, Karharbar, Barak, Barren Messure, Rangaj, Pali, Motar, Bijori, Panchmarhi, Denwa and Pancher Fms (CT) of Gondsava Spp of S. & C. India; Carboniferous-Triassic Fms (CT) of W. Himalaya
	PERMIAN (P): Bhakar Fm (P), Rangaj Fm (P), Barren Messure Fm (P), Karharbar Fm (P) of Gondsava Spp of E. India; Bijori (P) and Motar (P) Fms of C. India; Bhauran Fm (P) of W. India; Bhauri Fm (P), Gura Fm (P), Bishon Fm (P) of N. E. Himalaya; Damda Fm (P) of E. Himalaya; Kuling (P), Gangul-Salooni (P), Undiff. Zewan and Mural Fms (P) of W. Himalaya
	PALAEOZOIC - TERTIARY Undiff. (Pz-T): Shyok Gp (Pz-T) of W. Himalaya
	CARBONIFEROUS-PERMIAN (CP): Bop boulder bed (CP) of Rajasthan; Talcir Fm (CP) of Gondsava Spp, Lower Gondsava (C-P) of Meghalaya; Lach Fm (CP) of E. India; Carboniferous-Permian Fms (CP), Agglomerate Slate Fm (CP), Boulder Slate Fm (CP) of W. Himalaya
	CARBONIFEROUS (C): Undiff. Carboniferous Fms (C), Karam Gp (C), Undiff. Karam Gp, Lach, Panch and Gamschidan Fms (C), Vapchar Fm (C) of W. Himalaya
	DEVONIAN-CARBONIFEROUS (DC): Pangmura Fm (DC), Saser Branga Fm (DC) of W. Himalaya
	ORDOVICIAN-CARBONIFEROUS (OC): Undiff. Morgan, Math, Aizomung, Singthoib, and Fensetella Fms (OC)
	ORDOVICIAN-DEVONIAN (OD): Undiff. Ralam, Gorybung, Shila, Varagad, and Muth Fms (OD), Thanga, Tache, and Muth Fms (OD), Tagmura Fm (OD) of W. Himalaya
	ORDOVICIAN (O): Everest limestone (O) of E. India
	CAMBRIAN-ORDOVICIAN (CO): Rukhshung Fm (CO) of W. Himalaya
	CAMBRIAN (C): Tui Fm (C), Undiff. Karbel and Lathi Fms (C), Kamthi Fm (C) of W. Himalaya
	PALAEOZOIC (Pz): Miti Fm (Pz), Undiff. Miti and Bichon Fms (Pz) of Arunachal Pradesh, Pangong Metamorphic Complex (Pz), Undiff. Palaeozoic Fms (Pz) of W. Himalaya
	NEOPROTEROZOIC (Upper) (P₂): Bhandar Gp (P ₂) of Vindhyan Spp of C. & N. India; Bhamra Fm (P ₂), Randa Fm (P ₂) and Jodhpur Gp (P ₂), Bilam Gp (P ₂), and Nagpur Gp (P ₂) of Marwar Spp of W. India; Undiff. Kori, Infrakol & Blani Fms (P ₂), Bichon Fm (P ₂) of N. E. Himalaya; Damda Fm (P ₂) of E. Himalaya; Kuling (P ₂), Gangul-Salooni (P ₂), Undiff. Zewan and Mural Fms (P ₂) of W. Himalaya
	NEOPROTEROZOIC (Lower) (P₁): Rewa Gp (P ₁) of Vindhyan Spp of C. & E. India; Simla Gp (P ₁), Jansar Gp (P ₁), Motar-Chakrata Fm (P ₁), Amer Fm (P ₁), Bani-Satnagar Fm (P ₁) and Bijai Fm (P ₁) of W. Himalaya
	NEOPROTEROZOIC (Undiff.) (P₁): Karnool Gp (P ₁), Penganga Gp (P ₁), Sullava Gp (P ₁), Bhima Gp (P ₁), Badami Gp (P ₁) and Rangaswami Fm (P ₁) of C. & S. India; Manji Fm (P ₁), Baral Fm (P ₁) Undiff. Chamba & Bhauran Fms (P ₁), Undiff. Baral, Manji and Rangaswami Fms (P ₁), Undiff. Gaur, Lathi, Ramban and Sincha Fms (P ₁) and Marol Fm (P ₁) of W. Himalaya
	MESOPROTEROZOIC - NEOPROTEROZOIC (Undiff.) (P₁P₂): Chaitanya Gp (P ₁ P ₂), Indravat Gp (P ₁ P ₂) of C. & E. India; Kaladi Gp (P ₁ P ₂) of S. India; Kulu Fm (P ₁ P ₂) and Tinnawal Fm (P ₁ P ₂) of W. Himalaya
	MESOPROTEROZOIC (P₂): Kaimur Gp (P ₂) and Senni Gp (P ₂) of Vindhyan Spp of C. & N. India; Cuddapah Spp: Paguthi Gp (P ₂), Chitravati Gp (P ₂) comprising Pulivendla (P ₂), Tadpatri (P ₂) and Gandikota (P ₂) Fms, Nallamalai Gp comprising Baidenokunda Fm (P ₂), Cumbam Fm (P ₂) and Srisaikal Fm (P ₂) of S. India; Pakhal Gp (P ₂) of S. India; Mungur Gp (P ₂) of E. India; Sirhan Gp (P ₂), Shal Gp (P ₂), Ramgar Gp (P ₂), Lari Gp (P ₂), Dhargah Fm (P ₂), Dechan Gp (P ₂), Gadhwal Gp (P ₂) and Bhimra Fm (P ₂) of W. Himalaya
	PALAEOPROTEROZOIC-MESOPROTEROZOIC (P₁P₂): Sindri (P ₁ P ₂), Kumbharharg (P ₁ P ₂), Gopunda (P ₁ P ₂), Alwar (P ₁ P ₂), Ajabgarh (P ₁ P ₂), Panagah Gp (P ₁ P ₂) and Simoli (P ₁ P ₂) Gps of Delhi Spp and Undiff. Delhi Spp (P ₁ P ₂) of W. India; Kharagpur Gp (P ₁ P ₂), Abhinagar Gp (P ₁ P ₂), Gwalior Gp (P ₁ P ₂), Bijaur Gp (P ₁ P ₂) and Chitpur Gp (P ₁ P ₂) of C. India; Metamorphic of Chhotanagar belt (P ₁ P ₂) and Kollam Gp (P ₁ P ₂) of E. India; Shillong Gp (P ₁ P ₂) of N.E. India
	PALAEOPROTEROZOIC (P₁): Udaipur (P ₁), Kankori (P ₁), Barikela (P ₁), Debari (P ₁), Doda (P ₁), Bani (P ₁), Luvavada (P ₁), Channovar (P ₁), and Nishanwar (P ₁) Gps of Aravalli Spp of W. India; Jahangir Gp (P ₁), Par-Banas Gp (P ₁), Rajpara Dabho Gp (P ₁), Sawa Gp (P ₁), Ranthambhor Gp (P ₁) and Rialo Gp (P ₁) of W. India; Saur Gp (P ₁), Sakol Gp (P ₁), Mahasol Gp (P ₁), Unclassified metamorphics of Bhilaur-Rajauri-Ambikapur region (P ₁) & Sonakhan Gp (P ₁) of C. India; Simlipal Gp (P ₁), Gangpur Gp (P ₁), Dhanraj Gp (P ₁) and Singbhum Gp (P ₁) of E. India
	PROTEROZOIC (Undiff.) (P₁): Lumla Fm (P ₁), Dirang Fm (P ₁), Khetabari Fm (P ₁), Tiding Fm (P ₁), Gombahar Fm (P ₁) of Daling Gp and equivalents, Potin Fm (P ₁), Tenga Fm (P ₁), Reyang Fm (P ₁) and Undiff. Potin and Khetabari Fms (P ₁), Buxa Fm (P ₁) and equivalents, Nami Fm (P ₁), Doda Fm (P ₁) and Everest Pelite (P ₁) of N.E. & E. Himalaya; Barfak Chudnamri, Bunyar and Kalamand Fms (P ₁) (P ₁), Undiff. Kilar, Lapana and Dal Fms (P ₁) and Undiff. Proterozoic Fms (P ₁) of W. Himalaya
	PROTEROZOIC (Undiff.) (P₁): Pan Fm (P ₁) and equivalents, Kanchenjunga gneiss (P ₁), Darjeeling gneiss (P ₁) and equivalents, Chhangbun Fm (P ₁), Sola Gp (P ₁), Naga metamorphics (P ₁) of E. & N.E. Himalaya; Jirga Gp (P ₁), Rangbar Fm (P ₁), Alona Crystalline (P ₁), Bajaur Crystalline (P ₁), Salsula Fm (P ₁), Valerita Fm (P ₁), Central Crystalline (P ₁), Undiff. Naga Parbat Crystalline (P ₁), Spara Crystalline (P ₁), Bhilangana Fm (P ₁), Tarnona Crystalline Complex (P ₁), Agamuni Fm (P ₁) and Bijai Fm (P ₁) of W. Himalaya
	ARCHAEO (?) PROTEROZOIC (Undiff.) (A/P₁): Chhotanagar Gneiss Complex (A/P ₁) of E. India and Gneissic Complex of Meghalaya (A/P ₁)
	ARCHAEO-PROTEROZOIC (AP₁): Peninsular Gneiss (AP ₁) (Younger phase) of S. India; Chitradurga Gp (AP ₁) of Dharwar Spp and Undiff. Dharwar Spp (AP ₁) of S. India; Baladilla Gp (AP ₁) of C. India; Bonai Gp (AP ₁) and Unclassified metamorphics (AP ₁) of E. India
	ARCHAEO (A): Bahadur Gp (A), Eastern Greenstone (A) & Vengad Gp (A) of Dharwar Spp, Wynad Schist Complex (A), Sargur Gp (A) and Saryanaghat Schist Complex (A) of S. India; Garamchikil Gp (A) and Older Metamorphics (A) of E. India; Beggud Gp (A), Angoon Gp (A) and Gopad-Banas Metamorphic Complex (A) of C. India
	ARCHAEO (A): Peninsular Gneiss (Older Phase) (A) and Migmatite Complex (A) of S. India; Sandmata Complex (A), Mangalwar Complex (A) and Hindoli Gp (A) of Bhilwara Spp of W. India; Unclassified gneiss (A) of C. India
	ARCHAEO (A): Charnockite Gp (A) of S. & E. India; Charnockite Gp of Orissa and A.P. show widespread Proterozoic reactivation; Khondalite Gp (A) of S. India and Orissa

Statement 1.15 Geomorphological Characteristics of India



LEGEND

GEOMORPHIC UNITS

I. UNITS OF STRUCTURAL ORIGIN (S)

UNITS WITHOUT SIGNIFICANT MODIFICATION BY DENUDATION (SA)

Hill ranges (SA4)	Moderately dissected, medium drainage textured, sharp crested, coalescing anticlinal ridges and synclinal valleys (Western Manipur-Mizo hill ranges) Deeply dissected, medium drainage textured, round crested, sub-parallel fold ridges and valleys (Eastern Manipur-Mizo hill ranges) Moderately dissected, medium drainage textured, round crested, linear anticlinal ridges (Tripura hill tracts)	SA4a SA4b SA4c
Hills (SA7)	Poorly dissected, medium drainage textured, non-linear subdued hills (Andaman-Nicobar hills)	SA7
Plateaus (SA9)	Undissected Dissected	SA9a SA9b
Rocky benches/Rocky terraces (SA12)		SA12
Lowlying flats/plains (SA17)	Structural flats/plains	SA17
Valleys (SA18)	Intermontane valley (Shnagar valley) Lowlying depressions/valleys Linear, synclinal, broad valleys with infilled channels (Tripura hill tracts)	SA18a SA18b SA18c

UNITS WITH SIGNIFICANT MODIFICATION BY DENUDATION (SB)

Mountain ranges (SB1)	Deeply dissected, medium drainage textured, horn peaked ridges with procluse cirques and valley glaciers (Karakoram range) Deeply dissected, fine drainage textured, sharp crested ridges (Deosai-Ladakh ranges) Moderately dissected, medium drainage textured, sharp crested ridges (Zaskar range-Dras & Zaskar river area) Transverse, deeply dissected, medium drainage textured sharp crested ridges with or without glaciers (Part of Great Himalaya & Eastern part of Pir Panjal ranges) Moderately dissected, fine drainage textured, poorly oriented, sharp crested ridges (mainly Western part of Pir Panjal-Dhaoladhar-Nagtibbar ranges)	SB1a SB1b SB1c SB1d SB1e
Mountainous plains with ridges (SB2)	High altitude plains with poorly dissected, fine drainage textured, subdued, detached ridges (Chang Tang-Lingzi Tang area of Aksai Chin)	SB2
Mountain masses (SB3)	Poorly dissected, medium drainage textured, round crested mountain mass with low relative relief (Ghizar-Ghizi-Indus river area) Deeply dissected, medium drainage textured sharp crested mountain mass with high relative relief (Nanga Parbat area of Great Himalaya & Kishanganga area) Deeply dissected, coarse drainage textured, round crested mountain mass with moderate relative relief (Jhelum-Punch-Jambhir river area) Moderately dissected, medium drainage textured, round crested mountain mass with moderate relative relief (Rupshu-Tso Kar-Tso Moran region)	SB3a SB3b SB3c SB3d
Hill ranges (SB4)	Poorly dissected, fine drainage textured, sharp to round crested linear ridges (Siwalik range) Poorly dissected, medium drainage textured, sub-parallel, synclinal ridges with anticlinal valleys (Naga-Manipur hill ranges) Poorly dissected, coarse drainage textured, linear, discontinuous thrust ridges with low relative relief (Bist of Shuppen of Nagaland) Poorly dissected, coarse drainage textured, sinuous fold ridges (Surma hills)	SB4a SB4b SB4c SB4d
Valleys (SB18)	Intermontane valley (Imphal valley)	SB18a

II. UNITS OF DENUDATIONAL ORIGIN (D)

DENUDATION STRONGLY CONTROLLED BY STRUCTURE (DA)

Hill masses with concentric ridges (DA5) (Simlipal)	DA5
Ridges/hills with or without valleys (DA6)	DA6

DENUDATION WITH MINIMAL CONTROL OF STRUCTURE (DB)

Ridges/hills with intervening broad undulating plains (DB6)	DB6
Relict hills (DB7)	DB7
Plateaus (DB9)	Undissected Dissected
Upland plains (DB10)	DB10
Slope facets/elements (DB11)	Undissected Dissected
Zone of gorges (DB13) (Southern Shillong Plateau)	DB13
Badlands (DB14)	DB14
Planation surfaces (Pediments/Pediplains and Panoplands) (DB15)	DB15
Deeply weathered plains / Buttrists (DB16)	DB16

III. UNITS OF EXTRUSIVE ORIGIN (E)

Zone of cuestas (E8) (Kachchhi)	E8
Lava plateaus (E9)	Undissected Dissected
Dissected upland plains (E10)	E10
Rocky benches/Rocky terraces (E12)	E12
Lowlying flats / plains (E17)	Lowlying plains

IV. UNITS OF FLUVIAL & LACUSTRINE ORIGIN (F)

Lowlying flats/ plains (F17)	Lacustrine plains Present floodplains Older alluvial plains
Infilled valleys with or without alluvial ridges (F19)	F19

Alluvial fans (F20)	Piedmont out-sill/coalescing fan terraces Discrete fan surfaces	(Undissected) Upper Lower	F20a F20b F20c F20d
Colluvial footslopes (F21)			F21
Riverine terraces (F22)			F22
Paradeitic fan surfaces (F23)			F23
Ranns (F24)	Inland saline flats (dry/wet) (North of Jaisalmer)		F24

V. UNITS OF AEOLIAN AND FLUVIOAEOLIAN ORIGIN (A)

Lowlying flats/ plains (A17)	Undulating sandy plains (Fluvioaeolian)	A17g
Zone of desert sand dunes (A26)		A26
Desert sand sheets (A27)		A27
Rocky deserts (A28)		A28

VI. UNITS OF MARINE AND FLUVIOMARINE ORIGIN (M)

Lowlying flats/ plains (M17)	Younger detritic plains Matured detritic plains Coastal plains	(Undissected) Upper Lower	M17a M17b M17c M17d M17e M17f M17g M17h M17i M17j M17k M17l M17m M17n M17o M17p M17q M17r M17s M17t M17u M17v M17w M17x M17y M17z
Ranns (M24)	Desolate saline flats (Dry/wet) Desolate saline marshes		M24a M24b M24c M24d M24e M24f M24g M24h M24i M24j M24k M24l M24m M24n M24o M24p M24q M24r M24s M24t M24u M24v M24w M24x M24y M24z
Proclitas (M25)			M25

VII. UNITS OF GLACIAL AND FLUVIOGLACIAL ORIGIN (G)

Lowlying flats/ plains (G17)	Outwash plains	G17h
Valleys (G16)	Glaciated U-valleys & cirque valleys Fluvioglacial valleys	G16d G16e G16f G16g G16h G16i G16j G16k G16l G16m G16n G16o G16p G16q G16r G16s G16t G16u G16v G16w G16x G16y G16z
Terraces (G22)		G22

GEOMORPHIC FORMS AND PROCESSES

FORMS OF STRUCTURAL ORIGIN

Mesa	
Hogback	
Fault/Thrust/Lineament	

FORMS OF DENUDATIONAL ORIGIN

Lateralite cap	
Inselsberg/Bornhardt	
Escarpment	
Talus scree cone	
Dissection	

FORMS OF EXTRUSIVE ORIGIN

Volcanic cone	
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FORMS OF FLUVIAL AND LACUSTRINE ORIGIN

River/Stream	
Abandoned channel	
Ephemeral channel	
Water body/Lake/Reservoir	
Oxbow lake/Cut-off meander	
Meander scar/Meander scroll	
Sand bar/Point bar	
Marsh	
Saline water lake/Panys	

FORMS OF MARINE ORIGIN

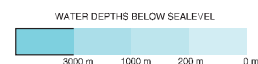
Submerged bar/Spi/Barrier bar	
Barrier island/Off-shore island	
Airli	
Coral island	
Bar	
Beach ridge	
Paleo strand line/Ancient shore line	
Lagoon	
Mangrove swamp	
Upland marsh	
Mud flat	
Palaeo delta	

FORMS OF AEOLIAN ORIGIN

Longitudinal dune (A26a)	
Transverse dune (A26b)	
Barchan dune (A26c)	
Obstacle dune (A26d)	
Complex dune (A26e)	
Parabolic dune (A26f)	

FORMS OF GLACIAL ORIGIN

Moraine	
Valley Glacier	
Snow cover	



Based upon Survey of India map, with the permission of the Surveyor General of India.

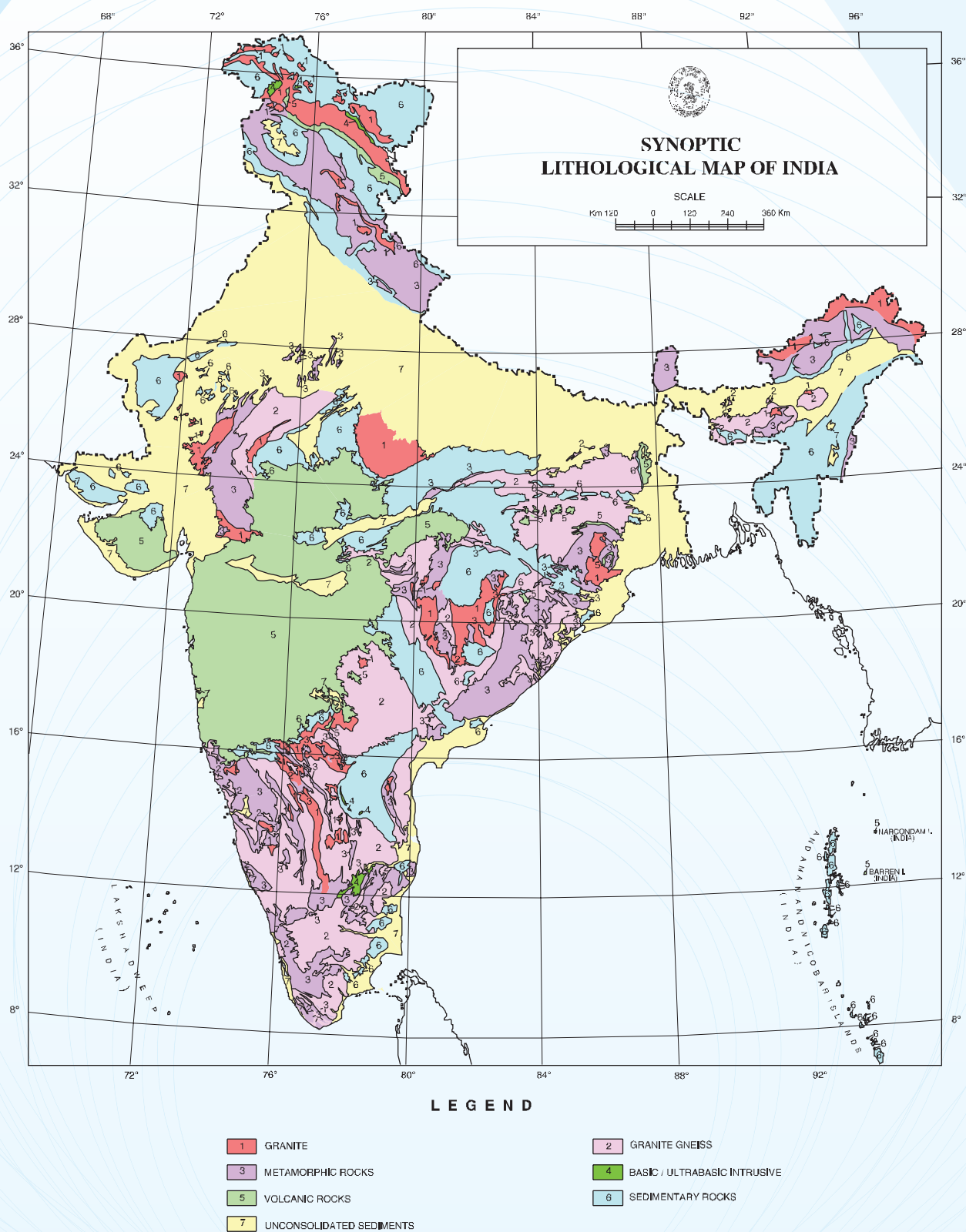
The administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh.

Responsibility for the correctness of internal details shown on the map rests with the publisher.

National Highways, major roads and Railways Trunk Routes only are shown.

The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line. The inter state boundaries between Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the North Eastern Areas (Reorganisation) Act, 1971, but have yet to be verified.

Statement 1.16 Synoptic lithological Characteristics of India



Statement 1.17: Marine Fisheries Resources of India

State/U.T.	Coastal length (Kms.)	Landing Centres	Fishing Villages	Fishermen Families	Traditional Fisherman Families	BPL Families	Fisherfolk Population
West Bengal	158	59	188	76981	53532	48870	380138
Odisha	480	73	813	114238	87541	56279	605514
Andhra Pradesh	974	353	555	163427	161039	159101	605428
Tamil Nadu	1076	407	573	192697	185465	127245	802912
Puducherry	45	25	40	14271	14248	10998	54627
Kerala	590	187	222	118937	116321	65459	610165
Karnataka	300	96	144	30713	28533	23624	167429
Goa	104	33	39	2189	2147	489	10545
Maharashtra	720	152	456	81492	74203	15509	386259
Gujarat	1600	121	247	62231	59469	15784	336181
Daman & Diu	21	5	11	7374	7181	333	40016
Total	6068	1511	3288	864550	789679	523691	3999214

Source: Marine Fisheries Census, 2010, CMFRI, D/o Animal Husbandry, Dairying & Fisheries

Note : In West Bengal, villages mean Gram Panchayats.

Statement 1.18 : Coral Reefs in India**(a) :Area-distribution of Coral Reefs**

Lakshadweep			Gulf of Kachchh		
Sr. No	Class Name	Area Km ²	Sr. No	Class Name	Area Km ²
1	Shallow Lagoon	107.15	1	Turbid Water	7.62
2	Deep Lagoon	135.88	2	Mud	90.01
3	Inlet	0.48	3	Sand	13.13
4	Lagoonal Patch Reef	1.6	4	Matty Algae	3.82
5	Beach/Exposed Sand	9.78	5	Algae with Mud and Sand	30.04
6	Lagoon(Shallow Sandy)	110.21	6	Inner Reef (Live Corals with Algae)	77.11
7	Sea Grass/Algae	9.77	7	Outer Reef (Live Corals with Algae)	26.77
8	Boulders/Dead Corals	7.31	8	Algal Ridge (live Corals with Algae)	14.81
9	Live Corals Zone (Open/Scattered)/Aligned Coral Zone	29.77	9	Sea Grass/Algae	5.74
10	Live Corals Zone (Dense)/Aligned Coral Zone	7.24	10	Live Corals (More than 80%)	16.25
11	Coralline shelf	118	11	Deep Water Live Corals	5.46
12	Live Corals Zone (Deep Lagoon)	57.17	12	Deep Corals with sand and Algae	1.01
13	Live Corals Zone (Intermediate Depth)	4.48	13	Dead Corals	2.28
14	Coral Knolls	2.47	14	Sandy Substrate	2.52
15	Reef Front (Live Corals)	3.48	15	Reef Slope (No Live Corals)	0.19
			16	Windward Reef Front	3.6
Gulf of Mannar			Andaman & Nicobar Islands		
S. No.	Class Name	Area Km ²	S. No.	Class Name	Area Km ²
1	Sand	1.65	1	Sandy Beach	16.71
2	Sandy substrate	18.56	2	Sandy Substrate (<5 m)	49.07
3	Sandy substrate Deep	34.12	3	Sandy Substrate Deep (>5 m)	67.23
4	Sea Grass	11.16	4	Rock with sandy substrate	25.52
5	Rubbles Zone	1.01	5	live Corals with Rocks	5.74
6	Live Corals Zone with sea grass	9.15	6	Live Corals with Sand	3.12
7	Dead Corals	2.45	7	Exposed Rocky Land	5.2
8	Windward Reef Front	3.22	8	Sea Grass	0.04
9	Algal Ridge	0.32	9	Dead Corals	0.12

Source: State of Forest Report 2011, FSI

Statement 1.18 : Coral Reefs in India**(b) : Diversity of hermatypic corals in the Indian Ocean**

Locality	Genera	species
Gulf of Kutch*	24	37
West Coast Patches*	17	29
Lakshadweep Islands	37	103
Palk bay and Gulf of Mannar	36	96
Tuticorin	19	21
Andaman Islands	31	82
Nicobar Islands	43	103
Total for India*	37	199

Source: Bakus G.J (1994) (ed.) "Coral reef Ecosystem," Oxford and IBH Publishing Co. India. C.M.F.R.I (1989), *Bulletin No 43: "Marine Living Resources of the U.T of Lakshadweep*, CMFRI, Cochin. India

* Pillai, C.S.G. (1996) "Coral reefs of India: Their Conservation and Management, in (Pillai CSG and Menon N.G. eds) "Marine Biodiversity, Conservation and Management," CMFRI, Cochin, India.

Statement 1.19: State-wise area by major soil type

Sr. No.	State	Major Soils Area (Thousand ha)										
		Alluvial soils	Coastal Alluvial soils	Black Soils	Brown forest soils	Beaches	Mountain meadow soils	Laterites	Sub-montane soils	Salt Waste	Sand dunes	Greeks and Lagoons
1	Andaman & Nicobar	197.00	362.70									
2	Andhra Pradesh	2432.68	785.15	4727.26				7003.35				
3	Arunachal Pradesh	251.61										
4	Assam	1204.68										
5	Bihar (including Jharkhand)	9012.82		11.52								
6	Delhi	94.58										
7	Goa	281.98										
8	Gujarat	6703.43	2021.06	5308.68								
9	Haryana	3828.93		12.74								
10	Himachal Pradesh	1054.00										
11	Jammu & Kashmir	11869.76					60.14		103.84			
12	Karnataka	1825.54	913.21	6685.43	263.30			4446.77				
13	Kerala	315.16	191.20					955.16				
14	Lakshadweep		2.49								0.05	
15	Madhya Pradesh*	11867.72		15203.57								
16	Maharashtra	8577.24		15423.78	276.72			64.05				
17	Manipur	318.04										
18	Meghalaya	167.62										
19	Mizoram	107.30										
20	Nagaland											
21	Odisha	4527.71	2214.89	908.30				1960.63				
22	Puducherry	11.31	10.53	14.61		0.92		1.32				0.09
23	Punjab	3897.48										
24	Rajasthan	6992.47		1678.12						36.92	49.08	
25	Sikkim											
26	Tamil Nadu	704.44	178.64	2334.74				1934.27				
27	Tripura	243.08										
28	Uttar Pradesh *	23089.58		1494.46								
29	West Bengal	3247.43	3369.40					1727.96				

Source: National Bureau of Soil Survey and Land Use Planning (ICAR) Nagpur

* Including Uttarakhand (with UP) and Chhattisgarh(with MP)

Contd.

Statement 1.19: State-wise area by major soil type

Major Soils Area (Thousand ha)													
Gullied land	Glaciers	Desert Soils	Hill Soils	Water bodies	Peat Soils	Red Soils	Rock outcrops	Rock Land	Terai Soils	Mangrove swamps	Miscellaneous	Others	Total
						89.57				114.46		61.17	824.90
						9930.11						2625.95	27504.50
						8004.46						118.23	8374.30
						6292.32						346.80	7843.80
						7113.67	18.72					470.12	16626.85
						6.06						47.66	148.30
						70.04						18.18	370.20
		2534.87				101.40						2932.96	19602.40
		409.07										170.46	4421.20
	248.04					2917.11	1348.15						5567.30
	850.60			113.70	-		9225.56					-	22223.60
						4344.98		355.61				344.26	19179.10
						2044.90	202.88					177.00	3886.30
											0.56	0.10	3.20
						16601.28	13.51					658.52	44344.60
						4302.86	274.75					1844.60	30764.00
			428.44			1432.40	3.90					49.92	2232.70
						2075.28							2242.90
						1840.44						160.36	2108.10
						1604.44						53.46	1657.90
			1372.06			3948.85						638.26	15570.70
0.20						0.74						9.48	49.20
		957.51	131.81									49.40	5036.20
		22381.95				588.22	1656.60				837.46	2586.22	36807.04
	101.40					523.16			78.34			6.70	709.60
						7009.01	73.21	474.57				296.92	13005.80
			90.92		2.40	706.69						5.51	1048.60
						3926.97			83.01			847.08	29441.10
			238.54				18.20					273.67	8875.20

Statement 1.20 : State-wise district-wise degraded land

Upto March 2017 (hectare)

Sl. No.	State/UT	District		Total Area	Total Degraded Land area	% Degraded Land Area
1	Andhra Pradesh	1	Chittoor	1492644	127725	8.56
		2	Kurnool	1761393	309412	17.57
		3	Nellore	1307600	169808	12.99
			Total of affected districts	4561637	606945	13.31
	State Total			16296800	606945	3.72
2	Bihar	1	Banka	278768	29294	10.51
		2	Bhagalpur	255822	32589	12.74
		3	Gaya	473659	7727	1.63
		4	Munger	634594	144617	22.79
		5	Siwan	221900	22611	10.19
			Total of affected districts	1864743	236838	12.70
	State Total			9416300	236838	2.52
3	Goa	1	North Goa	175592	24634	14.03
		2	South Goa	194608	19639	10.09
			Total of affected districts	370200	44273	11.96
	State Total			370200	44273	11.96
4	Gujarat	1	Bharuch	776430	192841	24.84
		2	Bhavnagar	1115500	271337	24.32
		3	Surat	776161	85469	11.01
			Total of affected districts	2668091	549647	20.60
	State Total			19624400	549647	2.80
5	Himachal Pradesh	1	Chamba	671500	74238	11.06
		2	Kullu	566604	259127	45.73
			Total of affected districts	1238104	333365	26.93
	State Total			5567300	333365	5.99
6	Jharkhand	1	East Singhbhum	337155	27783	8.24
		2	Palamau	802291	50363	6.28
		3	Sarailela- Kharsawan	272340	37050	13.60
		4	West Singhbhum	529021	58539	11.07
			Total of affected districts	1940807	173735	8.95

Contd.

Statement 1.20 : State-wise district-wise degraded land

Upto March 2017 (hectare)

Sl. No.	State/UT	District		Total Area	Total Degraded Land area	% Degraded Land Area
	State Total			7971600	173735	2.18
7	Karnataka	1	Bagalkot	658877	135145	20.51
		2	Bijapur	1053471	256010	24.30
		3	Chickmagalur	722072	16038	2.22
		4	Gulbarga	1610208	313347	19.46
		5	Tumkur	1055090	58808	5.57
			Total of affected districts	5099718	779348	15.28
	State Total			19179100	779348	4.06
8	Kerala	1	Palghat	448000	16204	3.62
			Total of affected districts	448000	16204	3.62
	State Total			3885200	16204	0.42
9	Madhya Pradesh	1	Balaghat	924500	112941	12.22
		2	Chattarpur	863120	191511	22.19
		3	Gwalior	456449	144079	31.57
		4	Jhabua	646912	322601	49.87
		5	Morena	1168336	373553	31.97
		6	Ratlam	486007	160244	32.97
		7	Sidhi	1039194	228736	22.01
		8	Ujjain	609874	129700	21.27
			Total of affected districts	6194392	1663365	26.85
	State Total			30825200	1663365	5.40
10	Maharashtra	1	Bhandara	934716	49933	5.34
		2	Nasik	1527764	647462	42.38
		3	Wardha	630900	69308	10.99
			Total of affected districts	3093380	766703	24.79
	State Total			30771300	766703	2.49
11	Manipur	1	East Imphal	57800	10238	17.71
		2	West Imphal	51900	15098	29.09
			Total of affected districts	109700	25336	23.10
	State Total			2232700	25336	1.13

Contd.

Statement 1.20 : State-wise district-wise degraded land

Upto March 2017 (hectare)

Sl. No.	State/UT	District		Total Area	Total Degraded Land area	% Degraded Land Area
12	Meghalaya	1	East Garohills	260300	34201	13.14
		2	Jaintia Hills	381900	178666	46.78
		3	South Garohills	185700	8003	4.31
		4	West Garohills	370700	42516	11.47
			Total of affected districts	1198600	263386	21.97
	State Total			2242900	263386	11.74
13	Mizoram	1	Aizawl	357631	109184	30.53
		2	Champhai	318583	184795	58.01
		3	Kolasib	138251	16865	12.20
		4	Lawngtlai	199119	95965	48.19
		5	Lunglei	453800	59913	13.20
		6	Mamit	302575	50986	16.85
		7	Saiha	196581	29416	14.96
		8	Serchhip	142160	70702	49.73
			Total of affected districts	2108700	617826	29.30
	State Total			2108700	617826	29.30
14	Nagaland		Kohima, Phek, Wokha, Zunheboto, Tuensang, Mokokchung, Mon	1657900	441339	26.62
			Total of affected districts	1657900	441339	26.62
	State Total			1657900	441339	26.62
15	Rajasthan	1	Ajmer	842388	398913	47.36
		2	Jhunjhunu	591681	81478	13.77
		3	Nagaur	1764504	361120	20.47
		4	Rajsamand	455093	136908	30.08
			Total of affected districts	3653666	978419	26.78
	State Total			34223900	978419	2.86
16	Sikkim	1	East	95400	5922	6.21
		2	West	116600	17274	14.81
		3	North	422600	94963	22.47
		4	South	75000	5323	7.10

Contd.

Statement 1.20 : State-wise district-wise degraded land

Upto March 2017 (hectare)

Sl. No.	State/UT	District		Total Area	Total Degraded Land area	% Degraded Land Area
			Total of affected districts	709600	123482	17.40
	State Total			709600	123482	17.40
17	Tamilnadu	1	Coimbatore	746128	19566	2.62
		2	Dharmapuri	962247	194502	20.21
		3	Erode	825997	5579	0.68
		4	Thirunelveli	682308	36240	5.31
		5	Tuticorin	459054	78213	17.04
			Total of affected districts	3675734	334100	9.09
	State Total			13006000	334100	2.57
18	Tripura	1	West	303300	21385	7.05
		2	South	314000	33396	10.64
		3	North	210070	60732	28.91
		4	Dhalai	221230	47323	21.39
			Total of affected districts	1048600	162836	15.53
	State Total			1048600	162836	15.53
19	Uttar Pradesh	1	Agra	400369	92650	23.14
		2	Bijnor	454057	37732	8.31
		3	Lalitpur	504149	95450	18.93
		4	Mathura	376432	22975	6.10
		5	Sitapur	570633	88717	15.55
			Total of affected districts	2305640	337524	14.64
	State Total			24092800	337524	1.40
20	West Bengal	1	North 24 Pargana	378090	64062	16.94
		2	Puruliya	625100	198619	31.77
		3	South 24 Paragna	966171	263635	27.29
			Total of affected districts	1969361	526316	26.73
	State Total			8875200	526316	5.93
GRAND TOTAL		82 Districts		45916573	8853262	19.28
India Total				328746900	8853262	2.69

Source: Soil and Land Use Survey of India, Ministry of Agriculture and Farmers Welfare

Statement 1.21: State-wise degraded land by type of soil degradation

State Name	Vegetation Degradation		Water Erosion		Wind Erosion		Salinity		Water Logging		Frost Shattering		(Area in Ha.)	
	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05
Andhra Pradesh	1164257	1168447	789433	783830	3986	4722	117952	117239	132334	125755	-	-	-	-
Arunachal Pradesh	120499	107845	-	-	-	-	-	-	-	-	20186	19072	-	-
Assam	471958	322540	31424	31424	-	-	-	-	186667	193669	-	-	-	-
Bihar	242525	255073	321175	304364	-	-	-	-	106628	78450	-	-	-	-
Chhattisgarh	1348089	1348122	783645	770387	-	-	-	-	-	-	-	-	-	-
Delhi	9980	9980	-	-	-	-	-	-	347	347	-	-	-	-
Goa	138172	132301	33889	33892	-	-	-	-	9005	9003	-	-	-	-
Gujarat	2319826	2255417	3859497	3788099	1177105	1179548	2645405	2643828	3375	3375	-	-	-	-
Haryana	41411	40514	13568	13568	151797	148151	27841	27841	12530	8822	-	-	-	-
Himachal Pradesh	1790803	1582938	268261	233990	-	-	-	-	-	-	332423	322417	-	-
Jammu and Kashmir	1951000	1907187	146932	110222	1670244	1650577	-	-	70563	46548	2968279	2750257	927986	843554
Jharkhand	1379038	1307162	4036785	4037261	-	-	-	-	-	-	-	-	-	-
Karnataka	1712386	1704569	5043041	5059629	2159	2159	86740	86582	-	-	-	-	-	-
Kerala	337613	328638	-	-	-	-	-	-	11989	12906	-	-	-	-
Madhya Pradesh	2523801	2514983	1125418	1120221	-	-	-	-	7788	7788	-	-	-	-
Maharashtra	4884005	4890778	8060753	7622800	-	-	29089	30054	-	-	-	-	-	-
Manipur	575603	574706	8070	8070	-	-	-	-	5026	5026	-	-	-	-
Meghalaya	435527	414659	53149	54046	-	-	-	-	1548	5881	-	-	-	-
Mizoram	167050	81854	8119	7444	-	-	-	-	-	-	-	-	-	-
Nagaland	778421	637957	-	-	-	-	-	-	-	-	-	-	-	-
Orissa	745122	752929	4409413	4442556	-	-	-	-	36439	36439	-	-	-	-
Punjab	32561	18705	14116	1897	-	-	-	-	-	-	-	-	-	-
Rajasthan	2606221	2596003	2116314	2116082	15197874	15332054	363768	365666	18421	18421	-	-	-	-
Sikkim	74318	74205	-	-	-	-	-	-	-	-	3730	3730	-	-
Tamil Nadu	1385478	1368330	6411	6411	30429	30429	9878	9878	-	-	-	-	-	-
Telangana	541145	538533	2854285	2951871	-	-	86514	81917	-	-	-	-	-	-
Tripura	236374	125058	186900	189533	-	-	-	-	-	-	-	-	-	-
Uttar Pradesh	413476	414176	586961	610989	-	-	307571	636202	33620	33907	-	-	-	-
Uttarakhand	606616	545610	11943	11943	-	-	-	-	-	-	13786	13786	-	-
West Bengal	265277	264325	1329539	1299542	-	-	-	-	17627	13261	-	-	-	-
Total	29298553	28283544	36099042	35610069	18233594	18347639	3674759	3999206	653908	599597	3338404	3109262	927986	843554

Source: Desertification and Land Degradation Atlas Of India - 2016, Space Applications Centre, ISRO

Contd.

Statement 1.2.1: State-wise degraded land by type of soil degradation

State Name	Manmade		Barren/Rocky		Settlement		Total Area under Desertification		Total Area under Desertification (%)		No Apparent Degradation	
	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05	2011-13	2003-05
	(Area in Ha.)											
Andhra Pradesh	20833	20565	20521	20521	49441	26649	2298758	2267728	14.35	14.16	13447078	13476591
Arunachal Pradesh	-	-	-	-	13247	9769	153933	136686	1.84	1.63	8144850	8162237
Assam	-	-	-	-	26548	24583	716596	572215	9.14	7.3	6591013	6735134
Bihar	984	984	-	-	23496	20669	694809	659539	7.38	7	8511828	8527091
Chhattisgarh	40541	31972	7222	7222	31656	18685	2211153	2176388	16.36	16.1	11130592	11166012
Delhi	-	-	-	-	79541	63187	89868	73514	60.6	49.57	57307	73661
Goa	3374	3374	-	-	8533	7889	192973	186458	52.13	50.37	168648	174991
Gujarat	51637	50524	39218	39218	165578	117447	10261641	10077455	52.29	51.35	8533439	8718876
Haryana	5962	4894	-	-	85855	70792	338964	314583	7.67	7.12	4082236	4106617
Himachal Pradesh	656	656	-	-	2097	1365	2394240	2141366	43.01	38.46	3123624	3376690
Jammu and Kashmir	-	-	218679	218679	15924	11790	7969607	7538814	35.86	33.92	14027316	14455333
Jharkhand	52734	49730	-	-	30169	24503	5498726	5418657	68.98	67.97	2398866	2469577
Karnataka	20876	18704	3389	2887	82409	66413	6951000	6940943	36.24	36.19	11984329	11994157
Kerala	-	-	-	-	29984	28968	379587	370512	9.77	9.54	3455238	3464358
Madhya Pradesh	19454	16024	31495	30457	96359	82379	3804315	3771853	12.34	12.24	26502030	26648676
Maharashtra	19912	19912	506163	509789	326013	275272	13825935	13348604	44.93	43.38	16415568	16873660
Manipur	-	-	-	-	13260	5290	601959	593093	26.96	26.56	1613978	1622844
Meghalaya	-	-	-	-	4656	4239	494880	478825	22.06	21.35	1746580	1762634
Mizoram	-	-	-	-	12285	6575	187453	95873	8.89	4.55	1903762	1998679
Nagaland	-	-	-	-	8257	4347	786678	642304	47.45	38.74	869562	1013937
Orissa	63851	51445	5128	5053	44161	33481	5304114	5321903	34.06	34.18	9758929	9741425
Punjab	1641	652	-	-	96335	71861	144653	93115	2.87	1.85	4849651	4901242
Rajasthan	53058	50865	1052374	1047818	118482	98696	21526512	21625604	62.9	63.19	12546925	12448140
Sikkim	-	-	-	-	700	546	78749	78482	11.1	11.06	630234	630500
Tamil Nadu	13965	13965	515	515	97223	87133	1543898	1516660	11.87	11.66	11344261	11371500
Telangana	16982	14592	1979	1979	97951	69591	3598856	3658482	31.34	31.86	7689491	7631019
Tripura	-	-	-	-	13854	12711	437128	327302	41.69	31.21	608776	716717
Uttar Pradesh	5970	4028	-	-	181399	135962	1528997	1835263	6.35	7.62	22115961	21831845
Uttarakhand	-	-	-	-	15908	9903	648253	581241	12.12	10.87	4667750	4738936
West Bengal	15102	14112	-	-	106386	90941	1733931	1682181	19.54	18.95	6884910	6926022
Total	407531	366998	1886682	1884137	1877708	1481638	96398166	94525643	29.32	28.76	225804731	227759103

Source: Desertification and Land Degradation Atlas Of India - 2016, Space Applications Centre, ISRO

Statement 1.22: State-wise nutrient status of soil (a) Status of macro nutrients

(For cycle I - 2015-16 to 2016-17)- as on 23.01.2018

State Name	Nitrogen (N)					Phosphorus (P)				
	Very Low	Low	Medium	High	Very High	Very Low	Low	Medium	High	Very High
Andaman And Nicobar Island	1150	6788	16		5	1694	4661	1185	274	161
Andhra Pradesh	316070	618195	60663	3052	2869	90235	39086	255901	185493	446416
Arunachal Pradesh	528	202	3151	12484	10	6267	3629	4775	793	894
Assam	5266	508	13051	7983	189	8384	6858	12249	5339	2468
Bihar	84242	1566	39528	140	146	13714	2305	33475	49673	27108
Chhattisgarh	404923	75837	166588	11075	7677	137845	86060	309268	73784	64719
Dadra And Nagar Haveli						1		1769	204	224
Delhi	49	41	20			6		65	32	7
Goa	5188	383	12374	1301	2290	2266	7278	3566	3600	1747
Gujarat	2874	26322	1166	52	133	71774	38253	190237	302923	469322
Haryana	273	34459	4		13	246702	207300	250798	48563	57824
Himachal Pradesh	35905	5024	47695	2915	113	11913	4190	57264	14413	12133
Jammu And Kashmir	18745	4865	56078	9109	8577	19602	5680	63006	39622	30164
Jharkhand	18545	3623	14744	1107	749	5420	4501	16407	5151	7185
Karnataka	198685	165260	187707	36865	72398	74249	36097	417206	289509	631670
Kerala	270	691	61		1	16252	14387	42716	59995	55897
Maharashtra	299990	119743	306366	35962	31785	230286	110773	548054	133665	155132
Manipur	8	35				12	1	19	7	17
Meghalaya	171	101	86	6	1	7637	5263	12743	2906	2611
Madhya Pradesh	436234	38450	157066	4570	1616	64262	15174	323127	143850	92084
Mizoram	1239	52	7898	17		1250	21	7763	120	51
Nagaland	918	46	8172	10219	30	6936	2294	7239	1139	1778
Odisha	783	834	620	7	4	56304	54537	128383	46133	42136
Puducherry	1062	3220	50		3	142	3550	321	199	124
Punjab	80	528	1981	508	321	12841	4079	10740	299	166
Rajasthan	1	4	2			11791	3078	328968	311559	149813
Sikkim	2901	161	7284	545	19	23	978	4250	3656	2002
Telangana	293547	95724	39625	5593	1653	38092	8352	84718	81935	315152
Tamil Nadu	588363	605711	21913	181	912	157832	77571	393707	172321	423949
Tripura	48	64	91	3		286	269	16526	673	11202
Uttar Pradesh	293524	3700876	61390	1172	6514	901780	408356	3160925	255173	98468
Uttarakhand	152	235	159	8	3	19898	17501	54493	20573	9878
West Bengal	552	1470	845	23	7	53	10	486	765	2412
Total	3012286	5511018	1216394	144897	138038	2215749	1172092	6742349	2254341	3114914

Source: <http://soilhealth.dac.gov.in/>, Department of Agriculture Cooperation and Farmer Welfare, (As retrieved on 07.03.2018)

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Statement 1.22: State-wise nutrient status of soil (a) Status of macro nutrients

(For cycle I - 2015-16 to 2016-17)- as on 23.01.2018

Potassium (K)					Organic Carbon (OC)					Total No. of samples
Very Low	Low	Medium	High	Very High	Very Low	Low	Medium	High	Very High	
3784	2265	1588	251	3	3777	2738	874	236	710	8080
190926	98095	425073	207120	67132	300596	107342	191613	251170	165639	1021258
996	528	8921	4720	1245	1088	437	1273	1900	11682	16426
17308	9863	6085	1810	250	4200	727	5743	6507	28233	36036
11226	560	82659	8085	585	42448	6120	58910	16493	2286	125401
50446	30078	328198	234475	29401	231300	81341	174061	71630	86341	679858
5	2	167	761	1263	759	80	912	412	35	2198
11	1	54	44		50	29	23	8		110
2472	599	10745	5353	3114	1788	350	2043	2919	15196	22307
43674	110038	270618	602428	44339	380434	72253	378009	159575	80716	1077841
157103	84365	294288	214965	59481	595704	186169	27825	2541	4966	814775
10645	2787	53073	25728	7669	7292	1089	16334	20004	55020	99960
27571	12080	89393	26169	2518	28961	7127	37525	25115	59186	158017
5834	5298	18158	7559	1920	11451	4175	11163	5760	5974	38786
134758	121410	470086	565041	157653	479963	225586	367440	186001	179953	1443964
35703	16129	79953	49090	8348	29331	9189	34451	29114	86788	189556
34392	27048	261005	561222	293951	462430	147626	334999	123863	105309	1179424
33	9	14			12	5	12	5	22	56
11015	6838	10447	2623	181	1866	531	3855	3945	20530	31062
26342	12416	238218	307640	53187	198328	27553	250136	95740	72986	644058
764	18	7704	691	10	4656	88	4150	210	176	9236
1548	1561	9668	5474	1136	689	244	724	1323	16401	19396
76187	22739	154135	57469	16578	127618	66692	85277	28468	19474	326511
841	297	1864	1189	144						4336
14452	3293	2928	2888	15	18847	517	10454	1211	73	32134
38599	1961	364698	381850	17940	366191	293265	120456	20986	4306	781424
100	115	5729	3920	1039	32	4	123	245	10483	10914
39309	11700	182099	215278	77910	293701	44382	78494	53392	8383	528505
238902	89719	505447	277558	113375	596711	292982	169412	42687	29220	1212303
17171	2143	7096	2563	37	5031	1495	10958	11454	261	29353
382338	158525	3696212	565996	17928	3243542	1012181	429585	61396	86052	4847020
17804	3320	80201	19133	1804	46474	8580	39580	17201	10422	122282
487	474	1777	853	134	612	157	1273	813	871	3728
1592746	836274	7668301	4359946	980290	7485882	2601054	2847687	1242324	1167694	15516315

Source: <http://soilhealth.dac.gov.in/>, Department of Agriculture Cooperation and farmer Welfare, (As retrieved on 07.03.2018)

Statement No. 1.22: State-wise nutrient status of soil
(b) Status of micro nutrients

(For cycle I - 2015-16 to 2016-17) - As on 23.01.2018

State Name	Boron (B)		Copper (Cu)		Iron (Fe)		Manganese (Mn)		Sulphur (S)		Zinc (Zn)		Total No. of samples
	Deficient	Sufficient	Deficient	Sufficient	Deficient	Sufficient	Deficient	Sufficient	Deficient	Sufficient	Deficient	Sufficient	
Andaman and Nicobar Islands	215	7028	309	7709	111	7914	63	7960	7988	70	2016	6023	8080
Andhra Pradesh	104438	395852	47187	829879	283173	592987	94009	778488	128494	844179	344549	529918	1021258
Arunachal Pradesh	132	337	4099	12107	1285	14928	4071	11833	1779	11909	7782	8629	16426
Assam	21463	6265	754	34057	4592	30285	1063	32610	1330	25707	3194	32108	36036
Bihar		64	672	25712	4248	22307	4566	21795	4	271	9583	17037	125401
Chhattisgarh	155531	294119	16298	580125	74420	537897	32177	563986	151609	462999	212019	393965	679858
Dadra and Nagar Haveli		2198	2	2196	178	2018	6	2191	1	2197	251	1947	2198
Delhi	28	82	14	96	46	64	38	71		110	16	94	110
Goa	734	1478	46	2256	31	2279	30	2275	42	203	493	1807	22307
Gujarat	287499	546484	36588	882652	268403	656221	115094	807984	315868	607593	306438	619982	1077841
Haryana	45	556	26480	391896	214074	594163	177793	624056	65484	717423	145105	665508	814775
Himachal Pradesh	2938	30333	4831	83869	10199	78638	25357	63044	1924	56571	9405	79584	99960
Jammu And Kashmir	2569	5821	20501	66415	29775	56305	42488	43739	23284	45475	38170	49958	158017
Jharkhand	11511	22277	1731	23333	2623	33170	2021	23003	15548	20148	12753	23413	38786
Karnataka	645996	775075	117221	1327545	745285	701794	261815	1170905	509304	919582	767737	679348	1443964
Kerala	79059	70237	8309	177705	6891	178452	17471	167475	70144	77856	18062	168119	189556
Maharashtra	280911	384064	26691	1140215	739653	430702	152864	1010870	415453	346552	593544	576760	1179424
Manipur		29	1	42	28	15	23	19		3	36	7	56
Meghalaya		15		257	109	158	43	207	13	29	12	255	31062
Madhya Pradesh	85784	259047	22693	480004	124830	382546	40324	463672	91722	303120	200674	310369	644058
Mizoram	44	127		118	11	122	2	116	44	145	10	167	9236
Nagaland	5	15	8264	11076	2617	16764	5176	14165	1164	18215	7546	11831	19396
Odisha	6414	3962	3	278	35	438	13	244	8364	6829	6273	6777	326511
Puducherry	3625	2	111	4223	801	3534	384	3928	1	776	373	3963	4336
Punjab	11	8	58	2591	943	2292	1207	2162	15	32	879	2562	32134
Rajasthan	3	1626	32873	757826	387419	405411	56660	731445	2	2	299381	493945	781424
Sikkim	3908	7001	3075	7823	554	10351	3600	7202	2277	8633	2738	8173	10914
Telangana	193	822	255	8961	4196	4801	1058	8157	6521	66891	4831	4545	528505
Tamil Nadu	627175	464460	49273	1165339	403548	814613	233113	965121	384506	767994	331969	885742	1212303
Tripura	53	358	489	25522	1397	24312	300	24818	14	469	2607	23330	29353
Uttar Pradesh	531857	1432353	243913	4503353	1113374	3647114	556103	4180637	1690958	2896104	1374940	3386149	4847020
Uttarakhand	571	342	12482	109432	16233	105824	15093	105076	35947	85505	27376	94534	122282
West Bengal	1228	1234	14	3423	849	2589	496	2921	2295	993	252	3191	3728
Total	2853940	4713671	685237	12668035	4441931	9361008	1844521	11842175	3932102	8294618	4730985	9089769	15516315

Source: <http://soilhealth.dac.gov.in/>, Department of Agriculture Cooperation and Farmer Welfare, (As retrieved on 07.03.2018)

Statement 1.23 : Land use and land cover classes - India

S. No.	L 1	L 2	Area (Sq. Kms.)		
			1985	1995	2005
1	Agriculture	Crop land	1,558,712	1,556,346	1,614,921
		Current Shifting cultivation			
		Fallow	252,073	266,671	221,136
		Plantation	77,493	77,956	78,560
		Sub Total -1	1,888,278	1,900,973	1,914,617
2	Barren/ unculturable/ Wastelands	Barren Rocky	65,484	71,250	69,855
		Gullied / Ravinous Land	84,414	78,649	74,355
		Rann			
		Salt Affected Land			
		Sandy Area			
		Scrub Land	182,860	188,342	192,873
		Sub Total-2	332,758	338,241	337,083
3	Builtup	Mining			
		Rural			
		Urban	34,019	40,090	47,239
		Sub Total-3	34,019	40,090	47,239
4	Forest	Deciduous	317,429	294,777	280,684
		Evergreen/Semi evergreen	208,063	205,160	197,992
		Forest Plantation	150,163	149,523	147,284
		Scrub Forest	84,368	91,188	98,723
		Swamp / Mangroves	4120	4525	4579
		Sub Total-4	764,143	745,173	729,262
5	Grass / Grazing	Grass / Grazing	54,553	56,604	61,595
		Sub Total-5	54,553	56,604	61,595
6	Snow and Glacier ²	Snow and Glacier	97,152	91,636	92,522
		Sub Total-6	97,152	91,636	92,522
7	Wet lands / Water bodies ¹	Inland Wetland			
		Coastal Wetland			
		River/Stream/Canals			
		Water bodies	116,119	121,148	114,856
		Sub Total-7	116,119	121,148	114,856
		Grand Total	3,287,022	3,293,865	3,297,174

1 Includes Aqua Culture, Water bodies, and Permanent Wetlands;

2 Includes Salt Pan, Snow and Ice.

Source: Remote Sens. 2015, 7(3), 2401-2430; doi:10.3390/rs70302401 Article "Development of Decadal (1985-1995-2005) Land Use and Land Cover Database for India

Statement 1.24 : State-wise area by land cover classes

S. No.	L 1	L 2	Andhra Pradesh		Arunachal Pradesh		Assam		Bihar		Chhattisgarh	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	133351.42	137611.64	2372.56	2508.03	23730.42	23370.18	59754.51	65147.86	57661.80	58616.14
		Current Shifting cultivation	16.28	15.40	1016.77	916.32	150.37	123.09			1.85	20.40
		Fallow	25967.36	19003.64	48.13	74.34	249.60	626.40	10809.76	5945.20	3252.22	2998.50
		Plantation	6777.10	8496.27	35.10	55.18	3810.17	3825.61	2438.06	2450.29	219.97	236.16
		Sub Total -1	166112.15	165126.94	3472.55	3553.87	27940.56	27945.28	73002.34	73543.35	61135.83	61871.20
2	Barren/ unculturable/ Wastelands	Barren Rocky	2926.39	2906.75	140.28	183.77	7.91	8.05	151.24	151.24	567.33	560.84
		Gullied / Ravinous Land	371.31	370.33			6.78	6.78	60.01	56.16	63.88	22.94
		Rann									0.29	0.29
		Salt Affected Land	1553.47	1608.74							97.04	87.42
		Sandy Area	299.45	250.05	8.71	9.13	69.98	217.10	6.78	5.87	4515.89	4292.13
3	Builtup	Scrub Land	17282.66	16943.53	2425.55	2297.00	3762.46	3780.27	3210.54	3015.81		
		Sub Total -2	22433.28	22079.40	2574.54	2489.90	3847.13	4012.20	3428.57	3229.08	5244.43	4963.61
		Mining	740.19	984.10	0.63	0.63	34.66	60.57	46.21	53.74	236.47	293.38
		Rural	4922.85	4931.03	411.40	411.73	558.75	616.93	4463.73	4489.57	3100.17	3100.17
		Urban	2596.83	3348.51	125.61	125.91	561.59	580.25	796.13	834.16	708.95	845.75
4	Forest	Sub Total -3	8259.87	9263.64	537.64	538.27	1154.99	1257.74	5306.07	5377.46	4045.59	4239.30
		Deciduous	44925.17	44629.46	133.23	147.23	23910.45	23722.18	4586.67	4637.04	58139.14	57346.44
		Evergreen/Semi evergreen	257.55	257.55	60194.63	59711.05	7889.11	7814.48			0.01	0.01
		Forest Plantation	1023.04	1067.44	22.84	24.76	124.54	124.01	2.83	2.83	51.21	58.75
		Scrub Forest	13014.71	13216.05	623.89	1386.83	2043.80	2187.39	1073.78	1023.76	3381.14	3368.11
5	Grass / Grazing	Swamp / Mangroves	330.24	376.09								
		Sub Total -4	59550.71	59546.59	60974.59	61269.87	33967.91	33848.06	5663.28	5663.62	61571.50	60773.32
		Grass / Grazing	129.91	129.18	5655.22	5499.48	2684.73	3053.55	17.41	20.80	0.15	0.15
		Sub Total -5	129.91	129.18	5655.22	5499.48	2684.73	3053.55	17.41	20.80	0.15	0.15
		Snow and Glacier			8954.27	8776.33						
6	Snow and Glacier	Sub Total -6			8954.27	8776.33						
		Inland Wetland	238.10	470.23	5.46	5.42	1807.18	1496.65			0.05	0.50
		Coastal Wetland	1116.51	1067.50					2022.44	1840.48		
		River/Stream/Canals	5690.48	5920.46	1532.46	1572.73	6965.71	6750.84	4555.79	4324.55	1773.81	1786.38
		Water bodies	11537.00	11464.06	36.26	37.11	69.78	73.67	175.10	171.65	1422.64	1559.54
7	Wet lands / Water bodies	Sub Total -7	18582.09	18922.25	1574.19	1615.27	8842.68	8321.16	6753.32	6336.68	3196.50	3346.42
		Grand Total	275068.00	275068.00	83743.00	83743.00	78438.00	78438.00	94171.00	94171.00	135194.00	135194.00

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Goa		Gujarat		Haryana		Jammu & Kashmir		Karnataka	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	593.19	590.25	110717.00	109778.58	40571.48	40580.62	10782.16	10768.25	110912.14	111604.92
		Current Shifting cultivation										
		Fallow	176.24	173.67	13959.47	14367.28	469.53	264.82	148.86	143.70	5112.57	4052.52
		Plantation			82.42	329.83	79.00	79.57	2105.78	2110.60	19443.84	19574.25
2	Barren/ unculturable/ Wastelands	Sub Total -1	769.43	763.91	124758.88	124475.69	41120.02	40925.01	13036.79	13022.54	135468.55	135231.69
		Barren Rocky	56.42	56.42	204.36	204.36	92.34	91.80	93180.50	103186.52	1151.34	1144.80
		Gullied / Ravinous Land			438.84	444.05	0.21	0.21	574.17	575.09	61.46	61.52
		Rann			16995.58	16995.29						
3	Builtup	Salt Affected Land			972.14	970.36	31.87	27.64	63.57	63.57	526.08	525.40
		Sandy Area	2.42	2.42	187.72	186.47	17.38	9.42	1799.13	1815.92	12.46	12.39
		Scrub Land	270.39	264.73	18677.16	18593.18	395.26	378.10	7349.22	8087.48	6891.82	6873.33
		Sub Total-2	329.23	323.57	37475.81	37393.71	537.06	507.17	102966.59	113728.59	8643.16	8617.44
4	Forest	Mining	73.29	84.38	114.02	125.80	38.18	51.28	8.17	8.81	555.19	579.38
		Rural	19.86	19.92	1497.67	1498.60	381.45	428.04	367.54	370.53	3005.48	3006.02
		Urban	287.24	290.05	1700.47	1964.14	635.17	809.11	371.22	386.64	2309.05	2575.84
		Sub Total-3	380.40	394.34	3312.16	3588.53	1054.81	1288.43	746.93	765.97	5869.72	6161.23
5	Grass / Grazing	Deciduous	1160.38	1158.37	10031.74	10021.00	645.56	647.11	2560.37	1841.01	15928.49	15912.61
		Evergreen/Semi evergreen	621.78	621.78	10.56	10.56	8.67	8.67	14223.45	15216.36	10040.53	10039.66
		Forest Plantation	41.15	41.15	188.54	188.13	4.31	4.31	16.03	15.46	3012.11	3017.58
		Scrub Forest	208.42	208.42	1897.53	1926.25	108.73	106.94	23212.99	26754.94	4913.03	4892.65
6	Snow and Glacier	Swamp / Mangroves	16.46	16.46	549.67	606.01					5.81	5.81
		Sub Total-4	2048.19	2046.18	12678.04	12751.96	767.27	767.04	40012.83	43827.76	33899.98	33868.32
		Grass / Grazing	0.18	0.18	17.36	19.81	415.92	382.80	4622.26	4883.59	682.32	681.67
		Sub Total-5	0.18	0.18	17.36	19.81	415.92	382.80	4622.26	4883.59	682.32	681.67
7	Wet lands / Water bodies	Snow and Glacier							56873.20	42027.26		
		Sub Total-6							56873.20	42027.26		
		Inland Wetland	55.05	54.44	8937.22	8851.59	25.43	29.20	669.03	670.28	23.85	23.85
		Coastal Wetland	20.18	20.18	981.57	981.08					23.34	22.82
		River/Stream/Canals	68.91	69.02	3047.96	3060.56	238.46	251.63	2097.37	2072.37	1964.69	1967.70
		Water bodies	30.43	30.18	4815.01	4901.07	53.02	60.72	1211.04	1237.67	5215.38	5216.27
		Sub Total-7	174.57	173.82	17781.75	17794.30	316.91	341.55	3977.43	3980.32	7227.27	7230.64
		Grand Total	3702.00	3702.00	196024.00	196024.00	44211.99	44211.99	222236.04	222236.04	191791.00	191791.00

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Kerala		Maharashtra		Meghalaya		Manipur		Mizoram	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	2693.72	2643.67	184975.05	188314.38	1259.89	1289.31	1554.12	1534.14	860.97	181.69
		Current Shifting cultivation					317.52	233.74	491.92	451.23	1014.11	790.39
		Fallow	77.55	98.80	19153.88	14625.03	0.33	1.32	8.78	8.88		
		Plantation	19014.06	18930.06	6196.40	6073.31	581.03	565.14	37.55	38.14	69.78	83.50
2	Barren/ unculturable/ Wastelands	Sub Total -1	21785.33	21672.54	210325.33	209012.72	2158.76	2089.51	2092.36	2032.39	1944.85	1055.58
		Barren Rocky	258.06	256.31	1113.03	1103.87	263.08	263.03				5.14
		Gullied / Ravinous Land			501.91	485.92						
		Rann										
3	Builtup	Salt Affected Land			17.06	8.12						
		Sandy Area	6.31	4.39	0.88	0.97	4.63	4.40				
		Scrub Land	1385.17	1398.17	22427.32	22175.08	2782.66	2835.55	3145.07	3055.59	39.18	139.68
		Sub Total-2	1649.54	1658.87	24060.21	23773.96	3050.37	3102.97	3145.07	3055.59	39.18	144.82
4	Forest	Mining	53.65	56.11	292.45	347.38	0.83	1.78				
		Rural	2413.46	2416.34	2982.07	3084.27	709.97	775.07	302.92	308.28	112.65	124.33
		Urban	538.40	644.06	3024.36	3767.77	66.81	85.82	101.38	102.79	60.94	65.24
		Sub Total-3	3005.51	3116.51	6298.88	7199.42	777.61	862.67	404.30	411.07	173.60	189.56
5	Grass / Grazing	Deciduous	1610.70	1587.43	40462.88	40060.08	14714.62	9705.09	11770.32	11669.49	7593.55	7233.73
		Evergreen/Semi evergreen	6054.25	6034.80	7188.13	7186.38	758.62	750.02	2799.15	2784.06	6433.71	6984.55
		Forest Plantation	2137.76	2132.58	255.91	347.24	13.63	13.70	1.58	1.58	83.97	105.84
		Scrub Forest	897.05	923.54	8810.53	9045.16	601.27	615.01	1571.51	1823.61	4554.37	5093.17
6	Snow and Glacier	Swamp / Mangroves	0.24	0.24	255.92	255.92	0.58	4943.21				
		Sub Total-4	10700.00	10678.60	56973.37	56894.77	16088.72	16027.02	16142.56	16278.76	18665.60	19417.28
		Grass / Grazing	199.36	199.43	1.77	1.76	0.03	0.03	2.58	2.58	120.07	112.18
		Sub Total-5	199.36	199.43	1.77	1.76	0.03	0.03	2.58	2.58	120.07	112.18
7	Wet lands / Water bodies	Snow and Glacier										
		Sub Total-6										
		Inland Wetland	86.41	86.45	914.65	910.99						0.04
		Coastal Wetland	257.55	267.58	2.42	2.28	62.36	55.40	287.32	287.32		
		River/Stream/Canals	556.07	555.12	3883.76	3896.22	273.25	273.42	138.69	145.18	134.83	136.07
		Water bodies	623.22	627.90	5229.62	5997.88	17.89	17.98	116.70	116.70	2.87	25.47
		Sub Total-7	1523.25	1537.05	10030.45	10807.37	353.50	346.80	542.71	549.20	137.71	161.58
		Grand Total	38863.00	38863.00	307690.00	307690.00	22429.00	22429.00	22329.58	22329.58	21081.00	21081.00

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Madhya Pradesh		Nagaland		Odisha		Punjab		Rajasthan	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	183013.08	182424.85	574.20	574.06	76712.89	76104.07	43169.08	42786.97	139162.10	155432.55
		Current Shifting cultivation			1135.81	1160.42	1050.78	716.77				
		Fallow	6518.62	5776.13	15.45	20.68	2106.79	2286.76	28.11	69.66	77355.28	65966.12
		Plantation	50.47	56.11	9.30	9.84	334.22	337.64	567.39	822.41	101.05	106.79
		Sub Total-1	189582.18	188257.08	1734.75	1765.00	80204.68	79445.25	43764.58	43679.04	216618.43	221505.45
2	Barren/unculturable/Wastelands	Barren Rocky	434.53	419.32	0.86	0.86	478.70	478.70			5011.88	4996.01
		Gullied / Ravinous Land	1468.02	1466.73			716.33	717.57	38.25	35.38	2599.38	2476.31
		Rann									196.10	196.20
		Salt Affected Land					28.94	15.52	59.45	25.64	939.95	799.15
		Sandy Area					52.15	54.36	438.38	128.71	30038.70	25036.14
3	Builtup	Scrub Land	23791.24	23534.51	2127.74	2355.57	10733.01	10791.78	340.04	357.53	41218.89	41294.37
		Sub Total-2	25693.79	25420.56	2128.60	2356.43	12009.14	12057.93	876.13	547.26	80004.90	74798.18
		Mining	227.78	286.57	8.89	8.89	165.07	221.86	48.56	122.17	330.78	398.87
		Rural	2787.14	2777.99	239.84	251.08	4980.75	4975.29	1658.56	1739.59	3046.86	3072.35
		Urban	1427.56	1613.47	89.17	90.23	853.36	1080.89	1566.95	1820.37	1696.94	1927.94
4	Forest	Sub Total-3	4442.48	4678.03	337.90	350.20	5999.18	6278.04	3274.07	3682.13	5074.57	5399.16
		Deciduous	69149.74	69010.95	9940.54	9527.72	43263.43	43182.88	1428.29	1425.08	16852.89	17302.46
		Evergreen/Semi evergreen			341.62	340.33	0.36	0.36	12.75	12.65		
		Forest Plantation	34.38	61.38	127.51	126.82	874.65	874.32	16.20	14.81	120.61	141.55
		Scrub Forest	12345.75	12273.65	1747.15	1890.93	5965.79	6416.18	69.18	70.50	11185.85	10739.91
5	Grass / Grazing	Swamp / Mangroves					220.81	247.28				
		Sub Total-4	81529.87	81345.99	12156.83	11885.80	50325.04	50721.03	1526.43	1523.03	28159.36	28183.92
		Grass / Grazing	1.89	1.61	19.33	19.33				0.11	6059.58	5597.07
		Sub Total-5	1.89	1.61	19.33	19.33				0.11	6059.58	5597.07
		Snow and Glacier										
6	Snow and Glacier	Sub Total-6										
		Inland Wetland					1178.66	1130.32	125.55	114.63	203.15	245.33
		Coastal Wetland					468.89	464.71				
		River/Stream/Canals	3237.33	3237.63	180.68	181.10	3031.54	3028.80	717.04	731.86	3331.44	3343.57
		Water bodies	3764.36	5311.01	20.91	21.14	2489.88	2580.92	78.20	83.94	2787.57	3166.33
7	Wet lands / Water bodies	Sub Total-7	7001.69	8548.64	201.59	202.24	7168.97	7204.75	920.79	930.43	6322.17	6755.23
		Grand Total	308251.90	308251.90	16579.00	16579.00	155707.00	155707.00	50362.00	50362.00	342239.00	342239.00

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Sikkim		Tamil Nadu		Tripura		Uttarakhand		Uttar Pradesh	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	586.75	585.78	64493.82	64140.35	1390.11	1404.68	9644.67	9649.74	170293.00	181083.59
		Current Shifting cultivation			9477.76	9498.31	756.54	730.87	1006.29	968.93		
		Fallow	0.57	0.57	14111.10	13989.48	17.69	32.26	170.00	166.38	12337.90	5260.90
		Plantation	7.53	7.55			80.92	125.61			4382.95	4550.34
		Sub Total -1	594.85	593.90	88082.67	87628.14	2245.27	2293.43	10820.97	10785.05	187013.85	190894.82
2	Barren/ unculturable/ Wastelands	Barren Rocky	996.98	811.33	535.13	530.59					687.72	679.07
		Gullied / Ravinous Land	0.43	7.48	66.16	69.77	0.08	0.08	4.25	4.25	3126.42	2886.69
		Rann			4962.22	4967.59	566.78	617.83	679.81	695.67		
		Salt Affected Land			181.85	171.20	4.67	4.68	7.03	7.03	4438.31	3741.69
		Sandy Area	3.57	3.56	284.49	272.26			3122.27	6037.41	95.91	9.68
3	Builtup	Scrub Land	20.70	19.71							9967.44	7052.30
		Sub Total-2	1021.69	842.07	6029.84	6011.42	571.53	622.59	3813.37	6744.37	18315.80	14369.43
		Mining		0.09	2075.40	2312.27	332.86	342.70	376.61	379.51	98.53	116.33
		Rural	5.37	5.54	3722.79	3784.21	469.32	493.51	205.14	205.42	7001.23	6953.45
		Urban	16.70	18.23	229.76	380.34	4.96	5.37	19.09	19.39	4141.60	4328.26
4	Forest	Sub Total-3	22.08	23.86	6027.95	6476.82	807.14	841.58	600.84	604.32	11241.37	11398.04
		Deciduous	186.34	187.09	5075.04	5077.61	3979.59	3864.21	16101.24	16099.33	8855.87	8881.39
		Evergreen/Semi evergreen	2662.19	2646.96	11222.48	11219.34	1955.64	1933.98	6555.31	6548.66		
		Forest Plantation	4.04	4.00	1380.17	1379.29	310.90	307.42	792.26	790.54	72.38	77.19
		Scrub Forest	47.41	47.00	2648.44	2646.11	501.24	511.30	2318.55	2316.86	3472.42	3416.12
5	Grass / Grazing	Swamp / Mangroves			79.61	79.61			8.31	8.31	217.84	214.47
		Sub Total-4	2899.99	2885.05	20405.74	20401.96	6747.37	6616.90	25775.68	25763.71	12618.51	12589.18
		Grass / Grazing	692.49	628.62	174.71	172.42			4150.44	4412.15	376.45	310.48
		Sub Total-5	692.49	628.62	174.71	172.42			4150.44	4412.15	376.45	310.48
		Snow and Glacier	1809.89	2063.55					7080.74	3884.64		
6	Snow and Glacier	Sub Total-6	1809.89	2063.55					7080.74	3884.64		
		Inland Wetland			43.82	49.93	7.18	5.52	0.05	0.05		
		Coastal Wetland			874.21	868.94					2754.33	2307.48
		River/Stream/Canals	41.20	41.21	1751.73	1702.88	51.55	50.63	1064.31	1092.55		
		Water bodies	13.83	17.74	6667.09	6745.25	55.97	55.34	176.60	196.17	6855.17	7255.18
7	Wet lands / Water bodies	Sub Total-7	55.03	58.95	9336.84	9367.00	114.70	111.50	1240.96	1288.77	9609.50	9562.66
		Grand Total	7096.00	7096.00	130057.76	130057.76	10486.00	10486.00	53483.00	53483.00	239175.47	239124.60

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Himachal Pradesh		Jharkhand		West Bengal		Andaman and Nicobar		Delhi	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	6629.85	6527.03	32708.65	33013.68	55151.35	54888.03	39643.53	61678.38	469.52	452.58
		Current Shifting cultivation					2285.29	2371.58		2285.29		
		Fallow	1.51	1.51	4914.47	4503.42	159.87	54.18	4504.93	161.38	91.55	76.68
		Plantation	2164.11	2050.91	24.37	47.84			2211.95	2050.91	2.43	15.93
2	Barren/unculturable/ Wastelands	Sub Total -1	8795.47	8579.45	37647.49	37564.94	57596.52	57313.79	46360.41	66175.96	563.51	545.19
		Barren Rocky	6415.43	9463.15	466.99	462.87	38.60	31.85	6878.30	9501.75	0.10	0.10
		Gullied / Ravinous Land	143.84	129.01	78.36	78.38	15.79	15.36	222.22	144.80	6.74	6.05
		Rann					48.47	45.66		48.47		
3	Builtup	Salt Affected Land	2.47	2.47					2.47	2.47	0.15	0.15
		Sandy Area	25.45	22.69	0.08	0.17	0.20	0.97	25.62	22.89		
		Scrub Land	3646.94	3913.33	6069.72	6027.87	1211.96	1235.16	9674.80	5125.29	65.45	62.18
		Sub Total-2	10234.12	13530.65	6615.14	6569.29	1315.01	1329.00	16803.41	14845.66	72.45	68.48
4	Forest	Mining	11.42	14.97	486.42	554.61	2553.33	2685.18	566.03	2568.29	0.89	0.67
		Rural	400.64	308.26	2955.11	2951.63	12660.95	12662.90	3352.27	12969.20	49.91	50.70
		Urban	204.74	299.30	963.71	1000.18	154.36	212.84	1204.93	453.66	735.90	754.19
		Sub Total-3	616.80	622.52	4405.24	4506.42	15368.64	15560.91	5123.23	15991.16	786.70	805.57
5	Grass / Grazing	Deciduous	2323.28	2337.67	23748.67	23713.13	184.20	184.63	26036.41	2521.88	9.09	10.58
		Evergreen/Semi evergreen	11098.84	11018.10			6276.59	6293.13	11098.84	17294.68		
		Forest Plantation	5.83	5.83	20.45	29.37	526.49	601.34	35.20	532.31	0.38	0.38
		Scrub Forest	1222.92	1208.25	5299.59	5297.58	455.39	422.72	6520.50	1663.64	12.05	12.05
6	Snow and Glacier	Swamp / Mangroves	0.32	0.32			1972.13	1969.28	0.32	1972.45		
		Sub Total-4	14651.19	14570.16	29068.71	29040.09	9414.80	9471.11	43691.27	23984.96	21.52	23.02
		Grass / Grazing	9151.49	8660.77	0.00	3.29	137.56	100.41			6.24	5.71
		Sub Total-5	9151.49	8660.77	0.00	3.29	137.56	100.41			6.24	5.71
7	Wet lands / Water bodies	Snow and Glacier	10784.74	8261.72								
		Sub Total-6	10784.74	8261.72								
		Inland Wetland	7.73	3.51	13.16	13.16	338.14	337.11	20.89	341.65	4.10	4.10
		Coastal Wetland					156.06	139.22		156.06		
		River/Stream/Canals	1004.87	1013.92	1310.68	1312.90	3320.16	3240.29	2317.76	4334.08	24.71	27.15
		Water bodies	426.59	430.30	645.57	695.92	1105.13	1260.15	1122.51	1535.42	3.79	3.79
		Sub Total-7	1439.18	1447.73	1969.42	2021.98	4919.48	4976.77	3461.16	6367.21	32.59	35.04
		Grand Total	55673.00	55673.00	79706.00	79706.00	88752.00	88752.00	115439.48	127364.96	1483.00	1483.00

Contd.

Statement 1.24 : State-wise area by land cover classes

(Area in Sq. Kms.)

S. No.	L 1	L 2	Chandigarh		Daman & Diu		Lakshadweep		Puducherry		Dadra & Nagar Haveli	
			2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
1	Agriculture	Crop land	13.91	12.85	40096.11	61692.29			178535.94	55370.41	120.27	112.51
		Current Shifting cultivation				2285.29			6855.88	2371.58		
		Fallow	3.82	1.08	4581.61	165.20	0.02	0.02	490.27	146.83	87.39	89.93
		Plantation	0.93	1.02	2227.88	2051.84	17.08	17.08	4103.68	20.53	15.95	15.31
2	Barren/ unculturable/ Wastelands	Sub Total -1	18.66	14.96	46905.60	66194.62	17.09	17.09	189985.76	57909.35	223.61	217.76
		Barren Rocky			6878.41	9501.75			19042.09	31.96		
		Gullied / Ravinous Land	0.07	0.07	228.27	144.87			305.53	22.17		
		Rann				48.47			145.40	45.66		
3	Builtup	Salt Affected Land			2.62	2.47			4.94	0.15		
		Sandy Area			25.62	22.89	0.62	0.62	45.98	1.59		
		Scrub Land	1.18	1.35	9736.98	5126.47			11464.90	1301.97	43.40	42.35
		Sub Total-2	1.25	1.42	16871.89	14846.92	0.62	0.62	31008.84	1403.49	43.40	42.35
4	Forest	Mining	0.12		566.70	2568.42			7690.16	2686.07	0.49	1.03
		Rural	2.79	2.90	3402.97	12971.99	0.03	0.03	38604.93	12715.73	0.25	1.74
		Urban	80.23	83.84	1959.12	533.89	5.33	5.33	1222.15	1037.92	25.97	30.86
		Sub Total-3	83.14	86.75	5928.79	16074.30	5.36	5.36	47517.24	16439.72	26.71	33.63
5	Grass / Grazing	Deciduous	8.75	8.59	26046.99	2530.63	8.90	8.90	5245.46	211.21	119.11	118.51
		Evergreen/Semi evergreen			11098.84	17294.68			40865.96	6293.13	6.87	6.85
		Forest Plantation			35.58	532.31			1591.12	601.73		
		Scrub Forest			6532.56	1663.64			3782.67	434.77	50.32	51.03
6	Snow and Glacier	Swamp / Mangroves			0.32	1972.45			5917.02	1969.28		
		Sub Total-4	8.75	8.59	43714.29	23993.72	8.90	8.90	57402.23	9510.12	176.30	176.38
		Grass / Grazing										
		Sub Total-5										
7	Wet lands / Water bodies	Snow and Glacier										
		Sub Total-6										
		Inland Wetland	0.02	0.02	24.99	341.67			1021.49	341.24		
		Coastal Wetland				156.06			468.17	139.22		
8	Water bodies	River/Stream/Canals	0.75	0.75	2344.91	4334.83			11989.81	3265.74	8.05	8.05
		Water bodies	1.43	1.52	1126.29	1536.85	0.02	0.02	4178.82	1265.47	12.88	12.82
		Sub Total-7	2.19	2.28	3496.20	6369.41	0.02	0.02	17658.29	5011.67	20.93	20.87
		Grand Total	114.00	114.00	116916.78	127478.96	32.00	32.00	343572.36	90274.35	490.96	491.00

Source: National Remote Sensing Centre, Government of India

Statement 1.25: State-wise area of wastelands

(Area in Sq. Kms.)

State	No of Districts	Total Geographic Area (TGA)	Total Waste Land (WL)		Change	Total Reduction	Total Increase	% of WL to TGA		% Change over 2005-06
			2005-06	2008-09				2005-06	2008-09	
Andhra Pradesh	23	275068	38788.22	37296.62	-1491.60	1682.10	190.46	14.10	13.56	-0.54
Arunachal Pradesh	16	83743	5743.83	14895.24	9151.41	108.48	9259.89	6.86	17.79	10.93
Assam	23	78438	8778.02	8453.86	-324.16	862.56	538.04	11.19	10.78	-0.41
Bihar	37	94171	6841.09	9601.01	2759.92	1895.09	4654.41	7.26	10.20	2.93
Chhattisgarh	16	135194	11817.82	11482.18	-335.64	379.06	43.15	8.74	8.49	-0.25
Delhi	1	1483	83.34	90.21	6.87	3.62	10.27	5.62	6.08	0.46
Goa	2	3702	496.27	489.08	-7.19	11.48	3.99	13.41	13.21	-0.19
Gujarat	25	196024	21350.38	20108.06	-1242.32	2858.99	1616.67	10.89	10.26	-0.63
Haryana	21	44212	2347.05	2145.98	-201.07	232.20	31.92	5.31	4.85	-0.45
Himachal Pradesh	12	55673	22470.05	22347.88	-122.17	197.25	75.57	40.36	40.14	-0.22
Jammu & Kashmir	14	101387	73754.38	75435.77	1681.39	1191.48	2872.78	72.75	74.40	1.66
Jharkhand	24	79706	11670.14	11017.38	-652.76	1183.50	531.16	14.64	13.82	-0.82
Karnataka	27	191791	14438.12	13030.62	-1407.50	1477.98	70.82	7.53	6.79	-0.73
Kerala	14	38863	2458.69	2445.62	-13.07	247.55	234.44	6.33	6.29	-0.03
Madhya Pradesh	48	308252	40042.98	40113.27	70.29	258.95	329.25	12.99	13.01	0.02
Maharashtra	35	307690	38262.81	37830.82	-431.99	469.93	38.22	12.44	12.30	-0.14
Manipur	9	22327	7027.47	5648.53	-1378.94	2391.10	1012.14	31.48	25.30	-6.18
Meghalaya	7	22429	3865.76	4127.43	261.67	93.86	355.13	17.24	18.40	1.17
Mizoram	8	21081	6021.14	4958.64	-1062.50	2669.27	1606.71	28.56	23.52	-5.04
Nagaland	7	16579	4815.18	5266.72	451.54	721.75	1172.60	29.04	31.77	2.72
Odisha	30	155707	16648.27	16425.76	-222.51	271.75	48.69	10.69	10.55	-0.14
Punjab	20	50362	1019.50	936.83	-82.67	112.70	30.56	2.02	1.86	-0.16
Rajasthan	32	342239	93689.47	84929.10	-8760.37	10264.60	1503.37	27.38	24.82	-2.56
Sikkim	4	7096	3280.88	3273.15	-7.73	11.83	4.29	46.24	46.13	-0.11
Tamil Nadu	30	130058	9125.56	8721.79	-403.77	426.78	22.74	7.02	6.71	-0.31
Tripura	4	10486	1315.17	964.64	-350.53	486.15	135.07	12.54	9.20	-3.34
Uttarakhand	13	53483	12790.06	12859.53	69.47	440.35	509.86	23.91	24.04	0.13
Uttar Pradesh	70	240928	10988.59	9881.24	-1107.35	1269.71	163.08	4.56	4.10	-0.46
West Bengal	19	88752	1994.41	1929.20	-65.21	92.98	28.46	2.25	2.17	-0.07
Union Territory	8	9490	337.30	315.00	-22.30	27.33	4.68	3.55	3.32	-0.23
Total	599	3166414	472261.95	467021.16	-5240.79	32340.38	27098.42	14.91	14.75	-0.17

Source: Wastelands Atlas of India 2011, Department of Land Resources, Ministry of Rural Development

Statement 1.26 : India's major biogeographic zones

No.	Name	Biotic Province	State Covered	Total Area (sq.km)	%
1	Trans Himalaya		Jammu and Kashmir,	174225	
		Ladakh	Himachal Pradesh,	98618	3.3
		Tibetan Plateau	Sikkim, Uttarakhand	75607	2.3
2	Himalaya		Jammu and Kashmir,	210385	
		North-Western	Himachal Pradesh,	69033	2.1
		Western	Uttarakhand, Sikkim,	52596	1.6
		Central	Arunachal Pradesh,	6575	0.2
		Eastern	West Bengal	82182	2.5
3	Desert		Rajasthan, Punjab,	213672	
		Kachchh	Haryana, Gujarat	36160	1.1
		Thar		177512	5.4
4	Semi-Arid		Punjab, Jammu and	545686	
		Central India	Kashmir, Rajasthan,	121629	3.7
		Gujarat-Rajputana	Gujarat, Madhya Pradesh, Uttar Pradesh, Haryana	424057	12.9
5	Western Ghats		Gujarat, Maharashtra,	131491	
		Malabar coast	Goa, Karnataka, Tamil Nadu, Kerala	65745	2.0
		Western Ghat Mountains		65745	2.0
6	Deccan Peninsula		Karnataka, Andhra Pradesh, Tamil Nadu,	1377363	
		Deccan South Plateau	Kerala, Odisha,	341875	10.4
		Deccan Central Plateau	Madhya Pradesh,	410908	12.5
		Eastern Plateau	Maharashtra	207098	6.3
		Chhota Nagpur		177512	5.4
		Central Highlands		239970	7.3
7	Gangetic Plain		Uttar Pradesh, Bihar,	355024	
		Upper Gangetic	West Bengal	207098	6.3
		Lower Gangetic		147927	4.5
8	Coasts			82182	
		East Coast		62458	1.9
		West Coast		19724	0.6
9	North East		Assam, Meghalaya,	170938	
		Brahmaputra Valley	Manipur, Mizoram,	65745	2.0
		North-Eastern Hills	Nagaland & Tripura	105192	3.2
10	Island		Andaman and	12971	
		Andaman Islands	Nicobar Islands,	6575	0.2
		Nicobar Islands	Lakshadweep	3287	0.1
		Lakshadweep Islands		3110	0.1
	Marine Influenced Area			10440	0.3
Grand Total				3287263	

Source: Wildlife Institute of India (Rodgers et al. 2002)/Zoological Survey of India

Rodgers, W.A., Panwar, H.S. and Mathur, V. B. (2002). Wildlife Protected Area Network in India: A Review (Executive summary), Wildlife Institute of India, Dehradun

Statement 1.27 : Conservation Measures in India

S.no	Category	Number	Total Geographic Area (km ²)
I	Within Habitats (in situ)		
1	Biosphere Reserves ++	18	91272.22
2	Conservation Reserves ++	73	2547.16
3	community Reserves ++	45	59.66
4	National Parks ++	103	40500.13
5	Wildlife Sanctuaries ++	543	118918
6	Reserve Forest+	na	434705
7	Protected Forest +	na	219432
8	Unclassed Forest +	na	113881
II	Outside Habitats (ex situ)		
1	Botanical gardens **	131	na
2	Gene banks	na	na

Source:

++ National Wildlife Database of Wildlife Institute of India;

+ 'State of Forest Report - 2017', Forest Survey of India

** BGCI Website

Statement 1.28 : National Parks and Wildlife Sanctuaries of India

Year	National Parks		Wildlife Sanctuaries		Total Area (Sq.Km)
	Number	Area	Number	Area	
1995	80	34684.53	441	114164.58	148849.11
1999	87	34021.15	485	113163.03	147184.18
2004	90	36881.53	502	120051.88	156933.41
2006	100	38024.11	514	117913.77	155980.15
2010	102	39888.00	515	119930.00	159818.00
2014	102	39888.00	517	120208.00	160096.00
2015	103	40500.00	531	117607.00	158107.00
2016	103	40500.13	535	118004.00	158504.13
2017	103	40500.58	543	118917.00	159417.58

Source: ENVIS Centre on Wildlife and Protected Area, M/o Environment, Forests & Climate Change

Statement 1.29 : State-wise Terrestrial Protected Areas

Sr. No	State	State Area km ²	National Parks			Wildlife Sanctuaries		
			No.	Area km ²	% of State Area	No.	Area km ²	% of State Area
1	Andhra Pradesh	160,205	2	356.02	0.22	13	5,942.23	3.71
2	Arunachal Pradesh	83,743	2	2,290.82	2.74	11	7,487.75	8.94
3	Assam	78,438	5	1,977.79	2.52	18	1,840.14	2.35
4	Bihar	94,163	1	335.65	0.36	12	2,901.67	3.08
5	Chhattisgarh	135,191	3	2,899.08	2.14	11	3,760.29	2.78
6	Goa	3,702	1	107	2.89	6	6,47.91	17.5
7	Gujarat	196,022	4	480.12	0.24	23	16,618.42	8.48
8	Haryana	44,212	2	48.25	0.11	8	2,33.21	0.53
9	Himachal Pradesh	55,673	5	2,271.38	4.08	28	6,116.10	10.99
10	Jammu & Kashmir	222,236	4	3,925.00	1.77	15	10,243.11	4.61
11	Jharkhand	79,714	1	226.33	0.28	11	1,955.82	2.45
12	Karnataka	191,791	5	2,795.76	1.46	30	6,774.81	3.53
13	Kerala	38,863	6	558.16	1.44	17	1,928.24	4.96
14	Madhya Pradesh	308,245	9	3,656.36	1.19	25	7,158.42	2.32
15	Maharashtra	307,713	6	1,273.60	0.41	42	7,604.44	2.47
16	Manipur	22,327	1	40	0.18	2	184.81	0.83
17	Meghalaya	22,429	2	267.48	1.19	4	94.1	0.42
18	Mizoram	21,081	2	150	0.71	8	1,090.75	5.17
19	Nagaland	16,579	1	202.02	1.22	3	20.34	0.12
20	Odisha	155,707	2	990.7	0.64	19	7,094.65	4.56
21	Punjab	50,362	0	0	0	13	3,26.60	0.65
22	Rajasthan	342,239	5	3,947.07	1.15	25	5,592.38	1.63
23	Sikkim	7,096	1	1,784.00	25.14	7	3,99.10	5.62
24	Tamil Nadu	130,058	5	307.85	0.24	29	6,157.12	4.73
25	Telangana	114,840	5	1,032.47	0.9	9	5,675.91	4.94
25	Tripura	10,486	2	36.71	0.35	4	5,66.93	5.41
26	Uttar Pradesh	240,928	1	490	0.2	25	5,828.36	2.42
27	Uttarakhand	53,483	6	4,915.02	9.19	7	2,690.12	5.03
28	West Bengal	88,752	6	1,981.65	2.23	15	1,442.12	1.62
29	A& N Islands	8,249	9	1,153.94	13.99	96	389.39	4.72
30	Chandigarh	114	0	0	0	2	26.01	22.82
31	D&N Haveli	491	0	0	0	1	92.16	18.77
33	Daman & Diu	112	0	0	0	1	2.19	1.96
34	Delhi	1,483	0	0	0	1	27.82	1.88
32	Lakshadweep	32	0	0	0	1	0.01	0.03
35	Puducherry	480	0	0	0	1	3.9	0.81
	Total	32,87,263	103	40,500.13	1.23	543	1,18,918	3.62

Source: Annual Report, Ministry of Environment, Forests & Climate Change
 State-wise break up of NPA & Wildlife Sanctuaries (As on July, 2017)

Statement 1.30: Biosphere Reserves in India

Sl. No.	Name of Biosphere Reserve	Area (in sq.km.)	Date of Notification	Location (State) and Bio-Geographic Zones
1	Nilgiri	5520.00	01.08.1986	Part of Wynad, Nagarhole, Bandipur and Mudumalai, Nilambur, Silent Valley and Siruvani hills (Tamil Nadu, Kerala and Karnataka)-Western Ghats
2	Nanda Devi	5860.69	18.01.1988	Part of Chamoli, Pithoragarh & Almora Districts and valley of flowers (Uttarakhand)-West Himalayas
3	Nokrek	820.00	01.09.1988	Part of Garo Hills (Meghalaya)-East Himalayas
4	Manas	2837.00	14.03.1989	Part of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darang districts (Assam)-East Himalayas
5	Sunderbans	9630.00	29.03.1989	Part of Delta of Ganges & Barahmaputra river system (West Bengal)-Gigantic Delta
6	Gulf of Mannar	10500.00	18.02.1989	Indian part of Gulf of Mannar between India and Sri Lanka (Tamil Nadu)-Coasts
7	Great Nicobar	885.00	06.01.1989	Southern Most Islands of Andaman and Nicobar (A&N Islands)-Islands
8	Similipal	4374.00	21.06.1994	Part of Mayurbhanj district (Orissa)-Deccan Peninsula
9	Dibru-Saikhowa	765.00	28.07.1997	Part of Dibrugarh and Tinsukhia districts (Assam)-East Himalayas
10	Dehang Debang	5111.50	02.09.1998	Part of Siang and Debang Valley in Arunachal Pradesh-East Himalayas
11	Pachmarhi	4926.00	03.03.1999	Part of Betul, Hoshangabad and Chindwara Districts of Madhya Pradesh-Semi-Arid-Gujarat Rajputana
12	Kanchanjunga	2619.92	07.02.2000	Parts of North and West Sikkim
13	Agasthyamalai	1828.00	12.11.2001	Part of Thirunelveli and Kanya Kumari Districts in Tamil Nadu and Thiruvananthapuram, Kollam and Pathanamthita of Kerala (Tamil Nadu & Kerala)
14	Achankmar-Amarkantak	3835.51	30.3.2005	Part of Anuppur and Dindori Distt., of MP, part of Bilaspur distts., of Chhattisgarh State (Madhya Pradesh & Chattisgarh)
15	Kachchh	12454.00	29.01.2008	Parts of Kachchh, Rajkot, Surendranagar and Patan Civil Districts of Gujarat State
16	Cold Desert	7770.00	28.08.09	Pin Valley National Park and surroundings; Chandratal and Sarchu & Kibber Wildlife Sanctuary in Himachal Pradesh.
17	Seshachalam	4756.00	20.09.2010	Seshachalam hill range in Eastern Ghats encompassing part of Chittoor and Kadapa district in Andhra Pradesh
18	Panna	2998.98	25.08.2011	Part of Panna and Chhattarpur district in Madhya Pradesh

Source: Ministry of Environment, Forests & Climate Change

Statement 1.31 : State-wise Location of Major Zoos

Sl. No	State	Name of Zoo	Location
1	Andaman & Nicobar Islands	Biological Park, Chidyatapu	Port Blair
2	Andhra Pradesh	Indira Gandhi Zoological Park	Visakhapatnam
3		Nehru Zoological Park	Hyderabad
4		Sri Venkateswara Zoological Park	Tirupati
5	Arunachal Pradesh	Biological Park Itanagar	Itanagar
6	Assam	Assam State Zoo Cum Botanical Garden	Guwahati
7	Bihar	Sanjay Gandhi Biological Park	Patna
8	Chhattisgarh	Kanan Pandari Zoo	Bilaspur
9		Maitri Baagh Zoo	Bhilai
10	Delhi	National Zoological Park	Delhi
11	Goa	Bondla Zoo	Usgao
12	Gujarat	Dr. Shyamaprasad Mukharjee Zoological Garden	Surat
13		Indoda Nature Park	Gandhi Nagar
14		Kamla Nehru Zoological Garden	Ahemdabad
15		Sakkarbaug Zoo	Junagarh
16		Sayaji Baug Zoo	Vadodara
17	Haryana	Rohtak Zoo	Rohtak
18	Himachal Pradesh	Himalayan Nature Park (Kufri)	Kufri
19	Jammu & Kashmir	Jammu Zoo	Ram Nagar, Jammu
20		Kashmir Zoo	Srinagar
21	Jharkhand	Bhagwan Birsa Biological Park	Ranchi
22		Jawaharlal Nehru Biological Park	Bokaro
23		Tata Steel Zoological Park	Jamshedpur
24	Karnataka	Bellary Childrens Park-Cum-Zoo (Bellary Zoo)	Bellary
25		Children Park & Zoo (Gadag Zoo)	Gadag
26		Dr. K.Shivarma Karanth Pilikula Biological Park	Mangalore
27		National Park, Bannerghatta Zoological Garden	Bangalore
28		Sri Chamarajendra Zoological Gardens	Mysore
29		Tiger & Lion Safari, Thyarekoppa	Shimoga
30	Kerala	State Museum & Zoo	Thrissur
31		Thiruvananthapuram Zoo	Thiruvananthapuram
32	Madhya Pradesh	Gandhi Zoological Park	Gwalior
33		Kamla Nehru Prani Sangrahalay Zoo	Indore
34		Van Vihar National Park	Bhopal

Contd.

Statement 1.31 : State-wise Location of Major Zoos

Sl. No	State	Name of Zoo	Location
35	Maharashtra	Aurangabad Municipal Zoo	Aurangabad
36		Mahatma Gandhi Rashtriya Udyan Zoo	Solapur
37		Nisargakavl Bahlnabai Choudhary Pranisansangahralay	Pune
38	Maharashtra	Rajiv Gandhi Zoological Park And Wildlife Research Centre	Pune
39		Veermata Jijabai Bhosale Udyan & Zoo	Mumbai
40	Manipur	Manipur Zoological Garden	Imphal
41	Meghalaya	Lady Hydari Park Animal	Shillong
42	Mizoram	Aizawl Zoo (Mizoram Zoo)	Aizwal
43	Odisha	Indira Gandhi Park Zoo & Deer Park	Rourkela
44		Nandankanan Biological Park	Bhubaneswar
45		Wild Animal Conservation Centre	Mothijharan Sambalpur
46	Punjab	Deer Park, Bir Moti Bagh (patiala Zoo)	Patiala
47		Ludhiana Zoo	Ludhiana
48		Mahendra Chaudhury Zoological Park	Chhatbir
49	Rajasthan	Bikaner Zoo	Bikaner
50		Jaipur Zoo	Jaipur
51		Jodhpur Zoo	Jodhpur
52		Udaipur Zoo	Udaipur
53	Tamil Nadu	Amirdhi Zoo	Vellore
54		Arignar Anna Zoological Park	Vandalur Chennai
55		Chennai Snake Park Trust	Guindy
56		Children's Corner	Guindy
57		Madras Crocodile Bank Trust/Centre For Herpetology	Mahabalipuram
58		V.O.C. Park Mini Zoo	Coimbatore
59	Tripura	Sepahijala Zoological Park	Sepahijala
60	Uttar Pradesh	Kanpur Zoological Park	Kanpur
61		Lucknow Prani Udyan	Lucknow
62	Uttarakhand	Pt Govind Ballabh Pant High Altitude Zoo	Nainital
63	West Bengal	Alipore Zoological Garden	Kolkata
64		Calcutta Snake Park	Badu
65		Jhargram Zoo	Jhargram
66		Marble Palace Zoo	Kolkata
67		Padmaja Naidu Himalayan Zoological Park	Darjeeling

Source : Central Zoo Authority, Ministry of Environment, Forest and Climate Change

Statement 1.32: Marine Protected Areas
(a) Marine Protected Areas in Peninsular India

S. No.	Name of MPA	State	Category	Area	Year of establishment
1	Coringa	Andhra Pradesh	Sanctuary	235.7	1978
2	Krishna	Andhra Pradesh	Sanctuary	194.81	1989
3	Pulicat Lake	Andhra Pradesh	Sanctuary	500	1980
4	Dadra & Nagar Haveli	Dadra & Nagar Haveli	Sanctuary	92.16	2000
5	Fudam	Daman & Diu	Sanctuary	2.18	1991
6	Chorao Island	Goa	Sanctuary	1.78	1988
7	Marine (Gulf of Kachchh)	Gujarat	National Park	162.89	1995
8	Khijadia	Gujarat	Sanctuary	6.05	1981
9	Marine (Gulf of Kachchh)	Gujarat	Sanctuary	295.03	1980
10	Kadalundi Vallikkunnu Community Reserve	Kerala	Community Reserve	1.5	2007
11	Malvan Marine	Maharashtra	Sanctuary	29.12	1987
12	Thane Creek Flamingo	Maharashtra	Sanctuary	16.905	2015
13	Bhitarkanika	Odisha	National Park	145	1998
14	Bhitarkanika	Odisha	Sanctuary	672	1975
15	Chilka (Nalaban)	Odisha	Sanctuary	15.53	1987
16	Gahirmatha	Odisha	Sanctuary	1435	1997
17	Balukhand Konark	Odisha	Sanctuary	71.72	1984
18	Gulf of Mannar Marine	Tamil Nadu	National Park	6.23	1980
19	Point Calimere	Tamil Nadu	Sanctuary	172.6	1967
20	Pulicat Lake	Tamil Nadu	Sanctuary	153.67	1980
21	Sundarbans	West Bengal	National Park	1330.1	1984
22	West Sundarbans	West Bengal	Sanctuary	556.45	2013
23	Haliday Island	West Bengal	Sanctuary	5.95	1976
24	Sajnakhali	West Bengal	Sanctuary	2091.12	1976
25	Lothian Island	West Bengal	Sanctuary	38	1976

**excluding small island MPAs of Andaman and Nicobar Islands*

Source: K Sivakumar, *Coastal and Marine Biodiversity Protected Areas in India: Challenges and Way Forward*, K. Venkataraman et al. (eds.), Ecology and Conservation of Tropical Marine Faunal Communities, Springer-Verlag Berlin Heidelberg 2013.

Statement 1.32: Marine Protected Areas
(b) Marine Protected Areas in Islands of India

Sl.No.	PA Name	State	National Park/ Sanctuary	Area	Year of establishment
1	Arial Island	Andaman & Nicobar	Sanctuary	0.05	1977
2	Bamboo Island	Andaman & Nicobar	Sanctuary	0.05	1977
3	Barren Island	Andaman & Nicobar	Sanctuary	11.99	1977
4	Battimalv Island	Andaman & Nicobar	Sanctuary	5.03	1977
5	Belle Island	Andaman & Nicobar	Sanctuary	0.08	1977
6	Bennett Island	Andaman & Nicobar	Sanctuary	3.46	1977
7	Bingham Island	Andaman & Nicobar	Sanctuary	0.08	1977
8	Blister Island	Andaman & Nicobar	Sanctuary	0.26	1977
9	Bluff Island	Andaman & Nicobar	Sanctuary	1.14	1977
10	Bondoville Island	Andaman & Nicobar	Sanctuary	2.55	1977
11	Brush Island	Andaman & Nicobar	Sanctuary	0.23	1977
12	Buchanan Island	Andaman & Nicobar	Sanctuary	9.33	1977
13	Campbell	Andaman & Nicobar	National Park	426.23	1992
14	Chanel Island	Andaman & Nicobar	Sanctuary	0.13	1977
15	Cinque Islands	Andaman & Nicobar	Sanctuary	9.51	1977
16	Clyde Island	Andaman & Nicobar	Sanctuary	0.54	1977
17	Cone Island	Andaman & Nicobar	Sanctuary	0.65	1977
18	Curlew (B.P.) Island	Andaman & Nicobar	Sanctuary	0.16	1977
19	Curlew Island	Andaman & Nicobar	Sanctuary	0.03	1977
20	Defence Island	Andaman & Nicobar	Sanctuary	10.49	1977
21	Dot Island	Andaman & Nicobar	Sanctuary	0.13	1977
22	Dottrell Island	Andaman & Nicobar	Sanctuary	0.13	1977
23	Duncan Island	Andaman & Nicobar	Sanctuary	0.73	1977
24	East Island	Andaman & Nicobar	Sanctuary	6.11	1977
25	East Of Inglis Island	Andaman & Nicobar	Sanctuary	3.55	1977
26	Egg Island	Andaman & Nicobar	Sanctuary	0.05	1977
27	Elat Island	Andaman & Nicobar	Sanctuary	9.36	1977
28	Entrance Island	Andaman & Nicobar	Sanctuary	0.96	1977
29	Galathea	Andaman & Nicobar	National Park	110	1992
30	Gander Island	Andaman & Nicobar	Sanctuary	0.05	1977
31	Girjan Island	Andaman & Nicobar	Sanctuary	0.16	1977
32	Goose Island	Andaman & Nicobar	Sanctuary	0.01	1977
33	Hump Island	Andaman & Nicobar	Sanctuary	0.47	1977
34	Interview Island	Andaman & Nicobar	Sanctuary	133.87	1977
35	James Island	Andaman & Nicobar	Sanctuary	2.1	1977
36	Jungle Island	Andaman & Nicobar	Sanctuary	0.52	1977
37	Kyd Island	Andaman & Nicobar	Sanctuary	8.00	1977

Contd.

Statement 1.32: Marine Protected Areas
(b) Marine Protected Areas in Islands of India

Sl.No.	PA Name	State	National Park/ Sanctuary	Area	Year of establishment
38	Landfall Island	Andaman & Nicobar	Sanctuary	29.48	1977
39	Latouche Island	Andaman & Nicobar	Sanctuary	0.96	1977
40	Lohabarrack	Andaman & Nicobar	Sanctuary	22.21	1977
41	Mahatma Gandhi Marine	Andaman & Nicobar	National Park	281.5	1983
42	Mangrove Island	Andaman & Nicobar	Sanctuary	0.39	1977
43	Mask Island	Andaman & Nicobar	Sanctuary	0.78	1977
44	Mayo Island	Andaman & Nicobar	Sanctuary	0.10	1977
45	Megapode Island	Andaman & Nicobar	Sanctuary	0.12	1977
46	Middle Button Island	Andaman & Nicobar	National Park	0.44	1987
47	Montogemery Island	Andaman & Nicobar	Sanctuary	0.21	1977
48	Mount Harriett	Andaman & Nicobar	National Park	46.62	1987
49	Narcondam Island	Andaman & Nicobar	Sanctuary	6.81	1977
50	North Brother Island	Andaman & Nicobar	Sanctuary	0.75	1977
51	North Button Island	Andaman & Nicobar	National Park	0.44	1987
52	North Island	Andaman & Nicobar	Sanctuary	0.49	1977
53	North Reef Island	Andaman & Nicobar	Sanctuary	3.48	1977
54	Oliver Island	Andaman & Nicobar	Sanctuary	0.16	1977
55	Orchid Island	Andaman & Nicobar	Sanctuary	0.10	1977
56	Ox Island	Andaman & Nicobar	Sanctuary	0.13	1977
57	Oyster Island-I	Andaman & Nicobar	Sanctuary	0.08	1977
58	Oyster Island-II	Andaman & Nicobar	Sanctuary	0.21	1977
59	Paget Island	Andaman & Nicobar	Sanctuary	7.36	1977
60	Parkinson Island	Andaman & Nicobar	Sanctuary	0.34	1977
61	Passage Island	Andaman & Nicobar	Sanctuary	0.62	1977
62	Patric Island	Andaman & Nicobar	Sanctuary	0.13	1977
63	Peacock Island	Andaman & Nicobar	Sanctuary	0.62	1977
64	Pitman Island	Andaman & Nicobar	Sanctuary	1.37	1977
65	Point Island	Andaman & Nicobar	Sanctuary	3.07	1977
66	Potanma Islands	Andaman & Nicobar	Sanctuary	0.16	1977
67	Ranger Island	Andaman & Nicobar	Sanctuary	4.26	1977
68	Rani Jhansi	Andaman & Nicobar	National Park	256.14	1996
69	Reef Island	Andaman & Nicobar	Sanctuary	1.74	1977
70	Roper Island	Andaman & Nicobar	Sanctuary	1.46	1977
71	Ross Island	Andaman & Nicobar	Sanctuary	1.01	1977
72	Rowe Island	Andaman & Nicobar	Sanctuary	0.01	1977
73	Saddle Peak	Andaman & Nicobar	National Park	32.54	1987
74	Sandy Island	Andaman & Nicobar	Sanctuary	1.58	1977

Contd.

Statement 1.32: Marine Protected Areas
(b) Marine Protected Areas in Islands of India

Sl.No.	PA Name	State	National Park/ Sanctuary	Area	Year of establishment
75	Sea Serpent Island	Andaman & Nicobar	Sanctuary	0.78	1977
76	Shark Island	Andaman & Nicobar	Sanctuary	0.60	1977
77	Shearme Island	Andaman & Nicobar	Sanctuary	7.85	1977
78	Sir Hugh Rose Island	Andaman & Nicobar	Sanctuary	1.06	1977
79	Sisters Island	Andaman & Nicobar	Sanctuary	0.36	1977
80	Snake Island-I	Andaman & Nicobar	Sanctuary	0.73	1977
81	Snake Island-II	Andaman & Nicobar	Sanctuary	0.03	1977
82	South Brother Island	Andaman & Nicobar	Sanctuary	1.24	1977
83	South Button Island	Andaman & Nicobar	National Park	0.03	1987
84	South Reef Island	Andaman & Nicobar	Sanctuary	1.17	1977
85	South Sentinel Island	Andaman & Nicobar	Sanctuary	1.61	1977
86	Spike Island-I	Andaman & Nicobar	Sanctuary	0.42	1977
87	Spike Island-II	Andaman & Nicobar	Sanctuary	11.70	1977
88	Stoat Island	Andaman & Nicobar	Sanctuary	0.44	1977
89	Surat Island	Andaman & Nicobar	Sanctuary	0.31	1977
90	Swamp Island	Andaman & Nicobar	Sanctuary	4.09	1977
91	Table (Delgarno) Island	Andaman & Nicobar	Sanctuary	2.29	1977
92	Table (Excelsior) Island	Andaman & Nicobar	Sanctuary	1.69	1977
93	Talabaicha Island	Andaman & Nicobar	Sanctuary	3.21	1977
94	Temple Island	Andaman & Nicobar	Sanctuary	1.04	1977
95	Tillongchang Island	Andaman & Nicobar	Sanctuary	36.43	1977
96	Tree Island	Andaman & Nicobar	Sanctuary	0.03	1977
97	Trilby Island	Andaman & Nicobar	Sanctuary	0.96	1977
98	Tuft Island	Andaman & Nicobar	Sanctuary	0.29	1977
99	Turtle Islands	Andaman & Nicobar	Sanctuary	0.39	1977
100	Kwangtung Island	Andaman & Nicobar	Sanctuary	0.57	1987
101	West Island	Andaman & Nicobar	Sanctuary	6.40	1977
102	Wharf Island	Andaman & Nicobar	Sanctuary	0.11	1977
103	White Cliff Island	Andaman & Nicobar	Sanctuary	0.47	1977
104	Galathea Bay	Andaman & Nicobar	Sanctuary	11.44	1997
105	Cuthbert Bay	Andaman & Nicobar	Sanctuary	5.82	1997
106	Pitti	Lakshadweep	Sanctuary	0.01	2002

Source: K Sivakumar, *Coastal and Marine Biodiversity Protected Areas in India: Challenges and Way Forward*, K. Venkataraman et al. (eds.), Ecology and Conservation of Tropical Marine Faunal Communities, Springer-Verlag Berlin Heidelberg 2013.

Statement 1.33: Number of threatened species at global level by major groups of organisms

	Estimated Number of described species ¹	Number of species evaluated by 2016 (IUCN Red List version 2016-3)	Number of threatened species ²								2017 (IUCN Red List version 2017-1)
			2010 (IUCN Red List version 2010-4)	2011 (IUCN Red List version 2011-2)	2012 (IUCN Red List version 2012-2)	2013 (IUCN Red List version 2013-2)	2014 (IUCN Red List version 2014-3)	2015 (IUCN Red List version 2015-4)	2016 (IUCN Red List version 2016-3)		
Vertebrates											
Mammals ⁵	5567	5567	1131	1138	1139	1143	1199	1197	1194	1194	
Birds	11121	11121	1240	1253	1313	1308	1373	1375	1460	1460	
Reptiles	10450	5338	594	772	807	879	927	944	1079	1090	
Amphibians	7571	6534	1898	1917	1933	1950	1957	1994	2068	2067	
Fishes	33400	16134	1851	2028	2058	2110	2222	2271	2359	2359	
Subtotal	68109	44694	6714	7108	7250	7390	7678	7781	8160	8170	
Invertebrates											
Insects	1000000	6587	733	741	829	896	993	1046	1268	1298	
Molluscs	85000	7276	1288	1673	1857	1898	1950	1950	1984	1984	
Crustaceans ⁶	47000	3177	596	596	596	723	725	728	732	732	
Corals	2175	862	235	235	236	235	235	237	237	237	
Arachnids	102248	212	19	19	20	21	163	164	166	170	
Velvet Worms	165	11	9	9	9	9	9	9	9	9	
Horseshoe Crabs	4	4	0	0	0	0	0	0	1	1	
Other	68658	480	24	24	23	40	65	67	73	122	
Subtotal	1305250	18609	2904	3297	3570	3822	4140	4201	4470	4553	
Plants⁷											
Mosses ⁸	16236	102	80	80	76	76	76	76	76	76	
Ferns and Allies ⁹	12000	417	148	163	167	187	194	197	217	217	
Gymnosperms	1052	1011	371	377	374	399	400	400	400	400	
Flowering Plants	268000	20652	8116	8527	8764	9394	9905	10551	10941	10972	
Green Algae ¹⁰	6050	13	0	0	0	0	0	0	0	0	
Red Algae ¹⁰	7104	58	9	9	9	9	9	9	9	9	
Subtotal	310442	22253	8724	9156	9390	10065	10584	11233	11643	11674	
Fungi & Protists											
Lichens	17000	8	2	2	2	7	4	7	7	7	
Mushrooms	31496	25	1	1	1	21	1	22	21	21	
Brown Algae ¹⁰	3784	15	6	6	6	6	6	6	6	6	
Subtotal	52280	48	9	9	9	34	11	35	34	34	
Total	1736081	85604	18351	19570	20219	21311	22413	23250	24307	24431	

Source : IUCN Website

Contd.

NOTES (for rows and columns as indicated by the superscripted numbers):

1. The sources used for the numbers of described species in each taxonomic group are listed below
2. Threatened species are those listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU).
3. Where <80% of species within a group have been evaluated, figures for % threatened species are not provided because there is insufficient coverage for these groups. It is only possible to provide reliable figures for % threatened species for those groups that are completely or almost completely evaluated (e.g., mammals, birds, amphibians and gymnosperms).
4. The percentage of threatened species can be calculated for those groups that are completely or almost completely evaluated (>80% of species evaluated), but the actual number of threatened species is often uncertain because it is not known whether Data Deficient (DD) species are actually threatened or not. Therefore, a range of percentages is provided: lower estimate = % threatened extant species (if all DD species are not threatened); best estimate = % threatened extant species (if DD species are equally threatened as data sufficient species); upper estimate = % threatened extant species (if all DD species are threatened). If a single figure is required for reporting purposes, the best estimate figure should be used.
5. The number of described and evaluated mammals excludes domesticated species like sheep (*Ovis aries*), goats (*Capra hircus*), Dromedary (*Camelus dromedarius*), etc.
6. Crustaceans include six classes: Malacostraca (crabs, lobsters, shrimp, woodlice, etc.); Branchiopoda (fairy shrimp, clam shrimp, etc.); Cephalocardia (horseshoe shrimp); Ostracoda (seed shrimp); Maxillopoda (barnacles, copepods, etc.); and Remipedia (remipedes)
7. The plant numbers DO NOT include species from the 1997 IUCN Red List of Threatened Plants (Walter and Gillett 1998) as those were all assessed using the pre-1994 IUCN system of threat categorization. Hence the numbers of threatened plants are very much lower when compared to the 1997 results. The results from this Red List and the 1997 Plants Red List should be combined together when reporting on threatened plants.
8. Mosses include the true mosses (Bryophyta), the hornworts (Anthocerotophyta), and liverworts (Marchantiophyta).
9. The ferns and allies include club mosses and spike mosses (Lycopodiopsida), quillworts (Isoetopsida), horsetails (Equisetopsida) and ferns (Marattiopsida, Polypodiopsida and Psilotopsida).
10. Seaweeds are included in the green algae (Chlorophyta, Charophyta), red algae (Rhodophyta), and brown algae (Ochrophyta or Heterokontophyta).

Statement 1.34 : Category -wise status summary of plants at global level

STATUS	IUCN Red List version 2010	IUCN Red List version 2011.1	IUCN Red List version 2012.1	IUCN Red List version 2013.1	IUCN Red List version 2014.2	IUCN Red List version 2015.2	IUCN Red List version 2016.2	IUCN Red List version 2017-2
1	2	3	4	5	6	7	8	9
Extinct	86	87	91	90	97	99	105	116
Extinct in the Wild	28	31	31	29	37	37	37	35
Critically Endangered	1581	1716	1752	1920	2104	2205	2484	2637
Endangered,	2318	2528	2572	2871	3178	3381	3643	3921
Vulnerable,	4605	4854	4869	5038	5203	5310	5435	5544
Near Threatened (includes LR/nt - Lower Risk/near threatened)	1077	1230	1246	1447	1544	1583	1645	1709
Lower Risk/conservation dependent,	237	225	224	211	210	209	209	204
Data Deficient	744	1011	1070	1358	1526	1599	1674	1841
Least Concern (includes LR/lc - Lower Risk, least concern).	1531	2507	2727	4640	5481	5762	6635	7067
TOTAL	12207	14189	14582	17604	19380	20185	21867	23074

Source : Botanical Survey of India

Statement 1.35: Category-wise plants summary by major taxonomic group

(Including algae, Fungi and Lichens) (IUCN Red list version 2017-2)

CLASS*	EX	EW	CR	EN	VU	LR/ cd	NT	DD	LC	Total
ANTHOCEROTOPSIDA	0	0	0	2	0	0	0	0	0	2
BRYOPSIDA	2	0	12	13	7	0	1	3	3	41
CHAROOHYACEAE	0	0	0	0	0	0	0	3	8	11
CHLOROPHYCEAE	0	0	0	0	0	0	0	1	0	1
CYCADOPSIDA	0	4	53	65	74	0	63	3	45	307
FLORIDEOPHYCEAE	1	0	6	0	3	0	0	44	4	58
GINKGOOPSIDA	0	0	0	1	0	0	0	0	0	1
GNETOPSIDA	0	0	0	1	3	0	7	10	76	97
JUNGERMANNIOPSIDA	1	0	10	11	12	0	1	0	10	45
LILIOPSIDA	4	4	445	675	636	16	277	498	2108	4663
LYCOPODIOPSIDA	0	0	13	11	16	0	9	8	28	85
MAGNOLIOPSIDA	106	26	2007	2975	4632	188	1299	1106	4379	16718
MARATTIOPSIDA	0	0	1	0	0	0	0	0	0	1
MARCHANTIOPSIDA	0	0	1	3	2	0	0	4	1	11
PINOPSIDA	0	0	29	96	79	0	98	7	298	607
POLYPODIOPSIDA	2	1	61	68	77	0	24	53	107	393
PSILOTOPSIDA	0	0	1	0	0	0	0	0	3	4
SPHAGNOPSIDA	0	0	0	0	2	0	0	0	0	2
TAKAKIOPSIDA	0	0	0	0	1	0	0	0	0	1
ULVOPHYCEAE	0	0	0	0	0	0	0	1	0	1
TOTAL	116	35	2639	3921	5544	204	1709	1841	7067	23074
OTHER GROUPS										
AGARICOMYCETES	0	0	3	8	11	0	2	1	0	25
LECANOROMYCETES	0	0	3	3	2	0	1	0	0	8
PEZIZOMYCETES	0	0	0	0	0	0	1	0	0	1
PHAEOPHYCEAE	0	0	4	1	1	0	0	9	0	15
TOTAL	0	0	9	12	14	0	4	10	0	49

Source : ENVIS-Botanical Survey of India

*Plants: Anthocerotopsida (hornworts); Bryopsida, Sphagnopsida and Takakiopsida (true mosses); Charophyceae, Chlorophyceae and Ulvophyceae (green algae); Cycadopsida (cycads); Equisetopsida (horsetails); Florideophyceae (red algae); Ginkgoopsida (ginkgo); Gnetopsida (gnetums); Isoetopsida (quillworts); Jungermanniopsida and Marchantiopsida (liverworts); Liliopsida (monocotyledons); Lycopodiopsida (club mosses and spike mosses); Magnoliopsida (dicotyledons); Marattiopsida, Polypodiopsida and (ferns); Pinopsida (conifers).

Other groups: Agaricomycetes (mushroom, etc.); Lecanoromycetes (discolichens); Pezizomycetes (apothecial fungi); Phaeophyceae (brown algae).

EX - Extinct

EW - Extinct in the Wild CR - Critically Endangered EN - Endangered

VU - Vulnerable

LR/cd - Lower Risk/conservation dependent

NT - Near Threatened

DD - Data Deficient

LC - Least Concern (includes LR/lc - Lower Risk, Least Concern).

Statement 1.36 : Number and status of plant species in India

Sl. No.	Type	No. of Known Species				Percentage of Occurrence in India				No. of Endemic Species in India				No. of Threatened Species in India				
		World		India		2013	2014	2015	2017	2013	2014	2015	2017	2013	2014	2015	2017	
		2013	2014	2015	2017													
I Flowering Plants																		
1	Gymnosperms	1021	74	75	78	79	7.25	7.35	7.64	7.73	8	8	8	12	7	7	7	
2	Angiosperms	268600	17926	18043	18259	18386	6.67	6.72	6.80	6.84	ca. 4045	ca. 4036	4036	4303	1700	1700	1700	
II Non-flowering Plants																		
1	Bryophytes	16236	2504	2523	2550	2748	15.42	15.54	15.71	16.92	629	629	629	629	ca.80	ca.80	c.80	
2	Pteridophytes	12000	1265	1268	1288	1289	10.54	10.57	10.73	10.74	47	47	47	66	414	414	414	
III Others																		
1	Virus & Bacteria	11813	986	1036	1120	1170	8.35	8.77	9.48	9.90	Not Known							Not Known
2	Algae	40000	7244	7284	7331	7357	18.11	18.21	18.33	18.39	1924	1924	1924	1924	Not Known		Not Known	
3	Fungi	98998	14756	14883	15053	15115	14.91	15.03	15.21	15.26	ca.4100	ca.4100	ca.4100	c. 4100	ca.580	ca.580	ca.580	
4	Lichens	17000	2390	2401	2479	2511	14.06	14.12	14.58	14.77	ca.520	ca.520	ca.520	c.520	Not Known		Not Known	

Source : Botanical Survey of India, Kolkata.

Statement 1.37 : State-wise distribution of threatened wetland flora and fauna

State	Endemic plants	Threatened birds	Threatened fishes	Threatened turtles
Tamil Nadu	46	3	35	4
Kerala	65	0	37	3
Karnataka	64	5	15	2
Goa	17	0	15	0
Andhra Pradesh	13	6	19	2
Odisha	6	0	22	6
Madhya Pradesh & Chhattisgarh	20	5	16	7
Maharashtra	69	2	19	3
Gujarat	11	6	12	1
Rajasthan	9	6	17	3
Haryana	0	6	15	1
Punjab	0	4	15	5
Jammu & Kashmir	2	2	20	2
Himachal Pradesh	0	2	19	0
Uttar Pradesh	3	13	34	10
Bihar & Jharkhand	5	6	19	9
West Bengal	5	6	32	11
Assam	2	10	35	10
North East States*	5	12	34	9
Total	342	94	430	88

* - Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Sikkim, Tripura

Source: Vijayan et al. 2004; SACON, Coimbatore (table reproduced from India's 4th National Report to the convention on Biological Diversity, MOEF-2009)

Vijayan VS, Prasad SN, Vijayan L, Muralidharan S (2004) Inland wetlands of India—conservation priorities. Salim Ali Centre for Ornithology and Natural History, Coimbatore

Statement 1.38: Marine faunal diversity in India and the world

Group	World	India	
		Total aquatic	Marine ^{\$}
Protista	36400	3510	750
Acanthocephala	1199	229	
Amphibia	7534	386	3
Annelida	17426	1004	440
Arachnida	114275	5907	
Arthropoda	1270711	73657	
Aves	9026	1340	145
Brachiopoda	7390	4	
Bryozoa	11474	272	
Chilopoda	3118	101	
Chordata	66471	6002	
Ctenophora	187	12	12
Diplopoda	7842	162	
Echinodermata	6600	779	765
Echiura	198	43	33
Entoprocta	172	10	
Gastrotricha	794	100	88
Hemichordata	126	12	12
Insecta	1070781	63880	
Kinorhyncha	196	10	99
Mammalia	5751	427	29
Mesozoa	136	10	10
Mollusca	118061	5188	3370
Nematoda	25043	2914	
Nemertea	1362	6	
Nematomorpha	360	20	
Onychophora	187	1	
Phoronida	16	3	
Pisces	33888	3287	1800
Platyhelminthes	29488	1666	550
Porifera	10876	502	486
Protochordate	3000	119	116
Pycnogonida	1346	17	16
Reptilia	10272	562	26
Rotifera	2049	466	
Sipuncula	147	35	38
Symphyla	204	4	
Tardigrada	1335	30	10

Source: Current Status of FRESHWATER FAUNAL DIVERSITY IN INDIA-2017, Zoological Survey of India (Data of marine diversity in india (\$) is retrieved from India's Fifth National Report to the convention on Biological Diversity- 2014, Ministry of Environment and Forests(MoEF))

Statement 1.39 : Number of rare and threatened species in vertebrates

Sl. No.	Category	Approximate Number				
		Mammal	Aves	Reptilia	Amphibia	Pisces
1	2	3	4	5	6	7
1	Extinct	0	0	0	1	0
2	Critically Endangered	10	16	5	13	5
3	Endangered	39	17	9	31	6
4	Vulnerable	47	53	11	21	29
5	Near Threatened	26	96	10	9	25
Total		122	182	35	75	65

Source : Zoological Survey of India

Statement 1.40: Number of threatened Indian faunal species

Group	Threatened	No change or stable	Upwards or improving	Downwards or decreasing	Indeterminate	Trends not available
Mammals	213	4	1	47	87	74
Birds	149	2	-	80	10	57
Reptiles	33	-	-	2	2	29
Amphibia	148	5	-	68	73	2
Pisces	75	-	-	21	42	12
Crustacea	12	-	-	-	-	12
Mollusca	5	-	-	-	1	4
Hymenoptera	5	-	-	-	-	5
Lepidoptera	4	-	-	-	1	4
Odonata	3	-	-	-	1	3
Anoplura	1	-	-	-	-	1
Total	648	11	1	218	217	203

Source: India's 4th National Report to the Convention on Biological Diversity, MOEF-2009

Statement 1.41 : List of threatened/ endangered species notified in India

As per the Gazette Notification in the Central Government (Ministry of Environment and Forests) has made following amendments in the Schedule of the Wild Life (Protection) Act, 1972 and included the following species in the Schedules of Threatened and endangered species (amended upto 2011).

1 Schedule 1	
PART I	
MAMMALS	
42*. Wroughton's free tailed bat (<i>Otomops wroughtoni</i>)	
PART IIA	
**FISHES	
2. Shark and Ray	
(i)	<i>Anoxypristis cuspidata</i>
(ii)	<i>Carcharhinus hemiodon</i>
(iii)	<i>Glyphius gangetics</i>
(iv)	<i>Glyphius glyphius</i>
(v)	<i>Himantura fluviatilis</i>
(vi)	<i>Pristis microdon</i>
(vii)	<i>Pristis zijsron</i>
(viii)	<i>Rhynchobatus djiddensis</i>
(ix)	<i>Urogymnus asperrimus</i>
PART III	
BIRDS	
*19. Swiftlets (<i>Collocalia unicolor</i> and <i>Collocalia fusiphaga</i>)	
Part IV B- **Mollusca	
1	<i>Cassis cornuta</i>
2	<i>Charonia tritonis</i>
3	<i>Conus milneedwardsi</i>
4	<i>Cypræocsis rufa</i>
5	<i>Hippopus hippopus</i>
6	<i>Nautilus Pompilius</i>
7	<i>Tridacna maxima</i>
8	<i>Tridacna squamosa</i>
9	<i>Tudicla Spirillus</i>
Schedule II	
PART II	
*16. Mongooses (All species of genus <i>Herpestes</i>)	
2 Schedule IV	
* 6- A. Small Game - Omitted	

Contd.

19.	**Mollusca
i.	Cypraea lamanica
ii.	Cypraea mappa
iii.	Cypraea talpa
iv.	Fasciolaria trapezium
v.	Harpulina arausiaca
vi.	Lambis chiragra
vii.	Lambis chiragra arthitica
viii.	Lambis crocea
ix.	Lambis millepeda
x.	Lambis scorpius
xi.	Lambis truncata
xii.	Placenta placenta
xiii.	Strombus plicatus sibbaldii
xiv.	Turbomarmoratus
xv.	Turbo marmoratus Linnaeus
20	Horseshoe Crab (<i>Tachypleus gigas</i> and <i>Carcinoscorpius rotundicauda</i>)
	(Ins. By S.O. 2293 (E), dated 4th September, 2009 (w.e.f. 9-9-2009)
	* (Vide Notification No. S.O. 1085 (E), dated 30th September 2002, published in the Gazetted of India, Extra., Pt. II, Sec. 3 (ii), dated 11th October, 2002)
	** (Subs. By/Added by S.O. 1197 (E), dated 5th December, 2001 (w.e.f. 6-12-2001) and corrected by S.O. 233 (E), dated 19th February 2002).
S.O. 3653 E - In exercise of the powers conferred by sub-section (1) of Section 61 of the Wild Life (Protection) Act, 1972 (53 of 1972), the Central Government, being of the opinion that it is expedient so to do, hereby makes the following amendments in Schedule I, Schedule II, Schedule III and Schedule IV to the said Act, namely:- - In Schedule I to the said Act, - - in Part I relating to "MAMMAL", after entry 43, the following entry shall be inserted, namely: "44. Hog Deer (<i>Axis Porchinus</i>)". - in Part III relating to "BIRDS", the word " <i>Collocatia fusiphaga</i>" in the entry 19 shall be omitted. - In Schedule II to the said Act, in Part II, the entry 5 shall be omitted. - In Schedule II to the said Act, the entry 11 shall be omitted. - In Schedule IV to the said Act, - In entry 11, for item 57 and entry relating thereto, the following item and the entry shall be substituted, namely:- "57. Quails (<i>Phasinidae</i>)- except <i>Coturnix japonica</i> (Japanese Quails) of farm bred variety; - after entry 15, the following entry shall be inserted, namely:- "15-A. Tokay gecko (<i>Gecko gecko</i>)".	

Source : Ministry of Environment, Forests & Climate Change, Government of India/ Zoological Survey of India

Statement 1.42 : State-wise population of wild elephants

STATE	Population in the Year				
	1993	1997	2002	2007	2012
Arunachal	2102	1800	1607	1690	890
Assam	5524	5312	5246	5281	5620
Meghalaya	2872	1840	1868	1811	1811#
Nagaland	178	158	145	152	212
Mizoram	15	22	33	-	-
Manipur	50	30	12	-	-
Tripura	100	70	40	59	59
West Bengal	200	276	328	325-350	647
Jharkhand	550*	618*	772	624	688
Odisha	1750	1800	1841	1862	1930
Chhattisgarh	-	-	-	122	247
Uttarakhand	828*	1130*	1582	1346	1346#
Uttar Pradesh	47	70	85	380	291
Tamil Nadu	2307	2971	3052	3867	4015
Karnataka	5500	6088	5838	4035	5648-6488
Kerala	3500	3600	3850	6068	5942-6422
Andhra Pradesh	46	57	74	28	41
Maharashtra	-	-	-	7	4
Andaman & Nicobar	35	35	40	-	-
Grand Total	24226	25604	25877	27657-27682	29391-30711

Source: Project Elephant Division, Ministry of Environment, Forests & Climate Change 2013

* As part of Bihar, Madhya Pradesh and Uttar Pradesh respectively

Meghalaya and Uttarakhand has not conducted elephant census after 2007. Therefore, the figure of 2007 has been maintained for 2012 as well.

Statement 1.43: State-wise population of Tiger and their occupancy

State	Tiger Population			Tiger Km ²		
	2006	2010	2014	2006	2010	2014
Shivalik-Gangetic Plain Landscape Complex						
Uttarakhand	178	227	340	1901	3476	6576
Uttar Pradesh	109	118	117	2766	2511	2519
Bihar	10	8	28	510	750	922
Shivalik Gangetic	297	353	485	5177	6737	10017
Central Indian Landscape Complex and Eastern Ghats Landscape Complex						
Andhra Pradesh	95	72	68	14126	4495	4686
Chhattisgarh	26	26	46	3609	3514	4735
Madhya Pradesh	300	257	308*	15614	13833	15156
Maharashtra	103	168	190	4273	11960	11643
Odisha	45	32	28	9144	3398	3981
Rajasthan	32	36	45	356	637	1147
Jharkhand	-	10	3+	1488	1180	626
Central Indian	601	601	688	48610	39017	41974
Western Ghats Landscape Complex						
Karnataka	290	300	406	18715	14414	14523
Kerala	46	71	136	6168	6804	7137
Tamil Nadu	76	163	229	9211	8389	7229
Goa			5			622
Western Ghats	412	534	776	34094	29607	29511
North East Hills and Brahmaputra Flood Plains						
Assam	70	143	167	1164	2381	3848
Arunachal Pradesh	14	-	28*	1685	1304	1169
Mizoram	6	5	3+	785	416	100
Northern West Bengal	10	-	3	596	799	704
North East Hills, and Brahmaputra	100	148	201	4230	4900	5821
Sunderbans	-	70	76	1586	1645	1841
Total Tiger Population	1411	1706	2226	93697	81906	89164

Source : National Tiger Conservation Authority, Ministry of Environment, Forest and Climate Change

* Likely to be revised as sampling is ongoing in the state

+ From scat DNA

Statement 1.44 : Tiger Reserves in India

(Area in sq. Kms.)

Sl. No.	Year of Creation	Name of Tiger Reserve	State	Area of core/ critical tiger habitat	Area of the buffer/ peripheral	Total area
1	1973-74	Bandipur	Karnataka	872.24	584.06	1456.30
2	1973-74	Corbett	Uttarakhand	821.99	466.32	1288.31
		Amangarh (buffer of Corbett TR)	Uttar Pradesh		80.60	80.60
3	1973-74	Kanha	Madhya Pradesh	917.43	1134.36	2051.79
4	1973-74	Manas	Assam	840.04	2310.88	3150.92
5	1973-74	Melghat	Maharashtra	1500.49	1268.03	2768.52
6	1973-74	Palamau	Jharkhand	414.08	715.85	1129.93
7	1973-74	Ranthambore	Rajasthan	1113.36	297.93	1411.29
8	1973-74	Similipal	Odisha	1194.75	1555.25	2750.00
9	1973-74	Sunderbans	West Bengal	1699.62	885.27	2584.89
10	1978-79	Periyar	Kerala	881.00	44.00	925.00
11	1978-79	Sariska	Rajasthan	881.11	332.23	1213.34
12	1982-83	Buxa	West Bengal	390.58	367.32	757.90
13	1982-83	Indravati	Chhattisgarh	1258.37	1540.70	2799.07
14	1982-83	Namdapha	Arunachal Pradesh	1807.82	4.00	1811.82
15	1982-83	Nagarjunsagar Srisailem (part)*	Andhra Pradesh	2595.72	700.59	3296.31
16	1987-88	Dudhwa	Uttar Pradesh	1093.79	1107.98	2201.77
17	1988-89	Kalakad-Mundanthurai	Tamil Nadu	895.00	706.54	1601.54
18	1988-89	Valmiki	Bihar	598.45	300.93	899.38
19	1989-90	Pench	Madhya Pradesh	411.33	768.30	1179.63
20	1992-93	Tadoba-Andhari	Maharashtra	625.82	1101.77	1727.59
21	1993-94	Bandhavgarh	Madhya Pradesh	716.90	820.04	1536.94
22	1993-94	Panna	Madhya Pradesh	576.13	1021.97**	1598.10
23	1994-95	Dampa	Mizoram	500.00	488.00	988.00
24	1994-95	Bhadra	Karnataka	492.46	571.83	1064.29
25	1998-99	Pench	Maharashtra	257.26	483.96	741.22
26	1999-2000	Pakke	Arunachal Pradesh	683.45	515.00	1198.45
27	1999-2000	Nameri	Assam	320.00	144.00	464.00
28	1999-2000	Satpura	Madhya Pradesh	1339.26	794.04	2133.31

Contd.

Statement 1.44 : Tiger Reserves in India

(Area in sq. Kms.)

Sl. No.	Year of Creation	Name of Tiger Reserve	State	Area of core/ critical tiger habitat	Area of the buffer/ peripheral	Total area
29	2008-09	Anamalai	Tamil Nadu	958.59	521.28	1479.87
30	2008-09	Udanti-Sitanadi	Chattisgarh	851.09	991.45	1842.54
31	2008-09	Satkosia	Odisha	523.61	440.26	963.87
32	2008-09	Kaziranga	Assam	625.58	548	1173.58
33	2008-09	Achanakmar	Chattisgarh	626.195	287.822	914.017
34	2008-09	Dandeli-Anshi	Karnataka	814.88	282.63	1097.51
35	2008-09	Sanjay-Dubri	Madhya Pradesh	812.57	861.93	1674.50
36	2008-09	Mudumalai	Tamil Nadu	321.00	367.59	688.59
37	2008-09	Nagarahole	Karnataka	643.35	562.41	1205.76
38	2008-09	Parambikulam	Kerala	390.89	252.77	643.66
39	2009-10	Sahyadri	Maharashtra	600.12	565.45	1165.57
40	2010-11	Biligiri Ranganatha Temple	Karnataka	359.10	215.72	574.82
41	2012-13	Kawal	Telangana	892.23	1123.21	2015.44
42	2013-14	Sathyamangalam	Tamil Nadu	793.49	614.91	1408.40
43	2013-14	Mukandra Hills	Rajasthan	417.17	342.82	759.99
44	2013-14	Nawegaon-Nagzira	Maharashtra	653.67	0.00	653.67
45	2014	Amrabad	Telangana	2166.37	445.02	2611.39
46	2014	Pilibhit	Uttar Pradesh	602.80	127.45	730.25
47	2014	Bor	Maharashtra	138.12	678.15	816.27
48	2015	Rajaji Tiger Reserve	Uttarakhand	819.54	255.63	1075.17
49	2016 (24.2.2016)	Orang	Assam	79.28	413.18	492.46
50	2016 (8.9.2016)	Kamlang	Arunachal Pradesh	671.00	112.00	783.00
		TOTAL		40145.30	32603.72	72749.05

Source : National Tiger Conservation Authority, Ministry of Environment, Forest and Climate Change

*Revised area details are awaited from the State Governments concerned after reorganization.

** Notified vide notification No. F. 15-21/2010/10-2 dated 24.7.2014 by the State Government of Madhya Pradesh (old area of the buffer was 1002.42 sq.km.)

Statement 1.45 : Tiger Mortality

Year	Natural and other causes	Poaching including seizure	Cases under scrutiny	Total
1990	9	24	-	33
2000	1	9	-	10
2001	8	36	-	44
2002	23	36	-	59
2003	24	20	-	44
2004	17	5	-	22
2005	17	-	-	17
2006	17	5	-	22
2007	20	10	-	30
2008	22	9	-	31
2009	45	21	-	66
2010	25	28	-	53
2011	40	16	-	56
2012	40	25	23	88
2013	31	22	15	68
2014	47	19	13	79
2015	50	21	10	81
2016	55	35	32	122
2017 (as on 19.12.2017)	21	28	59	108

Source : National Tiger Conservation Authority, Ministry of Environment, Forest and Climate Change

Statement 1.46 : State-wise Forest Area

Sl. No.	State/UT	Total Forest Area in Sq.Km												
		1991	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017
1	Andhra Pradesh	63726	63814	63814	63814	63814	63821	63821	63814	63814	63814	63814	37258	37258
2	Arunachal Pradesh	51540	51540	51540	51540	51540	51540	51540	51540	51540	51540	51541	51407	51407
3	Assam	30708	30708	30708	30708	27018	27018	26832	26832	26832	26832	26832	26832	26832
4	Bihar	29226	29226	29226	29226	6078	6473	6473	6473	6473	6473	6473	6493	6877
5	Chhattisgarh					59285	59772	59772	59772	59772	59772	59772	59772	59772
6	Delhi	42	42	42	85	85	85	85	85	85	85	85	102	102
7	Goa	1256	1424	1424	1424	1224	1224	1224	1224	1224	1224	1225	1225	1225
8	Gujarat	19388	19393	19393	19393	18999	19113	18962	18927	18927	18927	21647	21647	21647
9	Haryana	1687	1673	1673	1673	1551	1558	1559	1559	1559	1559	1559	1559	1559
10	Himachal Pradesh	37591	35407	35407	35407	37033	37033	37033	37033	37033	37033	37033	37033	37033
11	Jammu & Kashmir #	20174	20182	20182	20182	20230	20230	20230	20230	20230	20230	20230	20230	20230
12	Jharkhand					23605	23605	23605	23605	23605	23605	23605	23605	23605
13	Karnataka	38646	38724	38724	38724	38724	43084	38284	38284	38284	38284	38284	38284	38284
14	Kerala	11222	11221	11221	11221	11221	11268	11265	11265	11265	11265	11309	11309	11309
15	Madhya Pradesh	155414	154497	154497	154497	95221	95221	94689	94689	94689	94689	94689	94689	94689
16	Maharashtra	63861	63842	63842	63842	61939	61939	61939	61939	61939	61939	61357	61579	61579
17	Manipur	15154	15154	15154	15154	17418	17418	17418	17418	17418	17418	17418	17418	17418
18	Meghalaya	9496	9496	9496	9496	9496	9496	9496	9496	9496	9496	9496	9496	9496
19	Mizoram	15935	15935	15935	15935	15935	16717	16717	16717	16717	16717	16717	5641	5641
20	Nagaland	8625	8629	8629	8629	8629	8629	9222	9222	9222	9222	9222	9222	8623
21	Odisha\$	59555	57184	57184	57184	58135	58136	58136	58136	58136	58136	58136	58136	61204

Contd.

Statement 1.46 : State-wise Forest Area

Sl. No.	State/UT	Total Forest Area in Sq.Km												
		1991	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017
22	Punjab	2842	2901	2901	2901	3059	3084	3084	3084	3058	3084	3084	3084	3084
23	Rajasthan	31559	31700	31700	31700	32494	32488	32488	32639	32639	32639	32737	32737	32737
24	Sikkim	2650	2650	2650	2650	5765	5841	5841	5841	5841	5841	5841	5841	5841
25	Tamil Nadu	22699	22628	22628	22628	22871	22877	22877	22877	22877	22877	22877	22877	22877
26	Telangana**												26904	26904
27	Tripura	6292	6293	6293	6293	6293	6293	6294	6294	6294	6294	6294	6294	6294
28	Uttar Pradesh	51502	51663	51663	51663	16826	16826	16796	16583	16583	16583	16582	16582	16582
29	Uttarakhand					34662	34662	34651	34651	34651	34651	38000	38000	38000
30	West Bengal	11879	11879	11879	11879	11879	11879	11879	11879	11879	11879	11879	11879	11879
31	A & N Islands	7171	7171	7171	7171	7171	7171	7171	7171	7171	7171	7171	7171	7171
32	Chandigarh	31	31	31	31	32	34	33	34	34	34	35	35	35
33	Dadra and Nagar Haveli	207	203	203	203	203	204	204	204	204	204	204	204	204
34	Daman & Diu	*	*	NA	0.7	1	1	6	8	8	8	8	8	8
35	Lakshadweep	nil	nil	NA	0	0	0	0	0	0	0	0	0	0
36	Puducherry	nil	nil	NA	0	0	0	0	13	13	13	13	13	13
Total		770078	765210	765210	765253	768436	774740	769626	769512	769512	769538	771821	764566	767419

Source: State Forest Report 1991 - 2017, FSI

* Included in Goa

** Included in Andhra Pradesh for 1991-2013

\$ - Reserved Forest(RF) in Odisha includes 9175 sq. km of proposed RF, Protected Forest (PF) includes 15117 sq. km revenue forest/deemed forest and 191 sq km private forest.

- Includes Jammu & Kashmir area outside LOC that is under illegal occupation of Pakistan and China.

Statement 1.47 : Forest Cover in India - class-wise

Class	2005		2011		2013		2015		2017	
	Area (Sq. Km)	Percentage of Geographic Area	Area (Sq. Km)	Percentage of Geographic Area	Area (Sq. Km)	Percentage of Geographic Area	Area (Sq. Km)	Percentage of Geographic Area	Area (Sq. Km)	Percentage of Geographic Area
Forest Cover										
Very Dense Forest	54,569	1.66	83,471	2.54	83,502	2.54	85,904	2.61	98,158	2.99
Moderately Dense Forest	332,647	10.12	320,736	9.76	318,745	9.7	315,374	9.59	308,318	9.38
Open Forest	289,872	8.82	287,820	8.75	295,651	8.99	300,395	9.14	301,797	9.18
Total Forest Cover*	677,088	20.6	692,027	21.05	697,898	21.23	701,673	21.34	708,273	21.54
Scrub	38,475	1.17	42,176	1.28	41,383	1.26	41,362	1.26	45,979	1.4
Non-forest	2,571,700	78.23	2,553,060	77.67	2,547,982	77.51	2,544,228	77.4	2,533,217	77.06
Total Geographic Area	3,287,263	100	3,287,263	100	3,287,263	100	3,287,263	100	3,287,469	100

Source : India State of Forest Report 2005-2017, FSI

*Includes 4,921 sq km under Mangrove Cover

Statement 1.48 : State-wise Forest Cover

(Sq.Km)

Sl. No.	State/UT	1991 #	1993 #	1995 #	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017
1	Andhra Pradesh	47290	47256	47112	43290	44229	44637	44419	45231	45102	46670	46389	46116	26006	28147
2	Arunachal Pradesh	68757	68661	68621	68602	68847	68045	68019	67472	67353	67484	67410	67321	67154	66964
3	Assam	24751	24508	24061	23824	23688	27714	27826	27758	27692	27692	27673	27671	27538	28105
4	Bihar	26668	26587	26561	4832	4830	5720	5558	6807	6804	6804	6845	7291	7254	7299
5	Chhattisgarh				56435	56693	56448	55998	55929	55870	55678	55674	55621	55559	55547
6	Delhi	22	22	26	26	88	111	170	177	177	177	176	180	188.77	192.41
7	Goa	1255	1250	1247	1252	1251	2095	2156	2156	2151	2212	2219	2219	2210	2229
8	Gujarat	11907	12044	12320	12578	12965	15152	14946	14604	14620	14620	14619	14653	14710	14757
9	Haryana	513	513	603	604	964	1754	1517	1604	1594	1594	1608	1586	1580	1588
10	Himachal Pradesh	12480	12502	12501	12521	13082	14360	14353	14666	14668	14668	14679	14683	14707	15100
11	Jammu & Kashmir	20499	20443	20433	20440	20441	21237	21267	22689	22686	22537	22539	22538	22988	23241
12	Jharkhand				21692	21644	22637	22716	22722	22894	2894	22977	23473	23524	23553
13	Karnataka	32199	32343	32382	32403	32467	36991	36449	36200	36190	36190	36194	36132	36449	37550
14	Kerala	10292	10336	10336	10334	10323	15560	15577	17284	17324	17324	17300	17922	19278	20321
15	Madhya Pradesh	135541	135396	135164	74760	75137	77265	76429	77739	77700	77700	77700	77522	77426	77414
16	Maharashtra	44044	43859	43843	46143	46672	47482	46865	50661	50650	50650	50646	50632	50699	50682
17	Manipur	17685	17621	17558	17418	17384	16926	17219	16952	17280	17280	17090	16990	17083	17346
18	Meghalaya	15875	15769	15714	15657	15633	15584	16839	17205	17321	17321	17275	17288	17262	17146
19	Mizoram	18853	18697	18576	18775	18338	17494	18430	18600	19240	19183	19117	19054	18717	18186
20	Nagaland	14321	14348	14291	14221	14164	13345	13609	13665	13464	13464	13318	13044	12939	12489
21	Odisha	47205	47145	47107	46941	47033	48838	48366	48755	48855	48855	48903	50347	50460	51345
22	Punjab	1343	1343	1342	1387	1412	2432	1580	1660	1664	1664	1764	1772	1771	1837
23	Rajasthan	12889	13099	13280	13353	13871	16367	15826	16012	16036	16036	16087	16086	16106	16572
24	Sikkim	3041	3119	3127	3129	3118	3193	3262	3357	3357	3359	3359	3358	3353	3344
25	Tamil Nadu	16992	17005	17045	17064	17078	21482	22643	23314	23338	23551	23625	23844	26208	26281

Contd.

Statement 1.48 : State-wise Forest Cover

Sl. No.	State/UT	1991 #	1993 #	1995 #	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017
26	Telangana\$													19854	20419
27	Tripura	5535	5538	5538	5546	5745	7065	8093	8173	8073	7985	7977	7866	7890	7726
28	Uttar Pradesh	33609	33961	33986	10751	10756	13746	14118	14346	14341	14341	14338	14349	14401	14679
29	Uttarakhand				23243	23260	23938	24465	24493	24495	24495	24496	24508	24272	24295
30	West Bengal	8015	8186	8276	8349	8362	10693	12343	12970	12994	12994	12995	16805	16826	16847
31	A & N Islands	7622	7624	7615	7613	7606	6930	6964	6663	6662	6662	6724	6711	6751	6742
32	Chandigarh	5	5	7	7	7	9	15	17	17	17	17	17	21.66	21.56
33	Dadra and Nagar Haveli	206	206	204	204	202	219	225	216	211	211	211	213	206	207
34	Daman & Diu	*	*	3	3		6	8	6	6	6	6	9	19.61	20.49
35	Lakshadweep	0	0	0	0	0	27	23	26	26	26	27	27	27.06	27.1
36	Puducherry	0	0	0	0	0	36	40	42	44	50	50	50	56.95	53.67
	Total	639364	639386	638879	633397	637293	675538	678333	690171	690899	692394	692027	697898	701495	708273
	% of Geographical Area	19.45	19.45	19.43	19.27	19.39	20.55	20.64	20.99	21.02	21.06	21.05	21.23	21.34	21.54

Source : India State of Forest Report- 1991-2017, FSI

Revised estimate as provided by State Forest Report 1997 by incorporating interpretational corrections

* Included in Goa :

\$ Included in Andhra Pradesh for 1991-2013

Note: The forest cover includes all lands which have a tree canopy density of more than ten percent when projected vertically on the horizontal ground, within a minimum areal extent of one hectare. The forest cover reported by FSI does not make any distinction between the origin of tree crops (whether natural or man made) or tree species; and encompasses all type of lands irrespective of their ownership, land use and legal status. A land may be recorded as forest area and under management of forest department but may not have any discernible forest cover. On the other hand, all wooded lands or plantations, delineated as forest cover from satellite data may not be legally recorded as forest area as there could be private plantations or institutional wood lots.

Statement 1.49: Tree Cover in India
(a) State-wise tree cover

(Sq.Km)

Sl. No.	State/UT	2001	2003	2005	2009	2011	2013	2015	2017
1	Andhra Pradesh	9011	12120	7640	7191	7152	7187	3965	3753
2	Arunachal Pradesh	478	363	446	592	549	660	761	807
3	Assam	1942	935	1484	1590	1564	1582	1613	1496
4	Bihar	3693	1620	2522	2495	2369	2164	2182	2263
5	Chhattisgarh	3535	6723	4492	4027	3866	3463	3629	3833
6	Delhi	40	98	107	123	120	118	111	113
7	Goa	62	136	268	286	286	334	325	323
8	Gujarat	4036	10586	7621	8390	7837	8358	7914	8024
9	Haryana	1526	1415	1565	1409	1395	1282	1355	1415
10	Himachal Pradesh	397	491	709	638	623	697	757	822
11	Jammu & Kashmir	2217	3826	5633	6764	6550	7664	8354	7815
12	Jharkhand	2694	5012	3080	3032	2914	2629	2783	2922
13	Karnataka	7446	5371	5467	5683	5733	5920	5552	5713
14	Kerala	1146	1903	2632	2801	2755	3146	2951	2959
15	Madhya Pradesh	5751	7250	6267	6871	7090	7087	7773	8073
16	Maharashtra	8269	9320	8978	9466	9079	9142	9558	9831
17	Manipur	95	136	142	197	193	224	243	220
18	Meghalaya	140	352	405	542	578	668	710	657
19	Mizoram	95	130	122	172	190	223	535	467
20	Nagaland	70	217	238	300	322	372	381	379
21	Odisha	4364	6381	4598	4435	4301	4013	3986	3993
22	Punjab	1634	1608	1823	1699	1699	1499	1544	1622
23	Rajasthan	5286	8638	8379	8274	8272	7860	8269	8266
24	Sikkim	14	22	27	20	25	31	35	35
25	Tamil Nadu	6054	4991	5621	4968	4718	4866	4505	4671
26	Telangana							2549	2669
27	Tripura	68	116	134	171	184	213	233	215
28	Uttar Pradesh	7545	7715	8203	7381	7382	6895	7044	7442
29	Uttarakhand	448	571	658	665	642	703	752	767
30	West Bengal	3264	1731	2269	2458	2335	2144	2088	2136
31	A & N Islands	83	33	53	44	39	41	37	35
32	Chandigarh	2	8	9	11	10	10	9	10
33	Dadra & Nagar Haveli	27	35	28	27	29	29	28	30
34	Daman & Diu	4	6	9	9	9	9	10	10
35	Lakshadweep	0	2	4	4	5	5	4	2
36	Puducherry	35	35	42	34	31	29	27	27
Total		81472	99896	91663	92769	90844	91267	92571	93815
Percent of Geographical Area		2.48	3.04	2.79	2.82	2.76	2.78	2.82	2.85

Source : India State of Forest Report - 2001-2017, FSI

Statement 1.49: Tree Cover in India
(b) Physiographic zone-wise tree cover

Sl. No.	Physiographic Zone	Geographic Area (Km ²)	Year							
			2011		2013		2015		2017	
			Area (Km ²)	% of Geog. Area	Area (Km ²)	% of Geog. Area	Area (Km ²)	% of Geog. Area	Area (Km ²)	% of Geog. Area
1	2	3	4	5	6	7	8	9	10	11
1	Western Himalayas	328952	7859	2.39	9035	2.74	9835.0	2.99	9393	2.86
2	Eastern Himalayas	81752	356	0.44	448	0.60	537.0	0.66	610	0.75
3	North East Ranges	127857	2275	1.78	2655	1.98	3132.0	2.45	2792	2.18
4	Northern Plains	295909	9366	3.17	8609	2.91	8756.0	2.96	9196	3.11
5	Eastern Plains	222365	5168	2.32	4722	2.11	4628.0	2.08	4759	2.14
6	Western Plains	320507	7038	2.20	6245	1.96	6297.0	1.96	6352	1.98
7	Central Highlands	371281	9886	2.66	10127	2.71	11004.0	2.96	11534	3.11
8	North Deccan	365711	7007	1.92	6762	1.90	7912.0	2.16	7994	2.19
9	East Deccan	333824	10718	3.21	9644	2.87	10120.0	3.03	10663	3.19
10	South Deccan	291317	8012	2.75	8244	2.82	7531.0	2.59	7857	2.70
11	Western Ghats	73681	4083	5.54	4189	5.79	3678.0	4.99	4109	5.58
12	Eastern Ghats	192068	4420	2.30	4194	2.19	4041.0	2.10	3936	2.05
13	West Coast	113611	8863	7.80	10391	8.57	9744.0	8.58	9445	8.31
14	East Coast	168634	5791	3.43	6001	3.58	5358.0	3.18	5175	3.07
Total		3287469	90844	2.76	91266	2.78	92573.0	2.82	93815	2.85

Source : India State of Forest Report- 2001 - 2017, Forest Survey of India

Statement 1.50: State-wise Mangrove Cover

(Sq. km)

SI No.	State/UT	Year												
		1991	1993	1995	1997	1999	2001	2003	2005	2009	2011	2013	2015	2017
1	2	5	6	3	4	5	6	7	8	9	10	11	12	13
1	Andhra Pradesh	399	378	383	383	397	333	329	354	353	352	352	367	404
2	Goa	3	3	3	5	5	5	16	16	17	22	22	26	26
3	Gujarat	397	419	689	901	1031	911	916	991	1046	1058	1103	1107	1140
4	Karnataka	0	0	2	3	3	2	3	3	3	3	3	3	10
5	Kerala	0	0	0	0	0	0	8	5	5	6	6	9	9
6	Maharashtra	113	155	155	124	108	118	158	186	186	186	186	222	304
7	Orissa	195	195	195	211	215	219	203	217	221	222	213	231	243
8	Tamil Nadu	47	21	21	21	21	23	35	36	39	39	39	47	49
9	West Bengal	2119	2119	2119	2123	2125	2081	2120	2136	2152	2155	2097	2106	2114
10	A&N Islands	971	966	966	966	966	789	658	635	615	617	604	617	617
11	Daman & Diu	0	0	0	0	0	0	1	1	1	1.56	1.63	3	3
12	Puducherry	0	0	0	0	0	1	1	1	1	1	1	2	2
Total		4244	4256	4533	4737	4871	4482	4448	4581	4639	4663	4628	4740	4921

Source: India State of Forest Report, 1991- 2017, FSI

Statement 1.51 : Number of incidence of Forest Fire

STATE	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2013	2014	2015	2016	2017
Andaman & Nicobar Island	0	1	6	0	1	7	0	12	9	96	1	24	8
Andhra Pradesh	1108	1569	1931	1454	2442	1837	1119	2559	2143	2458	1075	1699	1877
Arunachal Pradesh	97	514	635	349	786	576	485	560	501	535	358	293	733
Assam	213	1369	902	1020	1901	2511	1321	2172	1608	2536	1656	1766	1887
Bihar	67	126	84	84	143	397	81	196	273	140	45	321	272
Chandigarh	0	0	0	0	2849	0	0	0	0	0	0	0	1
Chhattisgarh	789	848	1762	1389	0	2835	1074	3448	1530	1018	1272	2808	4373
Dadra & Nagar Haveli	0	0	1	3	0	0	0	1	3	1	0	0	0
Daman & Diu	0	0	0	0	0	0	0	0	0	0	0	0	0
Delhi	0	0	0	0	0	0	1	0	0	0	0	2	5
Goa	6	9	1	0	2	0	3	0	4	3	0	10	32
Gujarat	140	208	100	131	182	179	101	146	179	74	117	262	574
Haryana	7	11	14	75	21	29	5	42	5	5	6	43	185
Himachal Pradesh	9	12	48	104	168	125	6	249	34	32	22	199	170
Jammu & Kashmir	29	81	92	54	117	30	7	127	23	74	13	217	113
Jharkhand	151	548	140	394	430	1314	192	307	554	202	457	740	1133
Karnataka	417	631	414	275	604	428	370	724	606	424	295	831	1333
Kerala	90	51	130	19	166	106	10	223	98	114	91	165	456
Lakshadweep	0	0	0	0	0	0	0	0	0	0	0	0	0
Madhya Pradesh	901	1101	871	2705	2894	2386	1451	3076	753	534	294	2675	4781
Maharashtra	534	1009	1243	1426	2257	1789	882	3329	1433	702	721	1874	3487
Manipur	295	1666	1223	1415	1477	2487	1275	1507	1303	1774	1286	1105	1094
Meghalaya	69	1285	504	699	1010	1743	879	911	804	1123	1373	966	1454
Mizoram	1513	4479	2733	2095	3434	4675	1691	2218	2259	2189	2468	1318	1587
Nagaland	131	1200	851	568	984	1654	919	927	846	886	722	678	930
Odisha	1127	1646	1587	1184	2087	2515	780	3022	2221	1904	1467	2763	4416
Puducherry	0	0	0	0	0	0	0	0	0	0	0	0	9
Punjab	21	33	18	147	41	56	10	83	36	20	7	45	320
Rajasthan	14	47	53	118	96	117	87	83	75	53	90	66	260
Sikkim	0	7	0	0	1	5	1	3	0	0	3	0	8
Tamil Nadu	193	109	123	40	276	148	34	262	89	284	95	113	301
Telangana											1052	1154	1748
Tripura	324	1421	788	358	717	1127	634	1233	588	1160	476	346	431
Uttar Pradesh	235	253	305	379	370	737	198	560	237	218	130	691	1170
Uttarakhand	143	165	222	717	631	855	85	1265	119	379	207	1501	376
West Bengal	31	168	6	62	100	224	197	117	118	116	138	142	364
Total	8654	20567	16787	17264	26187	30892	13898	29362	18451	19054	15937	24817	35888

Source : Forest Survey of India

Statement 1.52 : State wise level of SO₂, NO₂, PM10 and PM 2.5

State	2010					2012				
	No. of City	No. of Location	SO2 Annual average (µg/m3)	NO2 Annual average (µg/m3)	PM10 Annual average (µg/m3)	No. of City	No. of Location	SO2 Annual average (µg/m3)	NO2 Annual average (µg/m3)	PM10 Annual average (µg/m3)
Andhra Pradesh	14	31	5	17	73	14	31	7	18	72
Arunachal Pradesh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assam	12	23	7	15	73	13	23	6	13	72
Bihar	1	2	7	40	181	1	2	6	36	166
Chandigarh	1	5	2	16	92	1	5	2	19	110
Chattisgarh	4	10	12	28	168	4	10	11	26	151
Dadra & Nagar Haveli	1	2	7	18	39	1	2	8	20	
Daman & Diu	1	2	7	18	35	1	2	8	20	
Delhi	1	9	5	55	261	1	10	5	59	237
Goa	10	10	12	22	89	16	16	11	17	96
Gujarat	7	19	15	23	85	7	20	15	26	94
Haryana	3	5	13	20	156	3	5	9	23	147
Himachal Pradesh	7	14	3	15	89	10	20	2	14	99
Jammu & Kashmir	1	3	7	15	115	1	3	6	12	119
Jharkhand	7	10	23	39	191	7	10	23	41	173
Karnataka	9	19	12	26	92	17	29	9	20	83
Kerala	11	24	4	13	42	11	24	4	12	
Lakshwadeep *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Madhya Pradesh	10	25	11	17	122	10	27	14	22	128
Maharashtra	21	65	18	31	101	24	77	17	33	105
Manipur*	NA	NA	NA	NA	NA	1	1			
Meghalaya	4	5	18	10	93	4	5	9	11	73
Mizoram	1	3	2	6	42	4	11	2	7	54
Nagaland	2	4	2	6	71	2	3	2	6	86
Orissa	9	16	4	15	82	10	23	4	17	82
Punjab	10	23	8	26	179	11	24	10	27	162
Puducherry	1	3	6	13	38	1	3	8	14	42
Rajasthan	5	21	7	30	166	5	21	8	34	173
Sikkim	NA	NA	NA	NA	NA	1	2			
Tamilnadu	5	15	9	20	70	6	26	11	21	71
Telangana	@	@	@	@	@	@	@	@	@	@
Uttar Pradesh	15	41	12	30	181	20	57	12	29	184
Uttarakhand	6	8	28	30	145	6	8	26	28	162
West Bengal	10	39	10	64	110	9	39	12	58	137

SO₂ : Sulphur dioxide NO₂ : Nitrogen Dioxide PM 10 - Particulate Matter (<10µm) PM 2.5 - Particulate Matter (<2.5µm)

NA- Data not available @ - included in Andhra Pradesh for 2010 to 2014 µg/m³ : Micrograms per metre cube

Source : Central Pollution Control Board

Contd.

Statement 1.52 : State wise level of SO₂, NO₂, PM₁₀ and PM 2.5

State	2014													
	No. of city	No of location	SO ₂ (µg/m ³)			NO ₂ (µg/m ³)			PM 10 (µg/m ³)			PM 2.5 (µg/m ³)		
			Min.	Max	Avg	Min.	Max	Avg	Min.	Max	Avg	Min.	Max	Avg
Andhra Pradesh	13	23	4	37	9	5	102	19	3	637	73			
Arunachal Pradesh	2	2	2	37	2	5	102	5	3	637	70			
Assam	13	22	2	37	7	5	102	14	3	637	74			
Bihar	1	2	2	37	7	5	102	32	3	695	178			
Chandigarh	1	5	2	37	2	5	102	21	3	695	91			
Chattisgarh	4	8	2	37	11	5	209	23	3	695	128			
Dadra & Nagar Haveli	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Daman & Diu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delhi	1	10	2	37	5	5	209	62	3	841	217	14	232	80
Goa	17	17	2	37	5	5	209	10	3	841	55	9	53	20
Gujarat	7	19	2	37	14	5	209	20	3	841	87	10	55	30
Haryana	2	3	2	42	13	5	696	23	3	841	155			
Himachal Pradesh	11	21	2	42	2	5	696	14	3	841	87			
Jammu & Kashmir	1	3	2	42	5	5	696	13	3	841	123			
Jharkhand	4	6	2	42	14	5	76	36	3	862	172			
Karnataka	16	26	2	33	8	5	36	19	3	400	91			
Kerala	11	24	2	75	4	5	49	13	7	279	55			
Lakshwadeep *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Madhya Pradesh	9	22	2	75	11	7	177	18	7	458	120	5	218	63
Maharashtra	22	68	3	112	17	5	177	34	8	571	110			
Manipur*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Meghalaya	6	7	2	112	5	5	177	10	8	571	59			
Mizoram	4	11	2	112	2	5	177	6	7	571	43			
Nagaland	2	4	2	112	2	5	48	5	7	571	110			
Orissa	14	32	2	17	5	7	78	17	9	551	88			
Punjab	14	27	4	19	8	5	78	22	27	403	123			
Puducherry	2	6	2	33	11	5	876	12	9	403	39			
Rajasthan	5	21	2	33	7	9	71	34	9	546	165			
Sikkim	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tamilnadu	8	30	2	32	12	5	134	22	13	269	63			
Telangana	12	25	2	33	5	5	106	21	3	341	83	3	504	44
Uttar Pradesh	17	50	2	52	11	5	106	28	34	717	173			
Uttarakhand	3	5	2	52	25	5	444	29	36	521	144			
West Bengal	8	17	2	110	8	19	136	59	4	392	114			

SO₂ : Sulphur dioxide NO₂ : Nitrogen Dioxide µg/m³ : Micrograms per metre cube
 @ - included in Andhra Pradesh for 2010 to 2014 NA- Data not available

PM 10 - Particulate Matter (<10µm)
 PM 2.5 - Particulate Matter (<2.5µm)

Source : Central Pollution Control Board

Contd.

Statement 1.52 : State wise level of SO₂, NO₂, PM₁₀ and PM 2.5

State	2016													
	No. of city	No of location	SO ₂ (µg/m ³)			NO ₂ (µg/m ³)			PM 10 (µg/m ³)			PM 2.5 (µg/m ³)		
			Min.	Max	Avg	Min.	Max	Avg	Min.	Max	Avg	Min.	Max	Avg
Andhra Pradesh	15	25	4	18	7	9	144	23	19	193	76			
Arunachal Pradesh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assam	13	23	3	31	7	7	35	16	11	392	84			
Bihar	1	2	2	10	4	10	84	32	23	611	212			
Chandigarh	1	5	2	25	2	5	97	21	15	344	105	90	73	123
Chattisgarh	4	8	4	17	10	13	40	24	9	212	111			
Dadra & Nagar Haveli	1	1	14	26	21	26	36	32	24	68	37	85	68	73
Daman & Diu	1	1	12	25	19	22	35	29	20	68	34			
Delhi	1	9	2	42	7	5	270	67	24	772	276	46	25	109
Goa	17	18	2	33	5	5	69	11	13	424	70	131	35	30
Gujarat	7	21	6	31	13	8	50	25	51	210	101	62	24	32
Haryana	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Himachal Pradesh	11	22	2	11	2	5	43	13	10	380	80			
Jammu & Kashmir	1	3	2	11	4	10	25	17	83	181	131			
Jharkhand	7	10	9	70	22	17	108	38	50	402	181			
Karnataka	15	25	2	30	3	5	68	21	9	336	80	35	24	43
Kerala	11	24	2	19	4	5	91	16	7	232	47			
									7	59	30			
Madhya Pradesh	13	36	2	38	11	5	66	19	3	248	83	80	46	38
Maharashtra	22	67	2	102	15	5	331	39	3	609	107			
Manipur*									8.33	95	29			
Meghalaya	7	8	2	92	7	5	75	13	9	271	68			
Mizoram	4	11	2	3	2	5	31	6	4	343	44			
Nagaland	2	4	2	2	2	5	30	8	15	297	105			
Orissa	13	30	2	43	6	5	61	18	29	715	94	69	36	41
Punjab	2	6	3	30	9	5	22	12	15	87	39			
Puducherry	12	24	4	22	8	9	48	21	23	493	129			
Rajasthan	7	30	4	25	7	11	65	30	11	562	166			
Sikkim	8	9	2	60	12	5	51	12	3	75	29			
Tamilnadu	9	31	2	69	11	5	68	20	8	663	78	57	32	30
Telangana	11	24	2	36	6	5	121	24	10	448	80	125	88	47
Uttar Pradesh	20	61	2	68	10	5	109	30	11	794	194			
Uttarakhand	3	5	20	30	25	24	35	29	38	501	171			
West Bengal	9	36	2	45	9	5	273	46	3	441	135	0	0	68

SO₂ : Sulphur dioxide NO₂ : Nitrogen Dioxide µg/m³ : Micrograms per metre cube
 @ - included in Andhra Pradesh for 2010 to 2014 NA- Data not available

PM 10 - Particulate Matter (<10µm)
 PM 2.5 - Particulate Matter (<2.5µm)

Source : Central Pollution Control Board

Statement 1.53: Ambient air quality in major cities

(µg/m³)

Sulphur dioxide (SO ₂)															
City	1996	1997	1998	1999	2000	2001	2002	2003	2004	2008	2009	2012	2013	2014	2015
Ahmedabad	25.0	15.1	-	12.2	8.4	10	12.3	16	15.7	12.3	16	12	12	13	13
Bangalore	20.7	27.9	20.3	38.2	20.7	20	13.4	12	8.5	15.2	14	14	13	13	6
Chennai	8.1	15.9	12.6	11.9	12.5	17	19.9	15	12.2	9.5	9	12	14	13	13
Delhi	17.3	16.3	15.4	17.5	15.2	13	11.3	10	9.89	6.6	6	5	4	5	5
Hyderabad	16.8	16.4	11.8	14	12.4	10	7.27	6	5.63	5.5	5	4	5	5	4
Kolkata	21.3	NA	34.3	44.5	17.4	18	11.4	17	9.33	7.7	11	12	11	9	7
Mumbai	18	25.1	11.5	14.9	12.1	16	9.07	8	6.67	8.7	6	5	3	4	4

(µg/m³)

Oxides of Nitrogen (NO _x)															
City	1996	1997	1998	1999	2000	2001	2002	2003	2004	2008	2009	2012	2013	2014	2015
Ahmedabad	14.8	20	-	33	28.6	39	31.8	25	24.3	20.0	21	24	17	20	21
Bangalore	28	20.4	25	27.1	40.2	23	25.5	35	51.8	40.8	37	28	26	30	20
Chennai	9	13	16.7	10.7	14.4	18	18.4	26	16.8	15.4	17	21	22	22	20
Delhi	39.7	34	33.9	35.7	39.9	37	37.3	42	46.1	56.7	19	59	66	61	65
Hyderabad	25	30.7	30.8	24.3	25.2	31	25.5	26	30.3	26.2	23	28	24	24	23
Kolkata	29.3	NA	32	30.5	34.8	74	81.7	71	59.7	64.0	68	70	70	70	56
Mumbai	35.3	34.3	19.5	29.6	25.5	23	17.4	21	18.3	39.3	41	20	13	20	25

(µg/m³)

Particulate Matter (<10µm) (µg/m3) - PM10												
City	1999	2000	2001	2002	2003	2004	2008	2009	2012	2013	2014	2015
Ahmedabad	161	237	198	169	154	152	88	94	83	79	84	89
Bangalore	NA	89.7	68	64.3	76	69	100	112	121	113	139	119
Chennai	71.7	65	77.6	74.8	86	60	63	73	57	75	57	59
Delhi	172	155	146	158	151	149	214	252	237	221	217	220
Hyderabad	127	98	68.8	71	64	71	85	81	79	90	95	93
Kolkata	140	145	117	128	121	134	103	126	135	159	122	105
Mumbai	115	107	67.2	68.7	70	78	127	117	117	117	96	107

Source: Central Pollution Control Board

PM10 : Particulate matter size less than or equal to 10 µm

SO₂ : Sulphur dioxideNO_x : Nitrogen Dioxideµg/m³ : Micrograms per metre cube

Statement 1.54 : Water Quality in Indian Rivers

Name of the River	Length (km)	Year	2010	2011	2012	2013	2014	2015	2016	2017
Ganga	2525	No. of Monitoring locations	57	61	61	61	62	63	64	80
		Temp.(°C) (Min-Max)	4 - 35	3 - 37	8 - 35	3.3 - 35	13 - 35	12 - 40	5 - 36	3 - 36
		pH	6.7-9.0	6.7-9.1	5.9-9.1	6.8-9.3	6.3-8.9	6.7-9.3	6.3-8.7	6.3 - 8.8
		Conductivity (µmhos/cm)	21 - 5250	49 - 10240	18 - 6220	18 - 6270	42 - 6320	153 - 6250	98 - 13370	81 - 7526
		DO(mg/l)	3.6 - 12	4 - 14.3	0.6 - 14.1	3.6 - 11.6	2.8 - 11.1	2.9 - 11.6	2.5 - 10.6	3.6 - 11.3
		BOD(mg/l)	<1- 15	<1- 11	<1- 27	<1- 15.6	<1- 12	<1- 16	<1- 12.2	<1- 7.3
		Total Coliform (MPN/100 ml)	2 - 400000	5 - 1100000	21 - 3000000	40 - 1100000	370 - 1300000	370 - 700000	220 - 300000	2 - 16000000
		Faecal Coliform (MPN/100 ml)	3 - 1400000	5 - 2500000	30 - 5000000	14 - 4500000	4 - 5000000	2 - 1400000	21 - 500000	2 - 16000000
		No. of Monitoring locations	27	27	27	26	27	22	25	25
		Temp.(°C) (Min-Max)	5 - 35	4 - 38	3.2 - 35	3 - 30	14 - 34	13 - 38	6 - 34	4 - 34
Yamuna	1376	pH	6.1-9.4	6.9-8.8	6.1-8.9	6.9 - 8.5	6.4 - 8.8	7.1-9.2	6.7 - 8.6	7 - 8.5
		Conductivity (µmhos/cm)	100-2220	60-1905	52-1110	74-374	112 - 2860	147-2150	179 - 4060	173 - 3770
		DO(mg/l)	NT -21.1	NT -17	NT -11.4	0.6- 27	0.3- 12.8	NT - 15.5	NT - 18	NT -12
		BOD(mg/l)	8 - 84	<1-41	1 -113	1 - 43	1 -79	<1- 97	<1- 67	<1- 80
		Total Coliform (MPN/100 ml)	9 - 29000000	4-110000000	6-200000000	3-48000	7-540000	2-13000000	6 - 92000000	2 - 110000000
		Faecal Coliform (MPN/100 ml)	13 - 390000000	10-1600000000	12-2000000000	10-9200000	17-160000000	2 - 17000000	2 - 160000000	2 - 140000000
		No. of Monitoring locations	9	11	11	11	3	6	11	12
		Temp.(°C) (Min-Max)	20 - 34	18-36.5	23-32	23-38	17-32	20-34	19-33	18 - 33
		pH	7.4 - 8.7	7.1-9.1	7.43-8.6	6.7-7.8	7.3-8.4	7.1-9.4	6.6 - 9	7.21 - 9.02
		Conductivity (µmhos/cm)	230-7234	256 -1310	192-1276	129-2420	320-1013	234-773	28 - 2612	191 - 16660
Mahi	583	DO(mg/l)	3.5 - 9.9	3.2-8.9	4.41-20	3.8-10.2	4.8-8	4.7-8.9	3 - 9.5	2.5 - 8.9
		BOD(mg/l)	<1- 4.0	<1-8.0	<1- 6	<1-3.3	<1-2.1	1 - 5	<1- 7.03	<1- 2.8
		Total Coliform (MPN/100 ml)	2 - 7	2 - 9	2 - 21	2 - 170		4-58	2 - 49	2 - 40
		Faecal Coliform (MPN/100 ml)	4 - 110	7 - 28	4 - 210	2-1600	4 - 300	4 - 300	7 - 300	4 - 140

Contd.

Statement 1.54 : Water Quality in Indian Rivers

Name of the River	Length (km)	Year	2010	2011	2012	2013	2014	2015	2016	2017
Tapi	724	No. of Monitoring locations	14	14	14	9	7	12	14	14
		Temp.(°C) (Min-Max)	15 - 42	24-41.5	20-43	19-34	18-31	19-36	18 - 31	19.4 - 35
		pH	7.0-8.7	7.0-8.7	7.02-8.8	7.29 - 8.69	7.14 - 8.7	7.07 - 8.6	7.11 - 8.76	6.44 - 8.9
		Conductivity (µmhos/cm)	125- 39400	172-41836	125-39720	23-5670	270-1575	153-42880	192 - 40650	192 - 43460
		DO(mg/l)	1 - 8.1	3.2-7.6	3.3-7.7	4.4 - 8.6	4.1-7.8	2.1-7.7	2.4 - 8.8	1.2 - 9.8
		BOD(mg/l)	<1- 16	1.2-10	1.0-18	<1 - 7	<1 - 9	1.0-18	<1 - 8	<1 - 19
		Total Coliform (MPN/100 ml)	2 - 4300	9 - 9000	2 - 50	9-170000	4-140	2 - 170	2 - 5420	2 - 542
Narmada	1312	Faecal Coliform (MPN/100 ml)	2 - 9300	22-24000	26-1600	23-9300	50-920	2 - 2400	2 - 5420	15 - 900
		No. of Monitoring locations	21	26	26	16	17	18	26	27
		Temp.(°C) (Min-Max)	19 - 39	14.7-38	17-32	18 - 31	18-34	18-32.8	18 - 32	17 - 36
		pH	7.2 - 8.5	7.1 - 8.6	7.1-8.8	7.1-8.8	6.9-9	6 - 8.6	7.03 - 8.8	6.9 - 8.9
		Conductivity (µmhos/cm)	194 - 727	217 - 651	206 - 710	164 - 19452	12 - 693	96 - 817	91 - 4320	156 - 7580
		DO(mg/l)	4.8 - 11	6.2 - 9.9	5.8 - 13	1.3 - 11.7	5.8 - 10.2	6.4 - 9.4	1.3 - 9.6	6.16 - 8.9
		BOD(mg/l)	<1 - 5.4	<1 - 5	<1 - 7.9	<1 - 7.7	<1 - 14	<1 - 9	<1 - 8	<1 - 3
Godavari	1465	Total Coliform (MPN/100 ml)	2 - 4600	2 - 17	3 - 30	2 - 2200	2 - 75	2 - 28	2 - 1400	2 - 170
		Faecal Coliform (MPN/100 ml)	4 - 11000	4 - 1600	5 - 900	4 - 9200	7 - 350	7 - 240	12 - 28000	2 - 1700
		No. of Monitoring locations	35	35	35	35	35	35	35	35
		Temp.(°C) (Min-Max)	12 - 40	18-40	17-38	19-38	18-30	14-41	16 - 35	12 - 36
		pH	5.4-8.9	6.4-9.1	6.51-9.3	6.4-9.8	6.8-9.2	6.9-8.9	5.7 - 9	6.5 - 8.9
		Conductivity (µmhos/cm)	91 - 1670	132 - 1959	113 - 2985	158 - 2075	162 - 1703	141 - 1632	139 - 2404	145 - 1840
		DO(mg/l)	1.8 - 14.2	1.2 - 12.2	NT - 12.6	2.6 - 7.4	NT - 7.5	2.2 - 8.4	3.7 - 8.2	NT - 8.6
		BOD(mg/l)	<1 - 60	<1 - 37	<1 - 40	<1 - 22	<1 - 28	<1 - 25	1 - 16	1.1 - 80
		Total Coliform (MPN/100 ml)	2 - 1600	2 - 500	2 - 1600	2 - 500	2 - 460	2 - 500	2 - 158	2 - 150
		Faecal Coliform (MPN/100 ml)	2 - 2400	7 - 2400	3 - 2700	22 - 21000	4 - 2400	7 - 2400	7 - 3200	14 - 2400

Contd.

Statement 1.54 : Water Quality in Indian Rivers

Name of the River	Length (km)	Year	2010	2011	2012	2013	2014	2015	2016	2017
Krishna	1401	No. of Monitoring locations	24	23	25	25	24	24	24	24
		Temp. (°C) (Min-Max)	17 - 39	19.2 - 38	17 - 36	17 - 34	20 - 34	19 - 41	18 - 41	17 - 36
		pH	6.5 - 9.1	6.9 - 8.7	6.2 - 9.6	6.8 - 9.5	6.6 - 9.1	6.7 - 9.3	6.2 - 8.7	6.8 - 8.8
		Conductivity (µmhos/cm)	42 - 16720	99 - 8570	77 - 14140	108 - 2098	78 - 33200	91 - 37400	72 - 34700	85 - 34100
		DO(mg/l)	1.5 - 11.8	1.7 - 15.8	NT - 15	2.8 - 11.7	1.6 - 9.2	3.2 - 13.7	2.5 - 9.9	3.9 - 11.8
		BOD(mg/l)	<1 - 10	<1 - 16	<1 - 24	<1 - 14	<1 - 14	<1 - 12	<1 - 14	<1 - 9.5
		Total Coliform (MPN/100 ml)	2 - 1600	2 - 9000	2 - 900	2 - 1600	2 - 1600	2 - 1700	2 - 1100	2 - 1800
Cauvery	800	Faecal Coliform (MPN/100 ml)	2 - 4000	4 - 16000	2 - 2700	12 - 1800	60 - 2200	2 - 2400	10 - 9000	13 - 3200
		No. of Monitoring locations	29	31	31	29	40	40	40	40
		Temp. (°C) (Min-Max)	21-30	20-34	20-37	16-35	19-35	13-35	20-36	18 - 35
		pH	6.5-8.9	4.3-8.9	6.6-9.1	6.2-9.4	6.2-8.9	6.1-9.4	6.8 - 9.4	6.5 - 9.2
		Conductivity (µmhos/cm)	18-8430	07-3640	05-4110	35-50400	32 - 29600	30-26800	54 - 47600	40 - 78500
		DO(mg/l)	0.4-12.2	1.7-10.9	1.3-12.9	NT - 19.7	NT -10.8	NT - 9.8	0.6 - 8.4	NT - 9.6
		BOD(mg/l)	<1 - 27	<1 - 7.2	<1 - 21.9	<1 - 8.5	<1 - 58	<1 - 25.1	<1 - 16.8	<1 - 32
Mahanadi	851	Total Coliform (MPN/100 ml)	20-12000	20-2200	2-11000	2 - 540000	26-28000000	45-22000	2 - 49000	40 - 27000
		Faecal Coliform (MPN/100 ml)	70-15000	90-6200	2-22000	2 - 920000	49-35000000	52-54000	14-79000	140 - 47000
		No. of Monitoring locations	22	23	23	23	23	23	23	26
		Temp. (°C) (Min-Max)	17-39	18-36	20-37	20-38	20-37	18-37.5	17-44	17 - 38
		pH	7.0 - 9.3	7.1-8.5	7.0-8.4	6.5-8.5	6.9-8.5	6.7-8.5	5.56-10	7.13 - 8.5
		Conductivity (µmhos/cm)	92 - 42350	90 - 13190	39-39030	21-34350	78 - 38730	140-33410	131 - 42170	27 - 41140
		DO(mg/l)	4.4-11	4.9 -10.5	4.0 -12.0	4.2 - 9.2	4.5-11.5	4.6 - 9.8	4.2 - 10.3	5.1 - 9.6
		BOD(mg/l)	<1 - 14.3	<1 - 3.6	<1 - 4.9	<1 - 4.2	<1 - 3.9	<1 - 4.2	<1 - 8	<1 - 3.5
		Total Coliform (MPN/100 ml)	45 - 92000	78-160000	5-156000	2-160000	2-160000	20-160000	13 - 160000	2 - 160000
		Faecal Coliform (MPN/100 ml)	10 - 160000	10 - 160000	11-200000	8-160000	16-160000	22-160000	20 - 160000	2 - 160000

Contd.

Statement 1.54 : Water Quality in Indian Rivers

Name of the River	Length (km)	Year	2010	2011	2012	2013	2014	2015	2016	2017
Brahmani	799	No. of Monitoring locations	16	16	16	16	16	16	16	19
		Temp. (°C) (Min-Max)	17-37	15-38	19-37	19-39	14-42	10-39	13-44	15-35
		pH	6.6-8.5	6.7-8.5	6.4-8.5	6.4-8.6	6.9-8.4	6.8-8.6	6.5-9	6.5-8.4
		Conductivity (µmhos/cm)	97-623	93-458	99-363	104-429	110-502	117-412	88-363	91-406
		DO(mg/l)	5.6-12	5-9.9	5.2-12	5.1-11.7	5.2-13.5	5.3-10.4	4-10.3	4.4-10.5
		BOD(mg/l)	<1-5.6	<1-6.6	<1-7	<1-5.6	<1-5.5	<1-5.3	<1-5.8	<1-6
		Total Coliform (MPN/100 ml)	130-35000	170-35000	20-92000	45-160000	20-160000	20-160000	2-160000	2-160000
		Faecal Coliform (MPN/100 ml)	330-92000	330-92000	78-200000	45-160000	45-160000	78-160000	20-160000	20-160000
		No. of Monitoring locations	5	5	5	5	5	5	5	9
		Temp. (°C) (Min-Max)	18-36	15-36	19-37	15-37	10-37	10-37	13-40	15-41
Baitarni	360	pH	6.6-8.3	7.1-8.4	7.1-8.4	7.0-8.5	6.8-8.4	6.5-8.4	7.1-8.4	7.2-8.4
		Conductivity (µmhos/cm)	98-33320	83-32540	93-42560	88-52170	94-35200	107-34380	103-50910	77-43350
		DO(mg/l)	5.6-8.8	5.2-11.9	5.6-10	4.5-8.8	4.8-9	5.1-9.2	5-8.8	4.9-9.1
		BOD(mg/l)	<1-2.6	<1-3.2	<1-2.8	<1-2.8	<1-3	<1-2.9	<1-2.7	<1-2.8
		Total Coliform (MPN/100 ml)	210-5400	140-24000	130-11000	130-35000	45-160000	78-160000	45-24000	20-160000
		Faecal Coliform (MPN/100 ml)	470-16000	350-54000	230-17000	330-54000	45-160000	170-160000	230-160000	20-160000
		No. of Monitoring locations	12	12	12	6	1	6	11	11
		Temp. (°C) (Min-Max)	19-38	15-38	18-39	20-29	17-30	15-35	16-42	14-41
		pH	6.8-8.0	6.5-8.4	6-8.5	6.6-8.5	7.6-8.4	6.8-8.4	6.4-8.5	6.5-8.3
		Conductivity (µmhos/cm)	152-244	126-408	82-1211	127-472	133-320	172-402	123-411	154-402
Subarnarekha	395	DO(mg/l)	5.9-8.2	3.0-8.6	3.6-8.4	6.8-8.4	7.4-8.4	5-8.7	3-8.8	2.5-8.6
		BOD(mg/l)	<1-2.8	<1-7.0	<1-8	<1-4.2	<1-2.9	<1-3.4	<1-8	<1-10
		Total Coliform (MPN/100 ml)	-	110-15000	90-54000	220-4900	490-11000	78-3500	150-4900	130-16000
		Faecal Coliform (MPN/100 ml)	-	750-43000	640-92000	790-13000	2200-17000	230-9200	490-7900	330-54000

Contd.

Statement 1.54 : Water Quality in Indian Rivers

Name of the River	Length (km)	Year	2010	2011	2012	2013	2014	2015	2016	2017
Brahmaputra	916	No of Monitoring locations	10	10	10	10	10	10	10	11
		Temp.(°C) (Min-Max)	18-32	17-32	17-32	16-31	15-33	16-38	14 - 34	17 - 32
		pH	6.5-8.1	6.1-8.5	6.6-8.1	6 - 8.5	6.2- 8	6.4-8.3	6.5 - 8.4	6.5 - 7.9
		Conductivity (µmhos/cm)	49-371	68-238	67-359	83 - 573	20 - 573	68 - 406	54 - 271	57 - 367
		DO(mg/l)	3.6-9.4	4.4-30	4.2-11	4.6 - 10.3	3.8 - 11.4	4.4 - 9.8	4.7 - 10.5	3.6 - 10.5
		BOD(mg/l)	<1 - 6.3	<1 - 9.2	<1 - 3.6	<1 - 4.1	<1 - 3.4	<1 - 3.5	<1 - 4.8	<1 - 6.4
		Total Coliform (MPN/100 ml)	2 - 360	2 - 1500	20 - 910	2 - 2800	2 - 110000	2 - 240000	2 - 4300	2 - 7500
		Faecal Coliform (MPN/100 ml)	2 - 3000	2 - 15000	2 - 2800	2 - 24000	2 - 240000	2 - 240000	360 - 120000	2 - 110000
		No of Monitoring locations	23	23	23	22	22	22	23	27
		Temp.(°C) (Min-Max)	4 - 27	1.8-25	2.3-26.9	1 - 32	4-31	5 - 27	8 - 33	5 - 35
Satluj	1078	pH	4.2-8.6	6.8-8.69	6.8-8.7	6.3-8.9	6.6 - 9.7	7 - 8.7	6 - 8.7	6.7 - 8.5
		Conductivity (µmhos/cm)	155-982	87-1022	73-664	20-940	96 -1080	67 - 1096	125 - 894	92 - 1733
		DO(mg/l)	4.1-11.1	3.8-12	4 - 12	0.4 - 11.8	2.4 - 11	2.1 - 10.1	1 - 10	1 - 10
		BOD(mg/l)	<1 - 40	<1 - 32	<1 - 27	<1 - 13	<1 - 15	<1 - 24	<1 - 43	<1 - 108
		Total Coliform (MPN/100 ml)	2 - 50000	2 - 50000	4 - 70000	11 - 22000	13 - 46000	12 - 43000	6 - 21000	2 - 210000
		Faecal Coliform (MPN/100 ml)	6 - 100000	4 - 90000	27 - 100000	22 - 50000	46 - 75000	33 - 64000	94 - 63000	17 - 380000
		No of Monitoring locations	23	23	23	23	23	23	23	27
		Temp.(°C) (Min-Max)	5 - 26	2.5-24	2-29.5	1 - 32	1 - 24	1.5 - 25	5 - 27	4 - 30
		pH	6.2-8.8	6.5-8.87	6.6-7.9	6 - 9	6.8 - 9.1	6.7 - 9	6.5 - 8.7	6.6 - 8.7
		Conductivity (µmhos/cm)	63-548	49-638	47-513	29 - 472	41 - 488	60 - 607	59 - 502	27 - 548
Beas	460	DO(mg/l)	5.8-11.2	5-12.5	3.8-12	4.5 - 12.1	5.6 - 12.2	5.1 - 13	5 - 12.8	5.2 - 11.4
		BOD(mg/l)	<1 - 2.8	<1 - 1.5	<1 - 8.7	<1 - 6	<1 - 2.7	<1 - 10	<1 - 6	<1 - 2.6
		Total Coliform (MPN/100 ml)	2 - 7000	2 - 920	11-900	14 - 2400	8 - 790	2-390	4 - 270	4 - 1700
		Faecal Coliform (MPN/100 ml)	7-39000	7 - 2800	34-1600	28 - 2400	23 - 1600	13 - 2400	46 - 790	58 - 3500

BOD : Biological Oxygen Demand ;
 (µmhos/cm) : Micromhos per centimeter;
 Source: Central Pollution Control Board.

DO- Dissolved Oxygen.
 MPN: Most Probable Number

Statement 1.55 : State-wise River Water Quality

Sl.No.	State	Dissolved Oxygen (mg/l)			pH			Conductivity (µmhos/cm)		
		MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN
1	Andhra Pradesh	0	11.7	6.6	2	9.6	7.8	76	14920	641
2	Assam	0	18	7.2	5.8	8.1	7.2	43	868	193
3	Bihar	2.6	9.4	8.4	7.1	8.6	8	162	476	329
4	Chhattisgarh	0.8	8.5	7.3	7	8.8	7.7	85.5	755	258
5	Daman Diu	-	-	-	7.2	8.1	7.6	202	348	277
6	Delhi	0	10.5	2.6	7.1	8.3	7.7	230	1590	767
7	Goa	3.6	8.1	6.5	6.6	8	7.2	8.2	1370	118
8	Gujarat	0	12.8	6.1	6.8	8.9	8	138	55300	2627
9	Haryana	0.42	10.6	7.3	4.5	8.7	7.6	150	3640	665
10	Himachal Pradesh	2.2	13.3	8.8	7	8.7	7.8	53	1495	324
11	Jammu & Kashmir	1.8	9.8	7.5	6.7	8.8	7.6	163	548	247
12	Jharkhand	5.1	8.9	7.6	6	7.8	7	-	-	-
13	Karnataka	0.7	14	7.1	6	8.9	7.9	20	2400	482
14	Kerala	0	8	6.2	5.4	8.2	6.6	24	44000	923
15	Madhya Pradesh	0	16	7.1	6.8	10	7.8	104	9340	734
16	Maharashtra	0	9.9	5.8	5.8	8.9	7.6	44	55830	651
17	Manipur	3.8	9.6	7.2	6.5	8	7.4	141	735	404
18	Meghalaya	1.4	10	6.8	2.9	7.4	6.2	123	950	294
19	Mizoram	4.3	8.7	6.8	7.5	8.3	7.9	70	220	148
20	Nagaland	2.4	9.2	6.2	4.7	8.7	7.8	62	400	160
21	Odisha	3.4	9.7	7.7	6.7	8.5	7.8	17.4	48400	1384
22	Puducherry	6.6	7.6	7	6.7	8.4	7.6	398	715	593
23	Punjab	1.2	8.9	6.2	6.5	7.9	7.4	162	1600	575
24	Rajasthan	3.2	7.8	5.7	7.2	8.7	8.1	250	880	453
25	Sikkim	8	12.5	10.8	6	7.2	6.6	210	290	255
26	Tamilnadu	0.6	9.3	6.9	5.7	8.8	7.4	42	28700	556
27	Tripura	4.2	6.9	5.8	7.1	8.1	7.6	110	180	141
28	Uttar Pradesh	0	20.6	6.7	7	9.5	7.9	122	8010	610
29	Uttarakhand	5.6	10.2	8.5	6.5	8.4	7.3	40	398	154
30	West Bengal	2.5	15.2	6.7	6.8	8.7	7.9	60	68700	1244

contd.

Statement 1.55: State-wise River Water Quality

Sl. No.	State	BOD (mg/l)			Total Coliform (MPN/100ml)			Fecal Coliform (MPN/100ml)		
		MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN
1	Andhra Pradesh	0.1	50	2.7	3	28000	1888	0	800	44
2	Assam	0.3	32	1.9	1	240000	3816	0	24000	653
3	Bihar	1.7	2.9	2.3	700	90000	11707	300	50000	4823
4	Chhattisgarh	0.2	3.4	1.6	4	1100	110	0	0	0
5	Daman Diu	-	-	-	-	-	-	-	-	-
6	Delhi	1	70	19.9	19000	103000000	12024579	500	10900000	1256411
7	Goa	0.7	4.7	2	4	5400	511	2	1300	168
8	Gujarat	0.1	50	4.4	0	2100000	31885	0	460000	12567
9	Haryana	1	590	18.8	112000	6600000	804484	180	760000	76726
10	Himachal Pradesh	0.1	7.6	0.7	2	4400000	127730	0	430000	6349
11	Jammu & Kashmir	0.1	40	2.4	-	-	-	-	-	-
12	Jharkhand	0.4	10.5	2.9	750	2400	1516	110	930	287
13	Karnataka	0.1	7	1.7	1	160000	4791	0	90000	2031
14	Kerala	0.1	11	1.1	0	56000	2318	0	44000	1236
15	Madhya Pradesh	0.2	50	4.4	0	2400	349	0	280	7
16	Maharashtra	1.2	50	7.6	0	1800	439	0	1600	100
17	Manipur	-	-	-	5	415	101	-	-	-
18	Meghalaya	1	7.7	3.3	31	2200	552	23	1700	402
19	Mizoram	0.3	1.7	0.9	3	15	5	-	-	-
20	Nagaland	0.4	2.8	1.1	-	-	-	-	-	-
21	Odisha	0.4	6.4	1.9	630	1600000	18088	230	160000	6293
22	Puducherry	0	1	0.3	-	-	-	-	-	-
23	Punjab	0	50	9.9	35	2500000	81441	0	500000	13787
24	Rajasthan	0.1	6.2	1.7	4	210	32	3	14	4
25	Sikkim	2	3.8	2.8	80	350	238	40	220	118
26	Tamilnadu	0.1	23	1.7	21	5400	574	13	3500	375
27	Tripura	0.5	4	2.3	180	620	483	17	560	356
28	Uttar Pradesh	1	364	9.2	160	140000000	1808500	20	1790000	90302
29	Uttarakhand	0.9	7.6	1.8	0	10100000	559977	1	380000	27016
30	West Bengal	0	6.8	2.3	540	1400000	139135	280	850000	62013

Source: Central Pollution Control Board (2009)

Note : BOD : Bio chemical Oxygen demand

(µmhos/cm) : Micromhos per centimeter; MPN: Most Probable Number

Statement 1.56 : State-wise habitations with quality-affected groundwater

(As on 01/04/2017)

S. No.	State	Contamination Wise Number Of Habitations & Population													
		Total		Flouride		Arsenic		Iron		Salinity		Nitrate		Heavy Metal	
		Habita-tions	Popula-tion	Habita-tions	Popula-tion	Habita-tions	Popula-tion	Habita-tions	Popula-tion	Habita-tions	Popula-tion	Habita-tions	Popula-tion		
1	Andaman & Nicobar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Andhra Pradesh	424	322373	352	229458	0	0	1	2729	65	76308	6	13878	0	0
3	Arunachal Pradesh	31	5690	0	0	0	0	31	5690	0	0	0	0	0	0
4	Assam	11048	4161395	291	116222	4523	1702450	6227	2338030	0	0	0	0	7	4693
5	Bihar	4240	4851425	901	1102329	877	1329866	2462	2419230	0	0	0	0	0	0
6	Chhattisgarh	1181	309703	406	131631	20	7385	743	167830	2	753	10	2104	0	0
7	Goa	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Gujarat	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Haryana	128	310424	119	296751	0	0	0	0	9	13673	0	0	0	0
10	Himachal Pradesh	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Jammu & Kashmir	17	36275	5	10576	0	0	12	25699	0	0	0	0	0	0
12	Jharkhand	3092	1171006	610	339307	102	92270	2372	736183	0	0	5	2277	0	0
13	Karnataka	1265	1010552	745	529326	4	3221	92	76359	45	39614	378	361900	1	132
14	Kerala	399	934997	68	198250	0	0	201	459685	98	194505	32	82557	0	0
15	Madhya Pradesh	190	86375	174	75849	0	0	5	1387	11	9139	0	0	0	0
16	Maharashtra	293	564780	82	157133	0	0	18	31782	96	148633	97	227232	0	0
17	Manipur	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Meghalaya	32	10637	0	0	0	0	32	10637	0	0	0	0	0	0
19	Mizoram	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Nagaland	43	21597	0	0	0	0	43	21597	0	0	0	0	0	0
21	Odisha	3077	1002292	106	30205	0	0	2587	851536	384	120551	0	0	0	0
22	Puducherry	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Punjab	3743	4531558	310	372072	752	949204	292	254975	16	12577	151	173470	2222	2769260
24	Rajasthan	20643	8466380	6695	4559725	0	0	5	4123	12800	3031188	1143	871344	0	0
25	Sikkim	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Tamil Nadu	198	95765	0	0	0	0	176	87290	22	8475	0	0	0	0
27	Telangana	1392	1997079	1028	1415235	0	0	36	48492	183	314792	145	218560	0	0
28	Tripura	2583	1225904	0	0	0	0	2583	1225904	0	0	0	0	0	0
29	Uttar Pradesh	1379	1325148	179	310011	748	573767	362	374055	80	47203	10	20112	0	0
30	Uttarakhand	16	78893	0	0	0	0	13	66083	0	0	3	12810	0	0
31	West Bengal	19310	19477602	1421	963129	11232	12359770	5875	5595109	506	393789	0	0	276	165805
Total		74724	51997850	13492	10837209	18258	17017933	24168	14804405	14317	4411200	1980	1986244	2506	2939890

Source : www.indiawater.nic.in (Report retrieved on 15.02.2018)

Statement 1.57 : Sea Water Quality
(a) : Coastal Water Quality - Biochemical Oxygen Demand(BOD)

Unit - mg/l

State	Location	Upto 2 kms			Upto 5 kms			All Distances		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Gujarat	Vadinar	0.32	1.90	6.02	0.12	1.88	6.02	0.10	1.58	6.02
Gujarat	Veraval	0.06	2.66	110.00	0.06	2.66	110.00	0.00	2.10	110.00
Gujarat	Hazira	0.00	2.85	19.10	0.00	2.72	19.10	0.00	2.56	19.10
Maharashtra	Mumbai	0.00	2.00	9.92	0.00	2.00	9.92	0.00	1.90	9.92
Maharashtra	Worli	0.60	2.85	6.97	0.60	2.85	6.97	0.60	2.85	6.97
Maharashtra	Ratnagiri	0.20	1.90	20.50	0.13	1.58	20.50	0.00	1.54	20.50
Maharashtra	Malvan	0.32	2.26	6.41	0.32	2.26	6.65	0.32	2.26	6.65
Goa	Mandovi	0.00	0.99	5.56	0.00	0.99	5.56	0.00	0.99	5.56
Goa	Zuari	0.01	0.68	2.09	0.01	0.66	2.09	0.01	0.66	2.09
Kerala	Kochi	0.65	1.72	4.47	0.31	1.56	4.68	0.07	1.39	5.20
Lakshadweep	Kavaratti	0.56	1.39	2.48	0.36	1.23	2.48	0.36	1.19	2.48
Karnataka	Mangalore	0.01	1.58	3.64	0.01	1.40	4.25	0.01	1.35	4.40
Tamilnadu	Tuticorin	0.03	2.31	46.40	0.02	2.22	46.40	0.02	2.21	56.00
Tamilnadu	Ennore	1.42	0.00	20.20	1.36	0.00	20.20	1.33	0.00	20.20
Puducherry	Puducherry	0.05	1.58	14.80	0.05	1.49	14.80	0.05	1.51	14.80
Andaman & Nicobar Islands	Port Blair	0.00	1.19	5.21	0.00	1.19	5.21	0.00	1.19	5.21
Andhra Pradesh	Visakhapatnam	0.01	10.80	212.00	0.01	9.74	212.00	0.01	9.38	212.00
Andhra Pradesh	Kakinada	0.00	1.78	8.30	0.00	1.74	8.30	0.00	1.72	8.30
Odisha	Mahanadi	2.00	0.08	5.54	1.89	0.06	5.54	1.83	0.06	5.54
Odisha	Paradip	0.11	1.90	5.17	0.11	1.75	5.17	0.11	1.75	5.17
Odisha	Dhamra	0.32	2.18	4.85	0.11	2.02	4.85	0.11	1.93	4.85
West Bengal	Sandheads	0.74	2.29	4.49	0.74	2.30	4.49	0.10	2.04	4.49
West Bengal	Hooghly	0.23	1.89	5.96	0.23	1.89	5.96	0.23	1.89	5.96

Source: ICMAM Project Directorate

Statement 1.57 : Sea Water Quality
(b) : Coastal Water Quality - Dissolved Oxygen(DO)

Unit - mg/l

State	Location	Upto 2 kms			Upto 5 kms			All Distances		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Gujarat	Vadinar	3.23	6.72	8.49	1.94	6.65	8.49	1.94	6.72	9.54
Gujarat	Veraval	0.00	2.88	8.44	0.00	2.88	8.44	0.00	5.11	16.00
Gujarat	Hazira	0.20	6.00	9.44	0.20	6.08	9.44	0.20	6.14	9.44
Maharashtra	Mumbai	0.60	5.20	10.10	0.49	5.39	10.80	0.49	5.49	10.80
Maharashtra	Worli	1.58	5.76	8.00	1.58	5.76	8.00	1.58	5.76	8.00
Maharashtra	Ratnagiri	0.64	6.34	11.09	0.34	6.21	11.09	0.34	6.11	11.09
Maharashtra	Malvan	1.27	6.59	8.24	1.27	6.46	8.24	1.27	6.46	8.24
Goa	Mandovi	0.22	5.17	8.67	0.22	5.18	8.93	0.22	5.18	8.93
Goa	Zuari	2.46	5.24	8.38	2.46	5.19	8.38	2.46	5.19	8.38
Kerala	Kochi	2.10	4.96	8.47	1.20	4.87	8.67	1.20	4.84	8.80
Lakshadweep	Kavaratti	2.50	5.02	8.54	2.50	4.74	8.54	2.50	4.68	8.54
Karnataka	Mangalore	1.82	5.08	8.42	1.82	5.05	8.42	1.82	5.03	8.42
Tamilnadu	Tuticorin	0.80	4.91	8.08	0.80	4.92	8.08	0.12	5.00	8.08
Tamilnadu	Ennore	4.97	0.16	8.39	5.04	0.16	8.39	5.04	0.16	8.40
Puducherry	Puducherry	0.65	5.00	7.74	0.65	5.04	8.14	0.65	5.10	9.08
Andaman Nicobar Islands	Port Blair	2.88	6.15	9.32	2.88	6.15	9.32	2.88	6.15	9.32
Andhra Pradesh	Visakhapatnam	0.11	5.13	14.24	0.11	5.21	14.24	0.11	5.22	14.24
Andhra Pradesh	Kakinada	0.06	5.69	11.43	0.06	5.71	11.43	0.06	5.75	11.43
Odisha	Mahanadi	7.16	4.03	10.25	7.12	4.03	10.25	7.09	4.03	10.25
Odisha	Paradip	1.73	6.76	9.73	1.00	6.71	9.73	1.00	6.71	9.73
Odisha	Dhamra	2.57	6.97	11.00	2.57	6.93	11.00	2.57	6.95	11.00
West Bengal	Sandheads	5.02	7.28	10.65	5.02	7.09	10.65	5.02	7.12	10.65
West Bengal	Hooghly	3.00	7.07	9.00	3.00	6.96	9.00	3.00	6.93	9.00

Source: ICMAM Project Directorate

Statement 1.57 : Sea Water Quality
(c) : Coastal Water Quality - Total Nitrogen (TN)

Unit - μ mol/l

State	Location	Upto 2 kms			Upto 5 kms			All Distances		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Gujarat	Vadinar	19.90	82.13	139.53	7.90	79.88	139.53	7.90	78.54	139.53
Gujarat	Veraval	7.90	124.98	2381.90	7.90	124.98	2381.90	2.90	90.63	2381.90
Gujarat	Hazira	16.70	144.70	613.60	9.40	139.52	613.60	7.10	135.26	613.60
Maharashtra	Mumbai	7.80	346.12	867.34	7.80	336.62	867.34	3.00	281.10	867.34
Maharashtra	Worli	60.11	342.57	672.70	52.54	336.92	672.70	52.54	336.92	672.70
Maharashtra	Ratnagiri	1.49	48.74	631.67	1.25	40.96	631.67	1.25	37.67	631.67
Maharashtra	Malvan	5.41	50.74	92.22	5.41	51.21	93.31	5.41	51.21	93.31
Goa	Mandovi	2.09	15.80	78.88	2.09	15.31	79.90	2.09	15.31	79.90
Goa	Zuari	3.31	15.92	56.50	3.31	15.73	56.50	3.31	15.73	56.50
Kerala	Kochi	1.00	21.37	116.00	0.46	19.03	116.00	0.38	17.24	116.00
Lakshadweep	Kavaratti	0.44	9.13	44.07	0.44	7.55	44.07	0.44	6.86	44.07
Karnataka	Mangalore	1.81	17.55	54.72	1.81	15.87	54.72	1.81	14.92	54.72
Tamilnadu	Tuticorin	1.94	21.15	644.00	0.39	21.31	758.00	0.39	22.80	758.00
Tamilnadu	Ennore	24.97	3.10	540.42	23.60	0.87	540.42	23.46	0.46	540.42
Puducherry	Puducherry	1.86	20.65	127.40	1.58	20.66	127.40	1.58	20.93	127.40
Andaman Nicobar Islands	Port Blair	0.33	14.48	102.52	0.33	14.48	102.52	0.33	14.48	102.52
Andhra Pradesh	Visakhapatnam	1.78	82.43	658.00	1.37	76.00	658.00	1.37	73.39	658.00
Andhra Pradesh	Kakinada	0.89	63.03	792.00	0.89	58.09	792.00	0.89	54.89	792.00
Odisha	Mahanadi	39.91	2.85	150.00	39.98	2.85	150.00	39.77	2.85	150.00
Odisha	Paradip	1.34	35.10	227.56	1.34	34.25	227.56	1.34	34.25	227.56
Odisha	Dhamra	10.40	35.47	72.09	10.40	35.79	94.83	10.40	35.51	94.83
West Bengal	Sandheads	1.92	34.83	153.69	1.92	41.57	179.29	1.92	44.16	179.29
West Bengal	Hooghly	11.86	60.24	166.57	11.86	63.68	228.86	8.71	63.76	228.86

Source: ICMAM Project Directorate

Statement 1.57 : Sea Water Quality
Table (d) : Coastal Water Quality - Total Phosphorus (TP)

Unit - μ mol/l

State	Location	Upto 2 kms			Upto 5 kms			All Distances		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Gujarat	Vadinar	0.50	2.42	8.88	0.50	2.43	9.32	0.50	2.57	10.61
Gujarat	Veraval	0.44	4.70	147.98	0.44	4.70	147.98	0.40	2.82	147.98
Gujarat	Hazira	1.50	3.82	11.54	1.40	3.81	11.54	1.20	3.73	11.54
Maharashtra	Mumbai	0.50	5.22	44.20	0.50	4.72	44.20	0.50	4.22	44.20
Maharashtra	Worli	1.38	4.14	11.77	1.38	4.12	11.77	1.38	4.12	11.77
Maharashtra	Ratnagiri	0.44	1.39	19.45	0.30	1.37	19.45	0.20	1.39	19.45
Maharashtra	Malvan	0.69	1.67	5.48	0.69	1.64	5.48	0.69	1.64	5.48
Goa	Mandovi	0.17	1.90	23.71	0.17	1.91	23.71	0.17	1.91	23.71
Goa	Zuari	0.19	2.21	16.84	0.19	2.24	16.84	0.19	2.24	16.84
Kerala	Kochi	0.16	2.79	47.60	0.16	2.68	47.60	0.16	2.59	47.60
Lakshadweep	Kavaratti	0.13	1.47	5.86	0.11	1.54	5.86	0.11	1.54	5.86
Karnataka	Mangalore	0.42	2.33	8.91	0.25	2.07	8.91	0.23	1.99	8.91
Tamilnadu	Tuticorin	0.04	1.95	5.83	0.02	1.85	13.38	0.02	1.84	13.38
Tamilnadu	Ennore	2.83	0.02	67.14	2.69	0.02	67.14	2.69	0.02	67.14
Puducherry	Puducherry	0.20	2.35	12.88	0.20	2.25	12.88	0.13	2.20	12.88
Andaman Nicobar Islands	Port Blair	0.00	2.06	17.35	0.00	2.06	17.35	0.00	2.06	17.35
Andhra Pradesh	Visakhapatnam	0.05	29.46	446.00	0.05	25.45	446.00	0.05	24.11	446.00
Andhra Pradesh	Kakinada	0.05	7.48	135.00	0.05	6.82	135.00	0.05	6.35	135.00
Odisha	Mahanadi	10.52	0.58	80.62	10.38	0.58	80.62	9.87	0.45	80.62
Odisha	Paradip	0.32	5.18	125.62	0.29	4.98	125.62	0.29	4.98	125.62
Odisha	Dhamra	0.26	5.21	187.00	0.26	4.85	187.00	0.26	4.72	187.00
West Bengal	Sandheads	0.84	2.91	22.50	0.55	3.15	22.50	0.55	3.40	22.50

Source: ICMAM Project Directorate