

Chapter Three



Biodiversity

CHAPTER THREE

BIODIVERSITY

3.1 The term 'biodiversity' encompasses the variety of life on Earth. It is defined as the variability among living organisms and the ecological complexes of which they are part, including diversity within and between species and ecosystems. Biodiversity manifests at species genetic and ecosystem levels. Biodiversity has direct consumptive value in food, agriculture, medicine, industry, etc. It also has aesthetic and recreational value.

3.2 India is one of the 12 mega-biodiversity countries of the world. From about 70% of the total geographical area surveyed so far, 46,000 plant species and 81,000 animal species representing about 7% of the world's flora and 6.5% of the world's fauna, respectively, have been described. Out of the total twelve biodiversity hot spots in the world, India has two, one is the north east region and other the western ghats.

3.3 Though more than one-fifth of India's geographic area is recorded as forest area, it is not known with certainty how much forest area actually bears forest cover. The National Forest Policies (1952 and 1988) aim at having one third of country's land area under forest and tree cover. As per the latest State of Forest Report 2003, the forest cover in the country is 678,333 kmsq. and constitutes 20.64 percent of its geographic area. There is an increase of 2,795 kmsq or 0.41 percent in forest cover in year 2003 as compared to assessment made in 2001. The total tree cover of the country has been estimated as 99,896 km sq. or about 3.04 percent of the country's geographic area, which is 18,424 kmsq more than what was assessed in 2001.

3.4 Plant biodiversity as a national and global resource is extremely valuable but is

poorly understood, inadequately documented and often wasted. The preservation of biodiversity is both a matter of investment and insurance to a) sustain and improve agricultural, forestry and fisheries production, b) act as a buffer against harmful environmental changes, c) provide raw materials for scientific and industrial innovations, and d) safe guard transferring biological richness to future generations.

3.5 Biodiversity the world over is in peril because the habitats are threatened due to such development programmes as creation of reservoirs, mining, forest clearing, laying of transport and communication networks, etc. It is estimated that in the world wide perspective, slightly over 1000 animal species and sub-species are threatened with an extinction rate of one per year, while 20,000 flowering plants are thought to be at risk.

Conservation Measures

Biospheres:

3.6 Areas rich in biodiversity and encompassing unique and representative ecosystems are identified and designated as Biosphere Reserves. The goal is to facilitate conservation of representative landscape and India's immense biological diversity as described above. Till date, 14 Biosphere Reserves have been set up. The last one was set up in 30.3.2005 at Achankmar-Amarkantak in parts of Districts of MP and Chattisgarh State.

Project Tiger

3.7 As per the recommendations of a special task-force of the Indian Board of

Wildlife, Project Tiger was launched in 1973 with the following objectives:-

- To ensure maintenance of available population of tiger in India for scientific, economic, aesthetic, cultural and ecological value.
- To preserve, for all times, the areas of such biological importance as a national heritage for the benefit, education and enjoyment of the people.

3.8 At present, there are 28 Tiger Reserves spreading over 14 states and covering an area of about 37,761 sq. kms. The population of tigers is estimated through tiger census conducted once in 4 to 6 years. The last such census was conducted in 2001-02.

National Parks and Wild life Sanctuaries

The wild life Act provided for setting up National parks and sanctuaries for wild life. The basic idea in trying to encourage wild life is that human welfare is initially linked with it. The Government of India has pledged for all out efforts to conserve which not only seeks to protect and preserve what remains of wild fauna and flora but also seeks to augment this priceless national heritage.

3.9 Multipronged pressures on forests come from population, cattle grazing, fuel and fodder collection, industry and forest fires, etc. The remaining good forest cover is, therefore, estimated to be just 11% against the desirable 33% of the total land area as per the National Forest Policy. Up to the late seventies, forest land was a prime target for diversion for resettlement, agriculture and industrialization, and this trend was contained only by the Forest (Conservation) Act, 1980.

3.10 A two pronged strategy to increase forest cover essentially comprises

- Improving canopy cover in the forest land; and

- Undertaking afforestation in non-forest and degraded lands, preferably contiguous to forest blocks.

3.11 Realising the role of forests in controlling soil erosion, moderation of floods, recharging of ground aquifers, as habitat for wildlife, conservation of biodiversity and gene pool, etc., programmes were launched as early as the Second Five Year Plan for extensive Watershed Management followed later by establishment of a Protected Areas Network, under the Wildlife (Protection) Act, 1972, comprising of Biosphere Reserves, National Parks and Sanctuaries- both terrestrial and aquatic. This Network comprised of 14 Biosphere Reserves, 90 National Parks, 502 Wildlife Sanctuaries, along with such dedicated conservation programmes as Project Tiger, Crocodile Rehabilitation and Project Elephant. The Central Zoo Authority caters to the ex-situ conservation of wildlife through 275 zoos, deer parks, safari parks and aquaria, etc. India is also signatory to several International Conventions like CITES, International Whaling Convention (IWC); Convention on Migratory Species (CMS), World Heritage Convention (WHC), etc. India has recently taken the lead in the formation of the Global Tiger Forum.

Agro Biodiversity

3.12 The National Bureau of Plant Genetic Resources (NBGR) established in 1976 as an institution under Indian Council of Agricultural Research (ICAR) emerged as an important organization dealing with various establishments of plant genetic resources. The organization is entrusted with the vital responsibility of germ plasm, exchange with appropriate quarantine measures, survey exploration, their organization, planning and coordination, comprising evaluation, documentation and conservation of diverse plant genetic resources. The National Gene Bank has also been established within the complex. Within

the new trade related intellectual property rights (TRIPS) within World Trade Organisation related agreements, documentation of our genetic resources is very important. The documentation of fish genetic resources is the responsibility of National Bureau of Fish

Genetic Resource, Lucknow also an institution under ICAR. The National Bureau of Animal Genetic Resources located at Karnal maintains the germ plasm of Indian Cattle and Buffalo breeds. This organization is also an institution of ICAR umbrella.

TABLE 3.1.1 : NUMBER AND STATUS OF PLANT SPECIES IN INDIA

Sl. No.	Type	No. of Known Species in the World	No. of Known Species in India	Percentage of Occurrence in India	No. of Species Endemic	No. of Species Endangered	No. of Species Extinct
1	2	3	4	5	6	7	8
I	Flowering Plants						
1	Gymnosperm	650	48	7.38	8*	7*	Not Known
2	Angiosperm	250000	17672	7.00	5725*	1700*	28
II	Non-flowering Plants						
1	Fern & Fernallics	10000	1135	11.35	193*	113*	Not Known
2	Algae	40000	6500	16.25	1100*	120*	Not Known
3	Fungi	70000	14500	20.71	3500*	140*	Not Known
4	Lichens	13500	2021	14.97	417*	400*	Not Known
5	Liverworts	7500	852	11.26	260*	100*	Not Known
6	Mosses	7000	2000	28.6	608*	115	Not Known

Source : Botanical Survey of India, Kolkata.

* : Approximate

India has a rich heritage of species and genetic strains of flora. Overall about six percent of world species are found in India. It is estimated that India is tenth among the plant rich countries of the world and sixth among the centres of diversity and origin of agrodiversity. Out of the total twelve biodiversity hot-spots in the world, India has two, one is the north east region and other is western ghats (Khoshoo, T.N., 1995). The growing urbanization and industrialization causes the decrease of Natural habitats, which further results in the loss to biological diversity. Biodiversity, once lost cannot be recovered.

**TABLE 3.1.2 : RARE AND THREATENED SPECIES
(VASCULAR PLANTS)**

Sl. No.	Category	Approximate Number
1	2	3
1	Rare	287
2	Vulnerable	167
3	Endangered	1366
4	Possibly Extinct	40
5	Extinct	28

Source : Botanical Survey of India, Kolkata.

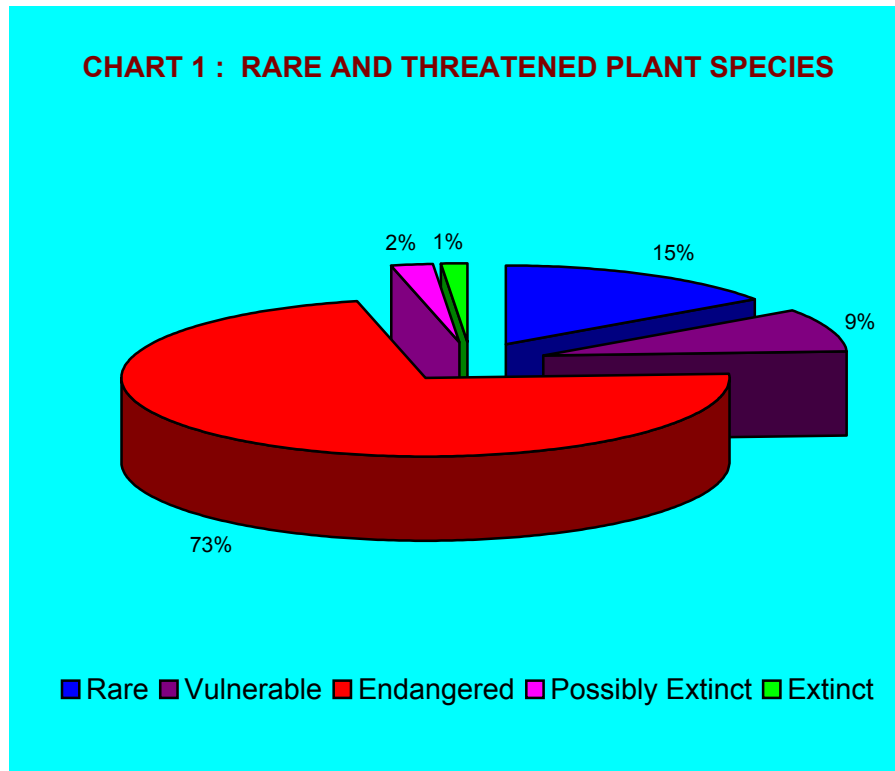


TABLE 3.1.3 : REFERENCE COLLECTIONS OF FLORA

Sl. No.	Category	Total Number	Total Holdings of Collections and Specimens
1	2	3	4
1	Herbarium	51	4594795
2	Museums	18	60100

Source : Botanical Survey of India, Kolkata.

TABLE 3.1.4 : CONSERVATION MEASURES

Sl. No.	Category	Number	Total Geographical Area (Sq. Km.)
1	2	3	4
I	Within Habitats (insitu)		
1	Biosphere Reserves	13	53849
2	National Parks	89	40631
3	Sanctuaries	484	115374
4	Reserve Forests	NA	416547
5	Protected Forests	19	223321
II	Outside Habitats (ex situ)		
1	Botanical Gardens	120	26.24
2	Gene Banks	NA	NA

Source : Botanical Survey of India, Kolkata.

TABLE 3.1.5 : BIOSPHERE RESERVES SETUP IN INDIA

Sl. No.	Name of Biosphere Reserve	Area (in sq.km.)	Date of Notification	Location (State) and Bio-Geographic Zones
1	2	3	4	5
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 (Uttanchal)-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	5112.00	02.09.1998	Part of Siang and Debang Valley in Arunachal Pradesh-East Himalayas
11	Pachmarhi	4926.28	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 Kanchanjunga Hills in Sikkim-East Himalayas
13	Agasthyamalai	1701.00	12.11.2001	Neyyar, Peppara and Shenduruny Wildlife Sanctuaries and their Adjoining Areas in Kerala
14	Achankmar-Amarkantak	3835.31	30.3.2005	Part of Anupur and Dindori Distt., of MP, part of Bilaspur distts., of Chhattisgarh State

Source: Ministry of Environment and Forests

**TABLE 3.1.6 : STATUS OF EX-SITU CONSERVATION (BASE COLLECTION)
OF ORTHODOX SEEDS, AT -20⁰ C**

(As on 31st March, 2005)

Sl. No.	Crop Group	Species	Accessions*
1	2	3	4
1	Cereals	92	122652
2	Milletts & Forages	20	43266
3	Pseudo Cereals	20	4172
4	Grain Legumes	59	42905
5	Oilseeds	21	38181
6	Fibre Crops	16	8674
7	Vegetables	55	17150
8	Fruits	7	172
9	Medicinal & Aromatic Plants & Narcotics	196	2683
10	Spices & Condiments	10	607
11	Agro-Forestry	6	302
12	Duplicate Safety Samples	2 (included in grain legumes)	10235
Total		502	290999

Source : National Bureau of Plant Genetic Resources

* : The figure includes 2535 released varieties and 646 genetic stocks in respective crop groups.

TABLE 3.1.7 : STATUS OF IN-VITRO CONSERVATION*(As on 31st March, 2005)*

Sl. No.	Crop groups/Crops	Storage Temp. (°C)	Optimum Subculture Interval (Months)	No. of Accessions in Culture
1	2	3	4	5
I	Fruits			
1	Musa spp.	25	8-12	383
2	Actinidia spp	25	10--12	3
3	Aegle marmelos	25	12	1
4	Fragaria spp	25	8-10	48
5	Prunus spp.	25	4--6	2
6	Rubus spp.	25	8--10	5
7	Malus spp.	25	4--6	4
8	Morus sp.	25	8--10	48
9	Vitis vinifera	25	3--4	3
II	Bulbous Crops			
1	Allium sativum	25, 4	6-12	139
2	Allium spp.	25, 4	4-23	16
III	Tuber Crops			
1	Alocasia spp.	25	10	3
2	Colocasia esculenta	25	8-10	141
3	Dioscorea spp.	25	8-12	85
4	Ipomoea batatas	25	8-12	255
5	Xanthosoma sagittifolium	25	10	9
IV	Medicinal and Aromatic Plants			
1	Aristolochia indica	25	-	1
2	Bacopa monnieri	25	6	16
3	Centella asiatica	-	-	9
4	Coleus aromaticus	-	-	3
5	Coleus forskohlii	25	12	14
6	Cholorophytum sp.	-	-	2
7	Costus speciosus	-	-	1
8	Curculigo orchoides	-	-	2
9	Digitalis spp.	4	11	6
10	Eremostachys superba	4	10	2
11	Gentiana kurroo	4	12	1
12	Kaempferia galanga	25	-	5
13	Kaempferia rotundata	25	-	4
14	Mentha sp.	4	12	24
15	Peristrophe bicalyculata			1
16	Picrorhiza kurroa	4	12	9
17	Plumbago zeylanica	25	6-10	11
18	Pogostemon patchouli	25	12	2
19	Pycnanthemum spp.	4	12	4
20	Rauvoljia spp.	25	12	11
21	Rheum spp.	4	12	5
22	Saussurea lappa	4	12	3
23	Swertia chirayta	4	6	3
24	Tylophora indica	25	6--12	10
25	Valeriana wallichii	4	12	10
V	Spices			
1	Curcuma spp.	25	6-10	117
2	Elettaria spp	25	15	5
3	Piper spp.	25	10-22	10
4	Zingiber spp.	25	8-24	184
5	Vanilla planifolia	25	6	4
VI	Industrial Plants			
1	Humulus lupulus	25	-	8
2	Simmondsia chinensis	25	6	12
VII	Others			
	Cicer microphyllum	-	-	1
	Gladiolous cv.	-	-	4
Total				1649

Source : National Bureau of Plant Genetic Resources

TABLE 3.1.8 : STATUS OF GERMLASM AT NATIONAL CRYOBANK*(As on 31st March, 2005)*

Sl. No.	Category	No. of Species	No. of Accession
1	2	3	4
I	Intermediate & Recalcitrant		
1	Fruits & Nuts		1419
2	Spices & Condiments		95
3	Plantation Crops		19
4	Agroforestry & Firestry species		1712
5	Industrial crops		145
II	Orthodox		
1	Cereals		208
2	Millet and Forages		282
3	Pseudocereals		76
4	Grain Legumes		616
5	Oilseeds		339
6	Fibre		58
7	Vegetables		411
8	Medicinal & Aromatic Plants		638
9	Narcotics & dyes		32
10	Miscellaneous		9
Total		573	6059

Source : National Bureau of Plant Genetic Resources

TABLE 3.1.9 : STATUS OF CRYOPRESERVATION OF POLLEN*(As on 31st March, 2005)*

Sl. No.	Plant Species	No. of Accession
1	2	3
1	Brassica spp. (oleracea, napus, campestris, carinata, juncea, nigra)	43
2	Camellia sinensis	1
3	Cicer microphyllum	1
4	Citrus spp.	5
5	Eruca species	2
6	Garcinia spp.	4
7	Mangifera indica	132
8	Poncirus trifoliata	1
9	Raphanus sativus	4
10	Sesamum spp.	1
11	Zea mays & allied genera	9
12	Litchi chinensis	19
Total		222

Source : National Bureau of Plant Genetic Resources

TABLE 3.2.1 : STATE/UT WISE FOREST AREA*(Sq.km)*

Sl. No.	State/UT	Geographic Area	Recorded Forest Area, 2003				Percentage of Forest to Geo. Area
			Reserved Forest	Protected Forest	Unclassed Forest	Total Forest Area	
1	2	3	4	5	6	7	8
1	Andhra Pradesh	275069	50479	12365	977	63821	23.20
2	Arunachal Pradesh	83743	10178	9536	31826	51540	61.55
3	Assam	78438	18060	0	8958	27018	34.45
4	Bihar	94163	693	5779	1	6473	6.87
5	Chhattisgarh	135191	25782	24036	9954	59772	44.21
6	Delhi	1483	78	7	0	85	5.73
7	Goa	3702	237	822	165	1224	33.06
8	Gujarat	196022	14155	395	4563	19113	9.75
9	Haryana	44212	249	1158	151	1558	3.52
10	Himachal Pradesh	55673	1896	33043	2094	37033	66.52
11	Jammu & Kashmir	222236	2551	17643	36	20230	9.10
12	Jharkhand	79714	4387	19185	33	23605	29.61
13	Karnataka	191791	29550	3585	9949	43084	22.46
14	Kerala	38863	11098	170	0	11268	28.99
15	Madhya Pradesh	308245	58734	35587	900	95221	30.89
16	Maharashtra	307713	49217	8196	4526	61939	20.13
17	Manipur	22327	1467	4171	11780	17418	78.01
18	Meghalaya	22429	1112	12	8372	9496	42.34
19	Mizoram	21081	7909	3568	5240	16717	79.30
20	Nagaland	16579	308	508	7813	8629	52.05
21	Orissa	155707	26329	15525	16282	58136	37.34
22	Punjab	50362	44	1137	1903	3084	6.12
23	Rajasthan	342239	11860	17652	2976	32488	9.49
24	Sikkim	7096	5452	389	0	5841	82.31
25	Tamil Nadu	130058	19388	2183	1306	22877	17.59
26	Tripura	10486	3588	664	2041	6293	60.01
27	Uttar Pradesh	240928	11078	2425	3323	16826	6.98
28	Uttaranchal	53483	23827	10673	162	34662	64.81
29	West Bengal	88752	7054	3772	1053	11879	13.38
30	Union Territories	9478	3159	4248	3	7410	78.18
Total		3287263	399919	238434	136387	774740	23.57

Source : State of Forest Report 2003

India has 77.47 million hectares of recorded forest area in March 2003. This accounts for 23.57% of total geographic area. Per Capita availability of forests in India is 0.05 ha which is much lower than the world average of 0.8 ha.

CHART 2 : FOREST COVER IN DIFFERENT STATES AS COMPARED TO TOTAL GEOGRAPHIC AREA

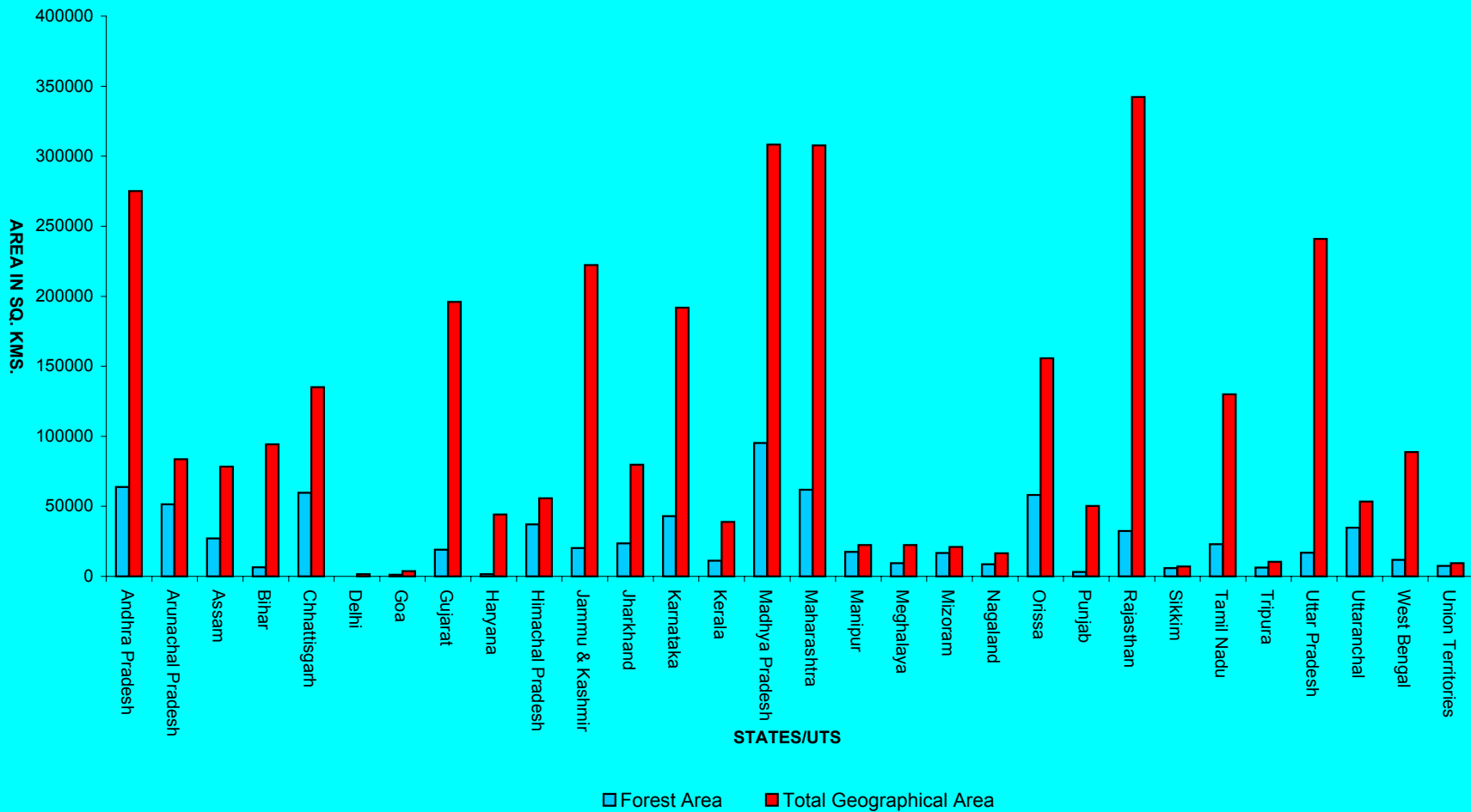


TABLE 3.2.2 : FOREST COVER IN INDIA

Class	Area (Sq. Km¹)	Percentage of Geographic Area
1	2	3
Forest Cover		
Very Dense Forest	51285	1.56
Moderately Dense Forest	339279	10.32
Open Forest	287769	8.76
Total Forest Cover*	678333	20.64
Non-Forest Cover		
Scrub	40269	1.23
Non-forest**	2568661	78.13
Total Geographic Area	3287263	100

Source : State of Forest Report, 2003

* : Includes 4461 km² under mangroves (0.14% of country's geographic area)

** : Excludes scrubs and includes water bodies

TABLE 3.2.3(a) : FOREST AREA BY OWNERSHIP(during 2001-02)

(Sq.km)

Sl. No.	State/ Union Territory	Forest Department					Others		
		Reserved	Protected	Unclassed	Total	Area Under Sanctioned Working Plans	Revenue Department Forests	Corporate Bodies Forest/ Community Ownership	Private Forest
1	2	3	4	5	6	7	8	9	10
1	A&N Islands	2928.76	4241.93	Nil	7170.69	7170.69	Nil	Nil	Nil
2	Andhra Pradesh	50479.00	12365.00	970.00	63814.00	-	-	-	-
3	Arunachal Pradesh	10177.60	9535.79	31826.52	51540.00	1053.91	-	NA	NA
4	Assam	15203.00	Nil	8957.00	24160.00	15203.00	5893.00	Nil	Nil
5	Bihar	664.23	5834.73	-	6498.96	6498.96	12200.00	10160.00	-
6	Chhattisgarh	25782.17	24036.10	9954.12	59772.39	-	-	-	-
7	Dadra & Nagar Haveli	198.76	4.82	Nil	203.58	198.76	Nil	Nil	Nil
8	Goa	235.89	795.51	192.98	1224.38	-	2477.62	-	200.00
9	Gujarat	14180.03	377.02	4523.94	19080.99	13873.44	-	-	-
10	Haryana	249.00	1158.00	17.00	1424.00	867.00	-	-	133.00
11	Himachal Pradesh	1896.00	33043.00	977.00	35916.00	24535.00	-	42.00	1075.00
12	Jammu & Kashmir	2551.20	17643.00	36.00	20230.00	20194.00	NA	NA	NA
13	Jharkhand	4387.20	19184.78	33.49	23605.47	14329.49	-	-	-
14	Karnataka	28689.97	3930.70	5230.99	37851.66	37651.66	124.20	308.42	-
15	Kerala	11119.63	128.66	15.5	11263.79	2944.33	Nil	Nil	Nil
16	Madhya Pradesh	58734.00	35587.00	900.00	95221.00	79592.00	na	na	na
17	Maharashtra	43916.00	7992.00	3459.00	55367.00	42617.00	2449.00	3563.00	560.00
18	Manipur	1467.00	4171.00	11780.00	17418.00	NA	NA	NA	NA
19	Meghalaya	712.74	12.39	399.48	1124.61	-	-	-	-
20	Mizoram	7127.00	3568.00	5240.00	15935.00	-	-	1369.00	-
21	Nagaland	85.83	507.56	192.47	-	-	-	-	7621.07
22	Orissa	26329.12	15524.46	20.55	41874.13	30281.45	16261.34	-	12.29
23	Punjab	43.36	1119.40	191.06	1353.82	1353.51	-	859.65	842.19
24	Rajasthan	11859.95	17651.68	2976.38	32488.01	-	-	-	-
25	Sikkim	2261.00	285.00	104.00	2650.00	Nil	Nil	Nil	Nil
26	Tamil Nadu	19388.00	2183.00	1306.00	22877.00	20751.00	21317.00	2500.00	214.00
27	Tripura	3588.18	509.03	2195.47	6292.68	Nil	Nil	Nil	Nil
28	Uttar Pradesh	11105.00	2530.00	3191.00	16826.00	-	15.00	53.00	14.00
29	Uttaranchal	23819.76	124.96	44.04	23988.76	23819.76	5140.55	5469.85	62.36
30	West Bengal	7113.79	3958.58	1018.11	12090.48	395.29	Nil	Nil	Nil

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FOREST

Source : Forestry Statistics India, 2003

Note: Blank cell indicates information is not available

TABLE 3.2.3(b) : FOREST AREA BY COMPOSITION (during 2001-02)

(sq.km)

FORESTS

Sl. No.	State/ Union Territory	Coniferous forest			Non-coniferous Forest				Coniferous & Non-coniferus mixed
		Chir	Deodar	Others Conifers	Sal	Teak	Mangrove	Others	
1	2	3	4	5	6	7	8	9	10
1	Andhra Pradesh	-	-	-	47.00	9145.00	333.00	54289.00	-
2	Arunachal Pradesh	243.00	NA	3530.00	NA	NA	NA	47767.00	NA
3	Chhattisgarh	Nil	Nil	Nil	24244.88	5633.13	-	29894.38	-
4	Dadra & Nagar Haveli	Nil	Nil	Nil	Nil	Nil	Nil	203.58	-
5	Goa	-	-	-	-	95.10	18.05	1111.23	-
6	Gujarat	-	-	-	-	4859.24	1577.72	12644.02	-
7	Haryana	23.00	-	-	30.00	-	-	1371.00	-
8	Himachal Pradesh	1336.00	854.00	6760.00	183.00	129.00	476.00	6170.00	15908.00
9	Jammu & Kashmir	1825.00	1075.00	5369.00	-	-	-	1885.00	10076.00
10	Jharkhand	NA	NA	NA	23605.47	NA	NA	NA	NA
11	Karnataka	Nil	Nil	Nil	Nil	Nil	Nil	11413.84	-
12	Kerala	Nil	Nil	Nil	Nil	748.72	15.50	10499.57	Nil
13	Madhya Pradesh	-	-	-	3716.72	17040.62	-	29977.81	-
14	Maharashtra	Nil	Nil	Nil	Nil	9508.00	108.00	33001.00	Nil
15	Meghalaya	Nil	Nil	145.14	Nil	Nil	Nil	732.94	Nil
16	Orissa	NA	NA	NA	972.15	608.96	219.00	29751.94	-
17	Punjab	121.75	-	-	-	-	-	26.59	2907.32
18	Rajasthan	-	-	-	-	942.24	-	31545.77	-
19	Sikkim	Nil	Nil	949.80	24.55	Nil	Nil	-	1192.73
20	Tamil Nadu	-	-	-	-	195.00	-	250.00	-
21	Tripura	Nil	Nil	Nil	1829.00	507.34	947.16	2092.86	916.32
22	Uttar Pradesh	-	-	-	1876.00	270.00	-	12449.00	-
23	Uttaranchal	4121.66	246.75	1196.97	2563.67	216.25	-	2936.99	12706.43
24	West Bengal	-	-	89.00	-	-	2109.00	-	9892.48

Source : Forestry Statistics India, 2003

Note: Blank cell indicates information is not available

Nonresponding States A & N Island, Assam, Bihar, Delhi, Manipur, Mizoram and Nagaland.

TABLE 3.2.4 : CUMULATIVE AREA OF FOREST PLANTATIONS BY ALL AGENCIES IN THE STATES/UT'S FROM 1951 TO 1999

('000 ha)

Sl. No.	State/UT's	Total Cumulative Plantation Area	Area of Block Plantation	Area Converted from Seedlings Distributed
1	2	3	4	5
1	Andhra Pradesh	2496.56	1260.30	1236.26
2	Arunachal Pradesh	160.95	155.73	5.22
3	Assam	451.78	433.58	18.20
4	Bihar	1326.23	942.12	384.11
5	Delhi	44.05	20.18	23.87
6	Goa	65.60	46.04	19.56
7	Gujarat	2981.08	1293.95	1687.13
8	Haryana	742.74	597.02	145.72
9	Himachal Pradesh	719.44	665.84	53.60
10	Jammu & Kashmir	382.43	323.04	59.39
11	Karnataka	2163.22	1573.19	590.03
12	Kerala	688.12	483.63	204.49
13	Madhya Pradesh	3364.13	2848.52	515.61
14	Maharashtra	2965.07	2130.39	834.68
15	Manipur	154.76	139.69	15.07
16	Meghalaya	164.48	130.67	33.81
17	Mizoram	308.55	255.73	52.82
18	Nagaland	174.20	116.43	57.77
19	Orissa	1827.41	1458.49	368.92
20	Punjab	512.38	417.60	94.78
21	Rajasthan	1410.10	1150.79	259.31
22	Sikkim	119.23	107.53	11.70
23	Tamil Nadu	2268.18	1616.18	652.00
24	Tripura	246.64	215.61	31.03
25	Uttar Pradesh	4185.77	1844.36	2341.41
26	West Bengal	1157.73	610.93	546.80
27	A. & N. Islands	88.14	83.13	5.01
28	Chandigarh	10.07	9.85	0.22
29	Dadra & Nagar Haveli	18.36	11.01	7.35
30	Daman & Diu	1.39	0.85	0.54
31	Lakshadweep	2.50	0.57	1.93
32	Pondicherry	7.88	1.91	5.97
Total		31209.17	20944.86	10264.31 *

Source : State of Forest Report, 1999

* : The area has been estimated by FSI using 1990-1999 figures of NAEB MOEF where breakup of block plantation and seedlings distributed are available.

TABLE 3.2.5(a) : COMPARATIVE SITUATION OF FOREST COVER IN INDIA**(Sq. Km.)**

Sl. No.	States/Uts	2003 Assessment	2001 Assessment	1999 Assessment	1997 Assessment	Change in 2003 (3-4)	Change in 2001 (4-5)	Change in 1999 (5-6)
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	44419	44637	44229	43290	-218	+408	+939
2	Arunachal Pradesh	68019	68045	68847	68602	-26	-802	+245
3	Assam	27826	27714	23688	23824	112	+4026	-136
4	Bihar	5558	5720	4830	4832	-162	+890	-2
5	Chhatisgarh	55998	56448	56693	56435	-450	-245	+258
6	Delhi	170	111	88	26	59	+23	+62
7	Goa	2156	2095	1251	1252	61	+844	-1
8	Gujarat	14946	15152	12965	12578	-206	+2187	+387
9	Haryana	1517	1754	964	604	-237	+790	+360
10	Himachal Pradesh	14353	14360	13082	12521	-7	+1278	+561
11	Jammu & Kashmir	21267	21237	20441	20440	30	+796	+1
12	Jharkhand	22716	22637	21644	21692	79	+993	-48
13	Karnataka	36449	36991	32467	32403	-542	+4524	+64
14	Kerala	15577	15560	10323	10334	17	+5237	-11
15	Madhya Pradesh	76429	77265	75137	74760	-836	+2128	+377
16	Maharashtra	46865	47482	46672	46143	-617	+810	+529
17	Manipur	17219	16926	17384	17418	293	-458	-34
18	Meghalaya	16839	15584	15633	15657	1255	-49	-24
19	Mizoram	18430	17494	18338	18775	936	-844	-437
20	Nagaland	13609	13345	14164	14221	264	-819	-57
21	Orissa	48366	48838	47033	46941	-472	+1805	+92
22	Punjab	1580	2432	1412	1387	-852	+1020	+25
23	Rajasthan	15826	16367	13871	13353	-541	+2496	+518
24	Sikkim	3262	3193	3118	3129	69	+75	-11
25	Tamil Nadu	22643	21482	17078	17064	1161	+4404	+14
26	Tripura	8093	7065	5745	5546	1028	+1320	+199
27	Uttar Pradesh	14118	13746	10756	10751	372	+2990	+5
28	Uttaranchal	24465	23938	23260	23243	527	+678	+17
29	West Bengal	12343	10693	8362	8349	1650	+2331	+13
30	A. & N. Islands	6964	6930	7606	7613	34	-676	-7
31	Chandigarh	15	9	7	7	6	+2	+0
32	Dadra & Nagar Haveli	225	219	202	204	6	+17	-2
33	Daman & Diu	8	6	3	3	2	+3	0
34	Lakshadweep	23	27	0	0	-4	+27	0
35	Pondicherry	40	36	0	0	4	+36	0
Total		678333	675538	637293	633397	+2795	+38245	+3896

Source : State of Forest Report, 2003

In the year 2003, as compared to 2001, the total forest cover had increased by 2795 Sq. Kms. The states which have shown significant decrease in the forest covers are Madhya Pradesh, Chhatisgarh, Gujarat, Haryana, Maharashtra, Karnataka, Punjab, Rajasthan. Whereas the states of Meghalaya, Mizoram, Manipur, Tamil Nadi, Tripura, West Bengal, Uttaranchal have shown an increase in forest cover. However, it has increased in 2001 by 38245 Sq. Kms. as compared to 1999.

TABLE 3.2.5(b) : CHANGES IN FOREST COVER OF THE NORTH-EASTERN REGION

(Sq. Km.)

Sl. No.	State	Forest Cover 2003 Assessment	Changes Observed during different assessments				
			1993-95	1995-97	1997-99	1999-2001	2001-03
1	2	3	5	6	7	8	9
1	Arunachal Pradesh	68019	- 40	- 19	+ 245	- 802	- 26
2	Assam	27826	- 447	- 237	- 136	+ 4026	+ 112
3	Manipur	17219	- 63	- 140	- 34	- 458	+ 293
4	Meghalaya	16839	- 55	- 57	- 24	- 49	+ 1255
5	Mizoram	18430	- 121	+ 199	- 437	- 844	+ 936
6	Nagaland	13609	- 57	- 70	- 57	- 819	+ 264
7	Tripura	8093	0	+ 8	+ 199	+ 1320	+ 1028
Total		170035	- 783	- 316	- 244	+ 2374	+ 3532

Source : State of Forest Report, 2003

The forest cover in the North-Eastern Region (NER) is about 67% of the Geographical Area.

The forest cover decrease in the NER was maximum during the year 1993-95. However, there has been significant increase in the forest cover in 2003 over the year 2001 by 3532 sq. km. mainly due to increase in the forest area cover in most of the North East States except Arunachal Pradesh.

Table: 3.2.6: Forest Products of India

('000 cum)

Sl. No.	Forest Produce		1991	1992	1993	1994	1995
1	2		3	4	5	6	7
1	Roundwood	C	10055	10200	10345	10489	10636
		NC	256732	261427	266123	270818	275615
2	Fuelwood	C	7286	7429	7572	7715	7860
		NC	235000	239600	244200	248800	253500
3	Industrial Roundwood	C	2769	2771	2773	2774	2776
		NC	21732	21827	21923	22018	22115
4	Pulp wood	C	145	145	145	145	145
		NC	1063	1063	1063	1063	1063
5	Sawnwood	C	2500	2500	2500	2500	2500
		NC	14960	14960	14960	14960	14960
6	Wood based Pannels		378	357	348	348	348
7	Veneer Sheets		24	18	7	7	7
8	Plywood		250	231	245	245	245
9	Particle Board		59	60	60	60	60
10	Fibre Board		45	48	36	36	36
11	Wood Pulp		986	987	1147	1196	1205
12	News Print		300	320	320	350	400
13	Printing & Writing Paper		990	1060	1085	1112	1150

Source: Forestry Statistics India, 2000

C : Coniferous

NC : Non Coniferous

TABLE 3.2.7 (a) :STATE-WISE PRODUCTION OF FOREST PRODUCE

Sl. No.	State/Union Territory	Round Wood				Woof Fuel		Canes/Rattans		Bamboo	
		C (cum)	NC (cum)	C (cum)	NC (cum)	(cum)	(cum)				
		2000-01	2000-01	2001-02	2001-02	2000-01	2001-02	2000-01	2001-02	2000-01	2001-02
1	2	3	4	5	6	7	8	9	10	11	12
1	Andhra Pradesh	-	29490.08	-	18364.80	32073.45	4191.16	-	-	66476.69	58182.91MT
2	Arunachal Pradesh	2057.00	-	15546	-	23265.07	38221.76	26112889RMT	10627920RMT	136247Nos.	28398Nos.
3	Assam	Nil	Nil	Nil	Nil	277.86	6681.94	NA	NA	5Lakh NTAD	5 Lakh NTAD
4	Chhattisgarh	Nil	60092.00	Nil	115435.00	109655.17	129640.69	Nil	Nil	71046 NT	77031 NT
5	Goa	-	10144.00	-	13538.37	22369.63	23944.24	7560RMT	259600RMT	936000RMT	611952 RMT
6	Gujarat	-	10129.38	-	9671.11	30963.73	44203.51	.60MT	7.3MT	128281MT	64917 MT
7	Haryana	-	125345.00	-	110937.00	83287.00	70647.00	-	-	19.90MT	52 MT
8	Himachal Pradesh	5451.54	28218.93	10397.11	23196.41	-	8700.80	Nil	Nil	4087.27MT	4829.17 Mt.
9	Jammu & Kashmir	102480.00	-	152180	-	5859.20	8700.80	393039Nos.	441592 Nos.	224819CUM	191152CUM
10	Karnataka	-	39856.00	-	54056.00	294118.00	313453.00	1390456Nos.	820385 Nos.	10594Nos.	Nil
11	Kerala	-	31299.00	-	38915.00	10131.00	13978.00	Nil	Nil	111070.675NT	97672.023 NT
12	Madhya Pradesh	-	242011.66	-	564162.07	323659.50	499224.00	Nil	Nil	187619Nos.	213417 Nos.
13	Maharashtra	Nil	56.00	Nil	45.00	152.00	107.00	-	-	19840422Nos.	17843568 Nos.
14	Mizoram	Nil	4.84	Nil	6.30	6481.06	Nil	439250RMT	189250 Nos.-	223450Nos.	35430 Nos.
15	Orissa	-	33867.49	-	10423.67	19280.30	19413.40	-	-	7597.2MT	116.35 MT
16	Punjab	-	5051.00	1995	141826.00	193267.00	6930.00	-	-	808895Nos.akh	493752 Nos.
17	Rajasthan	-	25675.08	-	22541.36	62295.11	487421.40	Nil	Nil	19.26L	17.98 Lakh
18	Sikkim	Nil	nil	Nil	Nil	297.61	168.29	Nil	Nil	199124.86MT	138651 MT
19	Tamil Nadu	-	229.64	-	142273.00	181689.00	110528.00	1737 Bundles	30 Bundles	3578720.00	3368200 Nos.
20	Tripura	-	297.66	-	894.35	2474.72	4631.96	.12MT	Nil	54480Nos.	-
21	Uttar Pradesh	-	177182.00	-	171297.00	28490.00	25561.00	Nil	Nil	89.38NT	119.13 NT
22	Uttaranchal	104829.08	91015.48	112045.53	114737.49	7509.39	6791.80				
23	West Bengal	3686.00	45411.00	5252	22853.00	189735.00	270729.00				
	Total	263410.62	910469.24	297415.64	1575172.92	1627033.20	2093868.75				

Source: Forestry Statistics in India, 2003

Note: Blank cell indicates information is not available

C : Coniferous

NC : Non- coniferous

TABLE 3.2.7(a) :STATE-WISE PRODUCTION OF FOREST PRODUCE --Concl.d.

FORESTS

Sl. No.	State/Union Territory	Sal Seed (M. Tonne)		Tendu/Kendu/Biddi Leaves (M. Tonne)		Gums (Metric Tonne)		Resin (MetricTonne)	
		2000-01	2001-02	2000-01	2001-02	2000-01	2001-02	2000-01	2001-02
1	2	13	14	15	16	17	18	19	20
1	Andhra Pradesh	-	-	56192.16	53239.12	78.08	89.50	-	-
2	Arunachal Pradesh					NA	NA	1199.74	1115.65
3	Chhattisgarh	33300.00	47700.00	78640.00	66640.00	168.61	132.35	Nil	-
4	Gujarat	-	-	2237.55	2030.35	0.30	0.93	-	-
5	Himachal Pradesh					-	-	7357.00	7354.00
6	Jammu &Kashmir					Nil	Nil	10958.00	10694.00
7	Jharkhand	1282.86	NA	3924.63	2774.17				
8	Karnataka	Nil	Nil	1278.00	1171.00	8.92	4.37	0.00	0.00
9	Kerala					Nil	Nil	121.00	155.50
10	Madhya Pradesh	104.49	120.60	117960.00	84880.00	78.36	65.89	Nil	Nil
11	Maharashtra	-	-	33125.00	29467.00	13.00	10.00	Nil	-
12	Orissa	20609.27	7494.59	51900.00	40700.00	90.60		Nil	
13	Punjab					-	-	80.86	86.00
14	Rajasthan	Nil	Nil	23815.24	18127.48				
15	Uttar Pradesh					45.00		-	
16	Uttaranchal	NA	Nil	NA	628.09	-	-	16359.49	20796.59
17	West Bebgal	1843.37	NA	371.22	NA				

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Source: Forestry Statistics in India, 2003

Note: Blank cell indicates information is not available

C : Confiferous

NC : Non- conserous

TABLE 3.2.7 (b) :STATE-WISE PRODUCTION OF NON-TIMBER FOREST PRODUCT(NTFP)

(Metric tonne)

State/Union Territory	Sl. No.	Name of NTFP	During	
			2000-01	2001-02
1	2	3	4	5
Andhra Pradesh	1	Adda Leaf	1050.6	391.2
	2	Wild Brooms	35.0	113.3
	3	Sheekakai	173.4	257.7
	4	Amia	-	-
		(a) Green Amia	-	511.7
		(b) Dry Amia	146.7	76.6
	5	Cleaning Nuts	7601.0	33.8
	6	Chiranja	27.7	37.0
	7	Rock Bee Honey	199.1	161.2
	8	Apiary Honey	4.0	5.0
	9	Myrobalans	1950.7	1068.5
	10	Mohwa Seed	939.3	667.1
	11	Mohwa Flower	379.5	1136.0
	12	Marking Nuts	775.1	579.1
	13	Nuxvomica	193.8	186.0
	14	Pungam Seed	260.7	654.2
	15	Naramamdi Bark	331.6	107.9
	16	Rawfa Serpentina	0.2	1.7
	17	Soap Nuts	166.0	241.9
	18	Honey Wax	2.4	3.1
	19	Tamarind	-	-
		(a) Seeded	11057.3	5309.3
	(b) Dseeded	1216.8	1065.6	
	(c) Seed	1436.5	1017.8	
20	Teripds	8.7	0.8	
21	Maredugeddal	206.5	103.0	
22	Sugandipala	0.1	-	
Chhattisgarh		Harra	6300.0	6100.0
Gujarat		Grass & Grazing	8754.6	10236.7
Haryana	1	Grass	515.0	749.0
	2	Bhabbar Grass	38.0	28.0
	3	Fruits	NA	NA
	4	Others	NA	NA
Himachal Pradesh	1	Medicinal Herbs	1972.0	2491.0
	2	Resin	7357.0	7354.0
	3	Bhabbar Grass	40.0	351.0
	4	Other produces	215.0	198.0
Jammu & Kashmir	1	Balasdona Roots	7.5	4.4
	2	Anardana	160.6	304.2
	3	Artemisia	49.6	-
	4	Bunufsha	33.6	72.1
	5	Diascorea	353.5	258.4
	6	Guchies	7.0	17.2

TABLE 3.2.7 (b) :STATE-WISE PRODUCTION OF NTFP...Continud

State/Union Territory	Sl. No.	Name of NTFP	During	
			2000-01	2001-02
1	2	3	4	5
	7	Rasount Dhoop	-	1.0
	8	Dhoop	139.6	210.3
	9	Others	119.3	39.1
	10	Kour	113.0	88.2
	11	Kikar Singhl	16.8	5.1
	12	Mushk Bala	93.3	43.5
	13	Bram Booti	52.3	46.7
	14	Kuth	19.7	34.4
	15	Valrina Grass Roots	21.7	-
Jharkhand	1	Mahulan	426.5	286.3
Karanataka	1	Tamaind	7321.0	2856.0
	2	Seegekal	764.0	676.0
	4	Alale kai	229.0	440.0
	5	Fruits	591.0	197.0
	6	Antawalia Kal	651.0	433.0
	7	Nalll Kal	649.00	469.00
	8	Honey	123.00	57.00
	9	Others	4634.00	9593.00
Kerala	1	Honey	57.068	47.976
	2	Kurunthotty	71.106	26.499
	3	Choonda Veru	30.075	66.187
	4	Cheenika	270.745	131.464
	5	Kundirilkam	111.202	94.509
	6	Karimkurinji	78.539	88.500
	7	Pachotti Tholl	28.860	16.273
	8	Athlthippally	15.113	3.500
	9	Honey Wax	4.481	1.191
	10	Pathiri Poovu	12.861	21.492
	11	Orilla Veru	33.987	15.629
	12	Moovila Veru	8.000	12.165
	13	Cheruthek	0.005	0.108
	14	Marottikkuru	6.408	4.847
	15	Kasthuri manjal	32.744	30.453
	16	Maramanjal	11.930	20.827
	17	Amalpori	4.640	0.083
	18	Cardamom	2.900	4.687
	19	Cheevakkaya	0.082	4.736
	20	Urillnjkkaya	10.429	2.798
	21	Vayanapoovu	0.550	2.817
	22	Nellkkaya	121.919	5.316
	23	Kudampull	13.815	7.866
	24	Sithari	0.965	1.448
	25	Kolinji	0.277	8.133
	26	Kattuvally	1.503	6.725
	27	Nagamall	0.550	1.575

TABLE 3.2.7 (b) :STATE-WISE PRODUCTION OF NTFP...Continud

State/Union Territory	Sl. No.	Name of NTFP	During	
			2000-01	2001-02
1	2	3	4	5
	28	Kattu Padavalam	11.504	21.018
	29	Kattukurumulaku	0.051	0.022
	30	Kattukurumulaku veru	1.350	8.100
	31	Edampiri Vaalampiri	4.937	1.133
	32	Padakizhangu	6.357	3.993
	33	Kattuanjanjal	7.944	0.112
	34	Kazhanlkkuru	0.008	0.013
	35	Mullllam	0.249	0.249
	36	Kattuhippaly	11.116	13.524
	37	Pollakkaya	3.579	3.964
	38	Nannari	0.008	0.096
	39	Putharichunda	3.260	4.106
	40	Adapathiyam	0.021	0.019
	41	Tamarind	0.045	0.865
	42	Peenary	0.800	5.560
	43	Kadukka	14.000	14.000
	44	Pachilachavaru	39.000	152.000
	45	Theettappullu	2.215	1.175
	46	Mechil pullu	5.000	2.500
	47	Others	61.734	84.186
	48	Cluster rocks	3.826	5.068
Maharashtra	1	Hirda	2414.0	1117.0
	2	Moha flowers and fruit	1325.0	1128.0
	3	shikakai	346.0	781.0
	4	Drugs & Spices	774.0	598.0
	5	Lac	354.0	2234.0
	6	Grass & grazing	9977.0	10459.0
	7	Tendu	33125.0	29467.0
Meghalaya	1	Bamboo	2506 Trucks	45780Nos
	2	Bamboo	-	281Trucks
	3	Characoal	261 Trucks	9088Trucks
	4	Limestone	152576.0	210644.0
	5	Boulder	134836Cum	110799Cum
	6	Sand	66112Cum	-
	7	Stone Chips	620Cum	-
	8	Earth	18620Cum	-
Orissa	9	Fodder Grass	-	10000Bndls
	1	Gendull	90.6	94.3
	2	Hill & Thormbown	241.3	-
	3	Siali leaves	1769.0	46.8
	4	Sal leaves	3039.6	1613.5
	5	Karanja Seeds	80.0	-
	6	Scall fibre	3232.3	67.5
	7	Myrabolom	678.6	-
	8	Tamarind	4807.6	168.1

TABLE 3.2.7 (b) :STATE-WISE PRODUCTION OF NTFP...Continud

State/Union Territory	Sl. No.	Name of NTFP	During	
			2000-01	2001-02
1	2	3	4	5
	9	Lodha, Medha fenena	528.5	17.6
	10	Mahua seeds	11.0	-
	11	Bana Tulasi	0.0	-
	12	Babul seeds	0.3	-
	13	Mango karned	180.0	99.0
	14	Char seeds	5.2	40.0
	15	Cashewnut	191.4	223.3
	16	Mahu flower	2193.1	-
	17	Nux vonica	40.0	9.4
	18	Neem seed	20.0	0.5
	19	Lac	5.0	-
	20	Chakuna seeds	0.3	-
	21	Khaira Billets	68.2	40.1
	22	Dhatuki flower	28.0	-
	23	Shekoy	9.0	-
	24	Kanta Jhandu	4.0	-
	25	Poles	1531Nos	2806.0
	26	Tossor cocoons	4314192Nos	71480.0
	27	Black pepper	-	0.2
	28	Coffee seeds	-	0.1
	29	Marking cleaning net	35.0	-
	30	Sabai Grass	-	3.0
Punjab		Bhabbar Grass	10252.0	14294.0
Tamil Nadu	1	Cashew	47.00	41.00
	2	Tamarind	473.00	684.00
	3	Other MFP	1091.00	327.00
	4	Babul (dry)	136511.00	110210.00
	5	Charcoal wood	52515.00	-
Tripura	1	Tatch (bundle)	74658.00	191875.00
	2	Stone Boulder (cum)	3018.36	146.89
	3	Sand (cum)	217.09	187888.09
	4	Umbrella handle (nos)	2.50	7713202.00
	5	Agarbati sticks (MT)	9.63	17346.23
Uttar Pradesh	1	Tendu Leaves (Standard bags)	495508.00	457769.00
	2	Balb Grass	1125.00	55.00
	3	Medicinal Herbs	2060.00	447.00
	4	Hyde & Horns	79.00	57.00
	5	Honey Wax	221.00	188.00
	6	Fish	145.00	116.00
	7	Fodder Grass	940.00	1416.00
Uttranchal	1	Grasses	5103.08	5740.40
	2	Herbs	8065.55	3146.43
	3	Sand	221648.00	359195.40
	4	Chaff	37.00	97.20

TABLE 3.2.7 (b) :STATE-WISE PRODUCTION OF NTFP...Conclld

State/Union Territory	Sl. No.	Name of NTFP	During	
			2000-01	2001-02
1	2	3	4	5
West Bengal	5	Maljen Leaves	217.45	202.82
	6	Skin and bones	15.70	14.00
	7	Rohini Kamela	-	7.50
	8	Fish	14.61	2.85
	9	Honey wax	4.52	0.50
	10	Mango fruits	5.00	6.00
	11	Data leaves	2.00	8.50
	12	Agriculture produce	269.15	490.90
	1	Honey wax	49.40	32.30
	2	Wax	0.72	2.12
	3	Salseed	1848.37	Nil
	4	Kendu leaves	371.22	626.09
	5	Cetronnela Grass	2137.00	6738.00

Source: Forestry Statistics India,2003

Note: Non responding states: A & N Islands, Arunanchal Pradesh, Bihar, Chandigarh, Assam, Rajasthan, Sikkim, Daman & Diu, Manipur, Mizoram and Pondicherry

**TABLE 3.2.8 (a) :PHYSIOGRAPHIC ZONE WISE TREE COVER ESTIMATES
(From Trees Outside Forest)**

Sl. No.	Physiographic Zone	Geographic Area (Km ²)	CNFA (Km ²)	CNFA as % of GA	Trees per ha of CNFA	Number of Trees (000)	Tree Cover		
							Area (Km ²)	% of Geog. Area	% of CNFA
1	2	3	4	5	6	7	8	9	10
1	W. Himalayas	338556	90730	26.80	17.9	162446	4901	1.45	5.40
2	E. Himalayas	65317	7811	11.96	9.1	7136	149	0.23	1.91
3	North East Ranges	133990	32073	23.94	13.6	43644	1511	1.13	4.71
4	Northern Plains	295780	268783	90.87	12.8	342813	9746	3.30	3.63
5	Eastern Plains	223339	170754	76.46	14.3	244420	3014	1.35	1.77
6	Western Plains	319098	283895	88.97	6.9	196142	7964	2.50	2.81
7	Central Highlands	373675	283844	75.96	9.9	280405	8694	2.33	3.06
8	North Deccan	355988	260717	73.24	10.8	280940	7542	2.12	2.89
9	East Deccan	336289	193088	57.42	10.4	200393	18742	5.57	9.71
10	South Deccan	292416	231779	79.26	12.2	282151	8691	2.97	3.75
11	Western Ghats	72381	30814	42.57	21.6	66515	4631	6.40	15.03
12	Eastern Ghats	191698	110958	57.88	12.8	142239	6727	3.51	6.06
13	West Coast	121242	84337	69.56	20.8	175505	9569	7.89	11.35
14	East Coast	167494	139085	83.04	18.4	255398	8015	4.79	5.76
Total		3287263	2188668	66.58	12.2	2680147	99896	3.04	4.56
Source : State of Forest Report, 2003 CNFA : Culturable Non Forest Area									

TABLE 3.2.8 (b):PHYSIOGRAPHIC ZONE WISE VOLUME OF GROWING STOCK

Sl. No.	Physiographic Zone	Area of Phy.Zone (Km ²)	Recorded Forest Area (Km ²)	CNFA plus Forest cover outside forests (Km ²)	Growing Stock (volume in m.cum)		
					In forest	In TOF	Total
1	2	3	4	5	7	8	9
1	W. Himalayas	338556	98165	104715	1044.666	115.21	1159.880
2	E. Himalayas	65317	41160	20287	478.869	70.49	549.354
3	North East Ranges	133990	78906	53981	438.455	48.31	486.766
4	Northern Plains	295780	13983	274370	181.259	103.73	284.986
5	Eastern Plains	223339	31826	178196	309.166	81.09	390.254
6	Western Plains	319098	13813	288291	4.496	100.16	104.654
7	Central Highlands	373675	82711	286651	100.496	140.64	241.133
8	North Deccan	355988	86495	263652	285.692	87.30	372.991
9	East Deccan	336289	128006	201418	542.242	177.34	719.584
10	South Deccan	292416	51356	235933	281.137	179.68	460.812
11	Western Ghats	72381	33960	37326	458.469	97.59	556.057
12	Eastern Ghats	191698	75175	114897	461.727	114.54	576.267
13	West Coast	121242	21358	94410	90.62	169.82	260.443
14	East Coast	167494	17826	147110	104.12	146.45	250.571
Total		3287263	774740	2301237	4781.414	1632.338	6413.752
Source : State of Forest Report, 2003 CNFA : Culturable Non Forest Area							

TABLE 3.2.8 (c): STATES/UTs WISE VOLUME OF GROWING STOCK

Sl. No.	State/UT	Geographic area (Km ²)	Recorded forest area (Km ²)	CNFA plus forest cover outside forest (Km ²)	Growing Stock (Volume in m.cum)		
					In Forest	In TOF	Total
1	2	3	4	5	6	7	8
1	Andhra Pradesh	275069	63821	207256	372.497	179.031	551.528
2	Arunachal Pradesh	83743	51540	28172	555.433	77.601	633.034
3	Assam	78438	27018	48429	251.571	25.151	276.722
4	Bihar	94163	6473	81738	20.468	32.915	53.383
5	Chhattisgarh	135191	59772	72894	245.446	63.165	308.611
6	Delhi	1483	85	1363	1.445	1.055	2.500
7	Goa	3702	1224	2342	5.102	6.669	11.771
8	Gujarat	196022	19113	157744	83.797	140.403	224.200
9	Haryana	44212	1558	41585	2.37	15.363	17.733
10	Himachal Pradesh	55673	37033	13452	339.421	12.417	351.838
11	Jammu & Kashmir	222236	20230	77013	246.856	88.773	335.629
12	Jharkhand	79714	23605	54295	96.932	48.231	145.163
13	Karnataka	191791	43084	145601	356.796	131.061	487.857
14	Kerala	38863	11268	26267	129.772	51.778	181.550
15	Madhya Pradesh	308245	95221	209296	216.998	99.818	316.816
16	Maharashtra	307713	61939	239846	216.652	144.617	361.269
17	Manipur	22327	17418	4811	111.072	4.279	115.351
18	Meghalaya	22429	9496	12673	73.611	11.347	84.958
19	Mizoram	21081	16717	4289	59.710	3.740	63.450
20	Nagaland	16579	8629	7790	55.026	6.972	61.998
21	Orissa	155707	58136	95144	291.367	90.598	381.965
22	Punjab	50362	3084	46155	11.081	17.906	28.987
23	Rajasthan	342239	32488	306554	31.960	121.917	153.877
24	Sikkim	7096	5841	394	33.123	0.495	33.618
25	Tamil Nadu	130058	22877	105526	183.563	107.712	291.275
26	Tripura	10486	6293	4109	13.515	3.650	17.165
27	Uttar Pradesh	240928	16826	218458	164.275	87.089	251.364
28	Uttaranchal	53483	34662	14145	429.598	12.040	441.638
29	West Bengal	88752	11879	71870	126.071	44.024	170.095
30	A. & N. Islands	8249	7171	1060	51.611	1.064	52.675
31	Chandigarh	114	34	78	0.578	0.071	0.649
32	Dadra & Nagar Haveli	491	204	279	3.695	0.722	4.417
33	Daman & Diu	112	1	107	0.002	0.135	0.137
34	Lakshadweep	32	0	30	0.000	0.052	0.052
35	Pondicherry	480	0	472	0.000	0.477	0.477
Total		3287263	774740	2301237	4781.414	1632.338	6413.752

Source : State of Forest Report, 2003
CNFA : Culturable Non Forest Area

TABLE 3.2.9 :STATE/UT WISE TREE COVER ESTIMATES

Sl. No.	State/UT	Geographic Area (Km ²)	CNFA (Km ²)	Trees per ha of CNFA	Number of Trees (000)	Tree Cover		
						Area (Km ²)	% of Geog. Area	% of CNFA
1	2	3	4	5.0	6	7	8	9
1	Andhra Pradesh	275069	204084	16.9	345355	12120	4.41	5.94
2	Arunachal Pradesh	83743	12504	10.8	13470	363	0.43	2.90
3	Assam	78438	42315	14.1	59473	935	1.19	2.21
4	Bihar	94163	79442	13.8	109971	1620	1.72	2.04
5	Chhattisgarh	135191	69594	10.2	71326	6723	4.97	9.66
6	Delhi	1483	1278	24.9	3176	98	6.61	7.67
7	Goa	3702	1411	15.1	2137	136	3.67	9.64
8	Gujarat	196022	151926	14.1	213829	10586	5.40	6.97
9	Haryana	44212	40751	12.3	50055	1415	3.20	3.47
10	Himachal Pradesh	55673	12366	15.5	19127	491	0.88	3.97
11	Jammu & Kashmir	222236	65296	18.7	122309	3826	1.72	5.86
12	Jharkhand	79714	51555	10.4	53858	5012	6.29	9.72
13	Karnataka	191791	140680	11.6	162718	5371	2.80	3.82
14	Kerala	38863	21922	13.6	29904	1903	4.90	8.68
15	Madhya Pradesh	308245	206462	10.2	211456	7250	2.35	3.51
16	Maharashtra	307713	232567	11.5	267733	9320	3.03	4.01
17	Manipur	22327	2864	13.6	3901	136	0.61	4.75
18	Meghalaya	22429	7543	13.6	10241	352	1.57	4.67
19	Mizoram	21081	2449	14.0	3440	130	0.62	5.31
20	Nagaland	16579	4637	13.6	6297	217	1.31	4.68
21	Orissa	155707	90297	11.0	98919	6381	4.10	7.07
22	Punjab	50362	45290	12.6	57285	1608	3.19	3.55
23	Rajasthan	342239	303157	8.0	241255	8638	2.52	2.85
24	Sikkim	7096	322	20.3	653	22	0.31	6.83
25	Tamil Nadu	130058	98851	13.7	135131	4991	3.84	5.05
26	Tripura	10486	2446	13.6	3336	116	1.11	4.74
27	Uttar Pradesh	240928	214390	12.3	263875	7715	3.20	3.60
28	Uttaranchal	53483	13090	15.4	20164	571	1.07	4.36
29	West Bengal	88752	67350	14.4	96888	1731	1.95	2.57
30	A. & N. Islands	8249	973	12.1	1178	33	0.40	3.39
31	Chandigarh	114	76	33.8	257	8	7.02	10.53
32	Dadra & Nagar Haveli	491	233	21.0	489	35	7.13	15.02
33	Daman & Diu	112	96	10.6	102	6	5.36	6.25
34	Lakshadweep	32	25	14.0	35	2	6.25	8.00
35	Pondicherry	480	426	18.9	804	35	7.29	8.22
Total		3287263	2188668	12.2	2680147	99896	3.04	4.56

Source : State of Forest Report, 2003

CNFA : Culturable Non Forest Area

TABLE 3.2.10 : FOREST COVER IN STATES/UTs IN INDIA*(Sq. km)*

Sl. No.	State/UT	Geographic Area	Forest Cover Area			Percent of G.A.	Scrub
			Dense Forest	Open Forest	Total Forest		
1	2	3	4	5	6	7	8
1	Andhra Pradesh	275069	24379	20040	44419	16.15	9748
2	Arunachal Pradesh	83743	53511	14508	68019	81.22	116
3	Assam	78438	13042	14784	27826	35.48	219
4	Bihar	94163	3027	2531	5558	5.90	150
5	Chhattisgarh	135191	38980	17018	55998	41.42	88
6	Delhi	1483	52	118	170	11.46	1
7	Goa	3702	1255	901	2156	58.24	0
8	Gujarat	196022	6345	8601	14946	7.62	1743
9	Haryana	44212	520	997	1517	3.43	68
10	Himachal Pradesh	55673	8976	5377	14353	25.78	389
11	Jammu & Kashmir	222236	10497	10770	21267	9.57	2947
12	Jharkhand	79714	11681	11035	22716	28.50	807
13	Karnataka	191791	22461	13988	36449	19.00	3141
14	Kerala	38863	9628	5949	15577	40.08	72
15	Madhya Pradesh	308245	41843	34586	76429	24.79	2378
16	Maharashtra	307713	28387	18478	46865	15.23	4175
17	Manipur	22327	6538	10681	17219	77.12	74
18	Meghalaya	22429	6491	10348	16839	75.08	169
19	Mizoram	21081	7488	10942	18430	87.42	274
20	Nagaland	16579	5707	7902	13609	82.09	231
21	Orissa	155707	28170	20196	48366	31.06	5346
22	Punjab	50362	743	837	1580	3.14	22
23	Rajasthan	342239	4496	11330	15826	4.62	4564
24	Sikkim	7096	2362	900	3262	45.97	360
25	Tamil Nadu	130058	12007	10636	22643	17.41	2040
26	Tripura	10486	5046	3047	8093	77.18	1
27	Uttar Pradesh	240928	5996	8122	14118	5.86	749
28	Uttaranchal	53483	18422	6043	24465	45.74	320
29	West Bengal	88752	6045	6298	12343	13.91	75
30	A. & N. Islands	8249	6284	680	6964	84.42	1
31	Chandigarh	114	9	6	15	13.16	1
32	Dadra & Nagar Haveli	491	145	80	225	45.82	-
33	Daman & Diu	112	2	6	8	7.14	-
34	Lakshadweep	32	12	11	23	71.88	-
35	Pondicherry	480	17	23	40	8.33	-
Total		3287263	390564	287769	678333	20.64	40269

Source: State of Forest Report 2003

TABLE 3.2.11 : STATE/UT WISE FOREST COVER IN HILL DISTRICTS*(Sq. km)*

Sl. No.	Name of State/UT	Number of Hill Districts	Geographic Area in Hill Districts	Forest Cover Area				Percent Forest Cover
				Very Dense Forest	Moderately Dense Forest	Open Forest	Total	
1	2	3	4	5	6	7	8	9
1	Arunachal Pradesh	13	83743	13907	39604	14508	68019	81.2
2	Assam	3	19153	943	5678	6537	13158	68.7
3	Himachal Pradesh	12	55673	1093	7883	5377	14353	25.8
4	Jammu & Kashmir	(a) 14	101388	1557	6326	7712	15595	15.4
		(b) *	120848	545	2069	3058	5672	4.7
5	Karnataka	6	48046	379	16351	5641	22371	46.6
6	Kerala	10	29572	315	7428	5057	12800	43.3
7	Maharashtra	7	69905	307	6334	5596	12237	17.5
8	Manipur	9	22327	720	5818	10681	17219	77.1
9	Meghalaya	7	22429	168	6323	10348	16839	75.1
10	Mizoram	8	21081	84	7404	10942	18430	87.4
11	Nagaland	8	16579	57	5650	7902	13609	82.1
12	Sikkim	4	7096	458	1904	900	3262	46.0
13	Tamil Nadu	5	22789	1121	2710	2209	6040	26.5
14	Tripura	3	10486	58	4988	3047	8093	77.2
15	Uttaranchal	13	53483	4002	14420	6043	24465	45.7
16	West Bengal	1	3149	472	893	856	2221	70.5
Total		123	707747	26186	141783	106414	274383	38.8

Source: State of Forest Report, 2003

* : In area under illegal occupation of Pakistan and China.

TABLE 3.2.12 : STATE/UT WISE FOREST COVER IN TRIBAL DISTRICTS**(Sq. km)**

Sl. No.	State/UT	Number of Tribal Districts	Geographic Area	Forest Cover				Percent Forest Cover
				Very Dense Forest	Moderately Dense Forest	Open Forest	Total	
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	8	87090	15	16355	8955	25325	29.08
2	Arunachal Pradesh	13	83743	13907	39604	14508	68019	81.22
3	Assam	16	50137	677	4625	6750	12052	24.04
4	Chhattisgarh	9	90134	1286	26922	12100	40308	44.72
5	Gujarat	8	48650	105	3642	3223	6970	14.33
6	Himachal Pradesh	3	26764	456	1510	1240	3206	11.98
7	Jharkhand	8	44413	1553	5815	6265	13633	30.70
8	Karnataka	5	26597	244	8415	3653	12312	46.29
9	Kerala	9	27228	259	7082	4828	12169	44.69
10	Madhya Pradesh	18	139448	3247	21125	16725	41097	29.47
11	Maharashtra	11	138272	6681	11628	10447	28756	20.80
12	Manipur	9	22327	720	5818	10681	17219	77.12
13	Meghalaya	7	22429	168	6323	10348	16839	75.08
14	Mizoram	8	21081	84	7404	10942	18430	87.42
15	Nagaland	8	16579	57	5650	7902	13609	82.09
16	Orissa	12	86124	287	19110	13614	33011	38.33
17	Rajasthan	5	38218	-	2335	3937	6272	16.41
18	Sikkim	4	7096	458	1904	900	3262	45.97
19	Tamil Nadu	6	30720	543	2558	3377	6478	21.09
20	Tripura	3	10486	58	4988	3047	8093	77.18
21	Uttar Pradesh	1	7680	366	502	446	1314	17.11
22	West Bengal	11	69403	2286	3644	5779	11709	16.87
23	A. & N. Islands	2	8249	3475	2809	680	6964	84.42
24	Dadra & Nagar Haveli	1	491	-	145	80	225	45.82
25	Daman & Diu	1	72	-	1	2	3	4.17
26	Lakshadweep	1	32	-	12	11	23	71.88
Total		187	1103463	36932	209926	160440	407298	36.91

Source: State of Forest Report 2003

TABLE 3.2.13 (a) : STATE/UT WISE MANGROVE COVER ASSESSMENT*(Sq. km)*

SI No.	State/UT	Assessment Year							
		1987	1989	1991	1993	1995	1997	1999	2001
1	2	3	4	5	6	7	8	9	10
1	Andhra Pradesh	495	405	399	378	383	383	397	333
2	Goa	0	3	3	3	3	5	5	5
3	Gujarat	427	412	397	419	689	901	1031	911
4	Karnataka	0	0	0	0	2	3	3	2
5	Maharashtra	140	114	113	155	155	124	108	118
6	Orissa	199	192	195	195	195	211	215	219
7	Tamil Nadu	23	47	47	21	21	21	21	23
8	West Bengal	2076	2109	2119	2119	2119	2123	2125	2081
9	Andaman & Nicobar	686	973	971	966	966	966	966	789
10	Pondicherry	0	0	0	0	0	0	0	1
	Total	4046	4255	4244	4256	4533	4737	4871	4482

Source: State of Forest Report 2003

TABLE 3.2.13 (b) : STATE/UT WISE MANGROVE COVER, 2003*(Sq. km)*

SI No.	State/UT	Very Dense Mangrove	Moderately Dense Mangrove	Open Mangrove	Total	Change w.r.t. 2001 assessment
1	2	3	4	5	6	7
1	Andhra Pradesh	0	15	314	329	- 4
2	Goa	0	10	0	10	+ 5
3	Gujarat	0	198	762	960	+ 49
4	Karnataka	0	3	0	3	+ 1
5	Kerala	0	3	5	8	+ 8
6	Maharashtra	8	44	64	116	- 2
7	Orissa	0	160	47	207	- 12
8	Tamil Nadu	0	18	17	35	+ 12
9	West Bengal	892	894	334	2120	+ 39
10	Andaman & Nicobar	262	312	97	671	- 118
11	Daman & Diu	0	0	1	1	+ 1
12	Pondicherry	0	0	1	1	0
	Total	1162	1657	1642	4461	- 21

Source: State of Forest Report 2003

TABLE 3.2.13 (c) : STATE-WISE LIST OF MANGROVE AREAS

SI No.	State/UT	Mangrove Area
1	2	3
1	West Bengal	Sunderbans
2	Orissa	Bhaitarkanika, Mahanadi, Subernarekha, Devi, Dhamra, MGRC, Chilka
3	Andhra Pradesh	Coringa, East Godavari, Krishna
4	Tamil Nadu	Pichavram, Muthupet, Ramnad, Pulicat, Kazhuveli,
5	Andman & Nicobar	North Andamans, Nicobar
6	Kerala	Vembanad, Kannur
7	Karnataka	Coondapur, Dakshin Kannada/Honnavar, Manglore forest division, Karwar
8	Goa	Goa
9	Maharashtra	Achra-Rantnagiri, Devgarh-Vijay Dur, Veldur, Kundalika-Ravdana, Mumbara-Diva, Vikroli, Shreevardhan, Vaitarna, Vasasi-Manori, Malvan
10	Gujarat	Gulf of Kutchh, Gulf of Khambat, Dumas-ubhrat

Source : Annual Report 2005-2006, Ministry of Environment & Forests

TABLE 3.2.14 : STATE-WISE WASTE LANDS OF INDIA*(Area in Sq. Km.)*

Sl. No.	States/Uts.	Number of districts covered	Total Geog. Area of dist. Covered	Total Wasteland area in dists. Covered	% to total Geog. area
1	2	3	4	5	6
1	Andhra Pradesh	23	275068.00	51750.19	18.81
2	Arunachal Pradesh	13	83743.00	18326.25	21.88
3	Assam	23	78438.00	20019.17	25.52
4	Bihar	55	173877.00	20997.55	12.08
5	Goa	2	3702.00	613.27	16.57
6	Gujarat	25	196024.00	43021.28	21.95
7	Haryana	19	44212.00	3733.98	8.45
8	Himachal Pradesh	12	55673.00	31659.00	56.87
9	Jammu & Kashmir	14	101387.00	65444.24	64.55
10	Karnataka	27	191791.00	20839.28	10.87
11	Kerala	14	38863.00	1448.18	3.73
12	Madhya Pradesh	62	443446.00	69713.75	15.72
13	Maharashtra	32	307690.00	53489.08	17.38
14	Manipur	9	22327.00	12948.62	58.00
15	Meghalaya	7	22429.00	9904.38	44.16
16	Mizoram	3	21081.00	4071.68	19.31
17	Nagaland	7	16579.00	8404.10	50.69
18	Orissa	30	155707.00	21341.71	13.71
19	Punjab	17	50362.00	2228.40	4.42
20	Rajasthan	32	342239.00	105639.11	30.87
21	Sikkim	4	7096.00	3569.58	50.30
22	Tamilnadu	4	10486.00	1276.03	12.17
23	Tripura	29	130058.00	23013.90	17.70
24	Uttar Pradesh	83	294411.00	38772.80	13.17
25	West Bengal	18	88752.00	5718.48	6.44
26	UTs	20	10973.00	574.30	5.23
Total		584	3166414.00	638518.31	20.17
Un -Surveyed Area (J& K)			120849.00		
Total Geog. Area			3287263.00		

Source : Forestry Statistics in India, 2003

CHART 3 : STATE-WISE WASTELAND AS PERCENTAGE TO THE TOTAL GEOGRAPHICAL AREA

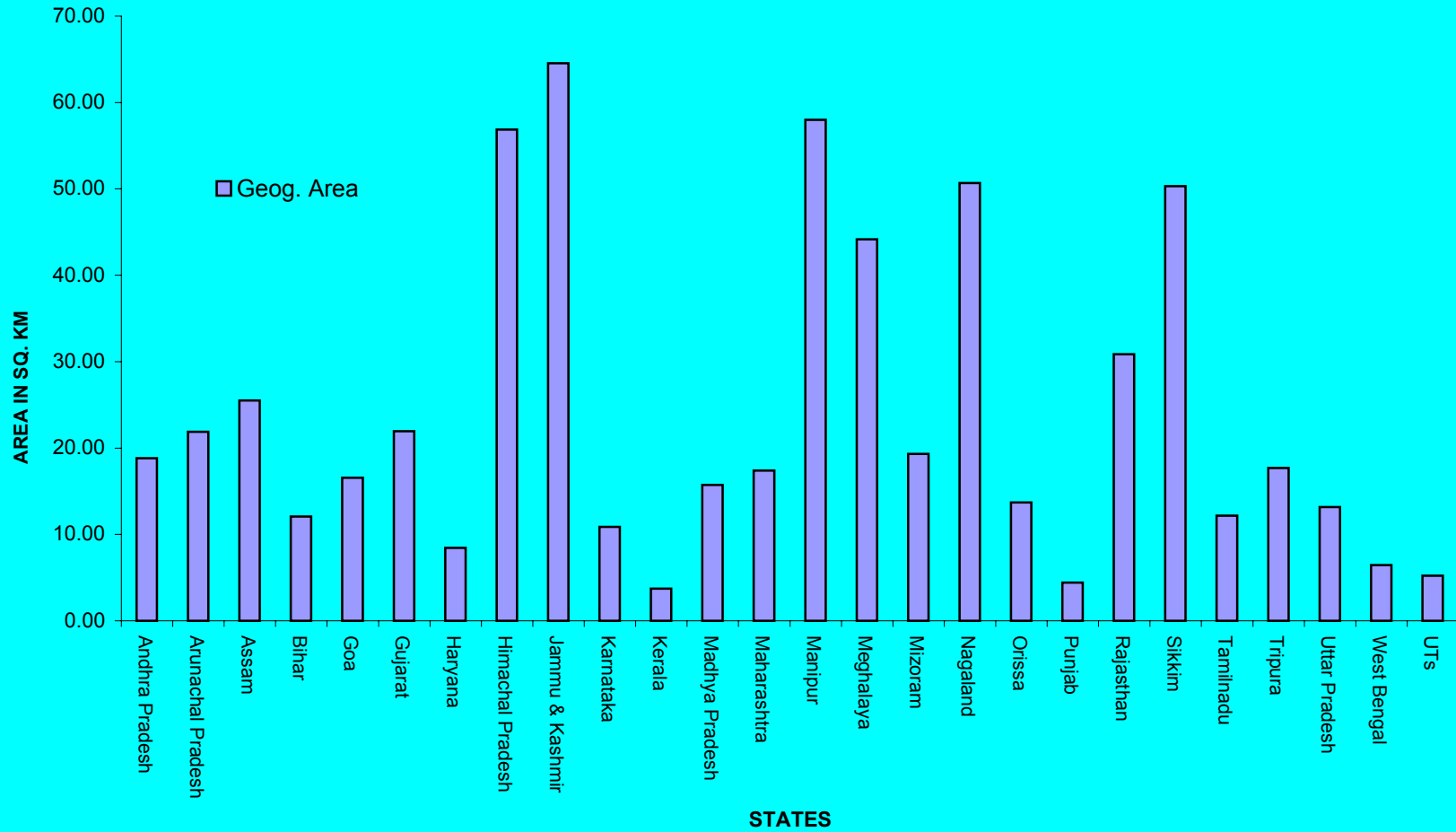


TABLE 3.2.15 : STATE WISE AND CATEGORY WISE WASTE LANDS OF INDIA

Sl. No.	States/UTs.	(Sq.km)						
		Gullied/Ravinous land	Land with/without scrub	Waterlogged/Marshy land	Saline/alkaline area	Shifting cultivation area	Deg. Notified forest land	Deg. Pastures/orazing land
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	692.68	20256.64	1035.02	603.26	13.80	22237.78	709.29
2	Arunachal Pradesh	0.00	3326.78	41.47	0.00	3088.08	1416.67	2134.99
3	Assam	0.00	843.72	1633.56	0.00	8391.48	3112.71	2217.85
4	Bihar	559.17	4689.93	1198.87	0.51	45.45	13066.53	164.97
5	Goa	0.00	292.83	41.02	0.00	0.00	71.99	2.47
6	Gujarat	1013.39	21786.72	2656.26	7637.34	0.00	5443.02	387.45
7	Haryana	49.50	988.42	238.30	285.63	0.00	732.52	721.65
8	Himachal Pradesh	121.89	2056.50	15.69	1.36	0.00	4589.98	4278.17
9	Jammu & Kashmir	21.25	4495.30	246.50	0.00	0.00	2491.66	267.51
10	Karnataka	301.52	9087.68	32.76	125.11	0.00	8299.41	97.46
11	Kerala	0.00	357.93	136.00	0.00	0.00	609.30	3.99
12	Madhya Pradesh	7569.11	36977.87	51.72	162.81	0.00	20437.77	302.44
13	Maharashtra	1700.37	31386.91	527.57	251.66	0.00	13430.67	1349.40
14	Manipur	0.00	1.32	324.60	0.00	12014.06	608.64	0.00
15	Meghalaya	0.00	4190.63	14.87	0.00	2086.77	3612.11	0.00
16	Mizoram	0.00	0.00	0.00	0.00	3761.23	310.45	0.00
17	Nagaland	0.00	1596.46	0.00	0.00	5224.65	1582.99	0.00
18	Orissa	185.82	8358.68	379.10	51.49	115.25	10014.07	13.43
19	Punjab	168.52	339.44	352.01	173.29	0.00	353.29	113.71
20	Rajasthan	4952.77	27152.76	289.66	2722.99	0.00	12541.89	12208.44
21	Sikkim	0.00	1073.11	0.00	0.00	0.00	1060.57	0.00
22	Tamilnadu	0.00	286.87	0.11	0.00	400.88	588.18	0.00
23	Tripura	226.12	7697.91	415.80	2479.73	0.53	9634.25	168.94
24	Uttar Pradesh	2806.52	5498.99	4981.43	5811.94	0.00	3338.32	446.36
25	West Bengal	171.90	1245.16	1931.54	131.25	0.00	777.58	384.97
26	UTs	12.83	25.74	24.60	39.01	0.00	289.97	5.43
	Total	20553.36	194014.30	16568.46	20477.38	35142.18	140652.32	25978.92

Source : Forestry Statistics in India, 2003

Note : 1,20,8849 sq kms in Jammu & Kashmir is not mapped and hence not considered for calculating per centage

TABLE 3.2.15 : STATE WISE AND CATEGORY WISE WASTE LANDS OF INDIA..Concl'd.

States/UTs.	Deg. Land under plantation crop	Sands- inland/costa	Mining/Industrial wasterlands	Barren Rocky area	Steep Sloping area	Snow/ Glacial area	Total Wasterland	Total	(Sq Km)	
									Geog. Area	% to Total Geog. Area
1	10	11	12	13	14	15	16	17	18	
Andhra Pradesh	52.91	464.70	98.88	5196.27	388.96	0.00	51750.19	275068.00	18.81	
Arunachal Pradesh	6.07	309.43	0.30	1262.36	7.93	6732.17	18326.25	83743.00	21.88	
Assam	0.00	3764.54	0.43	54.88	0.00	0.00	20019.17	78438.00	25.52	
Bihar	79.80	222.08	184.23	688.91	97.10	0.00	20997.55	173877.00	12.08	
Goa	32.19	0.00	110.73	58.55	3.49	0.00	613.27	3702.00	16.57	
Gujarat	78.32	188.42	49.66	3293.39	487.31	0.00	43021.28	196024.00	21.95	
Haryana	134.12	465.01	13.72	105.12	0.00	0.00	3733.98	44212.00	8.45	
Himachal Pradesh	2457.59	105.04	85.66	3858.04	1529.67	12559.42	31659.00	55673.00	56.87	
Jammu & Kashmir	640.56	869.26	0.31	32821.50	1685.42	21904.97	65444.24	101387.00	64.55	
Karnataka	104.74	43.96	77.78	2627.89	40.97	0.00	20839.28	191791.00	10.87	
Kerala	25.65	27.87	0.49	146.46	140.49	0.00	1448.18	38863.00	3.73	
Madhya Pradesh	910.40	24.57	141.44	2950.97	184.65	0.00	69713.75	443446.00	15.72	
Maharashtra	687.43	77.63	100.45	2587.42	1389.57	0.00	53489.08	307690.00	17.38	
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	12948.62	22327.00	58.00	
Meghalaya	0.00	0.00	0.00	0.00	0.00	0.00	9904.38	22429.00	44.16	
Mizoram	0.00	0.00	0.00	0.00	0.00	0.00	4071.68	21081.00	19.31	
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	8404.10	16579.00	50.69	
Orissa	193.93	212.49	35.45	1574.09	207.88	0.00	21341.71	155707.00	13.71	
Punjab	81.58	619.67	26.89	0.00	0.00	0.00	2228.40	50362.00	4.42	
Rajasthan	21.14	40639.51	128.65	4799.02	182.28	0.00	105639.11	342239.00	30.87	
Sikkim	0.00	0.00	0.00	10.34	0.00	1425.56	3569.58	7096.00	50.30	
Tamilnadu	0.00	0.00	0.00	0.00	0.00	0.00	1276.03	10486.00	12.17	
Tripura	221.96	590.80	120.46	1155.92	301.50	0.00	23013.90	130058.00	17.70	
Uttar Pradesh	50.44	470.21	29.26	1180.13	992.83	13166.37	38772.80	294411.00	13.17	
West Bengal	2.93	879.13	47.34	130.46	16.24	0.00	5718.48	88752.00	6.44	
UTs	46.34	47.33	0.00	83.05	0.00	0.00	574.30	10973.00	5.23	
Total	5828.10	50021.65	1252.13	64584.77	7656.29	55788.49	638518.31	3166414.00	20.17	

Source : Forestry Statistics in India, 2003

**TABLE 3.2.16 : DIVERSION OF FOREST LAND FOR NON FOREST USE
SINCE THE ENFORCEMENT OF FOREST CONSERVATION ACT,1980***(Area in ha.)*

Sl. No.	Year	Forest Area Diverted	Cummulative Area Diverted
1	1980	Nil	Nil
2	1981	1331.70	1331.70
3	1982	3674.32	5006.02
4	1983	5100.51	10106.53
5	1984	9348.90	19455.43
6	1985	7676.83	27132.26
7	1986	9310.45	36442.71
8	1987	25925.97	62368.68
9	1988	4868.71	67237.39
10	1989	66768.09	134005.48
11	1990	127361.79	261367.27
12	1991	5065.35	266432.62
13	1992	21756.77	288189.39
14	1993	16182.51	304371.90
15	1994	59962.02	364333.92
16	1995	51428.98	41562.90
17	1996	32862.55	448625.45
18	1997	24738.43	47363.88
19	1998	18425.21	491789.09
20	1999	45784.41	537573.50
21	2000	22386.43	559959.93
22	2001	267897.61	827857.54
23	2002	51172.31	879029.85
24	2003	42729.68	921759.53
25	2004	33079.50	954839.03

Source : Forests & Wildlife Statistics, India, 2004,MOEF

CHART 4 : FOREST LAND DIVERSION



TABLE: 3.2.17 : PROGRESS OF JOINT FOREST MANAGEMENT IN INDIA*(As on 01-01-2004)*

Sl. No.	State	No. of JFM Committees	Area Under JFM (in ha)	Total No. of Families involved in JFM
1	2	3	4	5
1	Andhra Pradesh	7245	1886764.00	611095
2	Arunachal Pradesh	308	80217.00	20474
3	Assam	503	79251.00	67341
4	Bihar	493	267240.94	242639
5	Chhattisgarh	6881	2846762.16	1360251
6	Goa	26	13000.00	336
7	Gujarat	1424	160525.41	149191
8	Haryana	875	56000.00	165500
9	Himachal Pradesh	835	290922.80	259069
10	Jammu & Kashmir	935	49544.00	48460
11	Jharkhand	3358	847967.93	296135
12	Karnataka	3470	232734.00	243357
13	Kerala	323	170712.00	40624
14	Madhya Pradesh	13698	5500000.00	1641000
15	Maharashtra	5322	1411215.00	921634
16	Manipur	205	93941.00	19451
17	Mizoram	249	10980.00	32241
18	Nagaland	306	22930.00	57492
19	Orissa	15985	821504.00	--
20	Punjab	287	56243.95	38022
21	Rajasthan	3667	376766.00	300295
22	Sikkim	158	600.00	3268
23	Tamil Nadu	1816	445965.00	270934
24	Tripura	234	34154.00	20239
25	Uttar Pradesh	2030	112652.93	620265
26	Uttanchal	10107	859028.00	499980
27	West Bengal	3892	604334.00	465395
Total		84632	17331955.12	8384788

Source : Ministry of Environment & Forests, Annual Report 2003-2004

Estimated Population Involved : Around 6.25 Crore

Number of JFM Committees Before October, 1999: around 25,000

Area Under JFM Before October 1999 : around 4 million ha

Total Revenue Villages Covered Under JFM : 61437

Number of Forest Fringe Villages : 164063 Area around 31.9 million ha

Number of Forest Villages and Their Area : 2960, Area 3.68 lakh ha

Future Target : To cover all 1,70,000 villages during 10th plan

Participation of people in the protection and management of forests has been emphasised in the National Forest Policy, 1988. Pursuant to this policy, Government of India through its resolution dated 1st June '90 formalised the JFM Programme. The JFM is being practiced through constitution of forest protection committees. About 84,632 committees are managing a total of 17.33 million ha of forest area under JFM .

TABLE 3.3.1 : INDIA'S MAJOR BIOGEOGRAPHIC HABITATS

Sl. No.	Biogeographic Zone	Biotic Province	Total Area (Sq.Km)
1	2	3	4
1	Trans-Himalayan	Upper Regions	186200
2	Himalayan	North-Western	69000
		Western	72000
		Central	123000
		Eastern	83000
3	Desert	Kachchh	45000
		Thar	180000
		Ladakh (cold)	NA
4	Semi-Arid	Central India	107600
		Gujarat-Rajwara	400400
5	Western Ghats	Malabar Coast	59700
		Western Ghat Mountains	99300
6	Deccan Peninsula	Deccan South Plateau	378000
		Central Plateau	341000
		Eastern Plateau	198000
		Chhota Nagpur	217000
		Central Highlands	287000
7	Gangetic Plain	Upper Gangetic	206400
		Lower Gangetic	153000
8	North-East India	Brahmaputra Valley	65200
		North-Eastern Hills	106200
9	Islands	Andaman Islands	6397
		Nicobar Islands	1930
		Lakshadweep	180
10	Coasts	West Coast	6500
		East Coast	6500

Source : "Conserving our Biological Wealth", WWF for Nature-India (modified) and Zoological Survey of India

TABLE 3.3.2 : ESTIMATED NUMBER OF SPECIES

Sl. No.	Taxonomic Group	No. of Species		% In India
		India	World	
1	2	3	4	5
I	PROTISTA	2577	31250	8.24
1	Protozoa	2577	31250	8.24
II	ANIMALIA	86808*	1196903	7.25
1	Mesozoa	10	71	14.08
2	Porifera	486	4562	10.65
3	Cnidaria	842	9916	8.49
4	Ctenophora	12	100	12.00
5	Platyhelminthes	1622	17500	9.27
6	Nemertinea	--	600	--
7	Rotifera	330	2500	13.20
8	Gastrotricha	100	3000	3.33
9	Kinorhyncha	10	100	10.00
10	Nematoda	2850	30000	9.50
11	Nematomorpha	--	250	--
12	Acanthocephala	229	800	2862.00
13	Sipuncula	35	145	24.14
14	Mollusca	5070	66535	7.62
15	Echiura	43	127	33.86
16	Annelida	840	12700	6.61
17	Onychophora	1	100	1.00
	Arthropoda	68389	987949	6.90
1	Crustacea	2934	35534	8.26
2	Insecta	59353	867391	6.83
3	Arachnida	5818	73440	7.90
4	Pycnogonida	16	600	2.67
5	Paupoda	--	360	--
6	Chilopoda	100	3000	3.33
7	Diplopoda	162	7500	2.16
8	Symphyla	4	120	3.33
9	Merostomata	2	4	50.00
10	Phoronida	3	11	27.27
11	Bryozoa (Ectoprocta)	200	4000	5.00
12	Entoprocta	10	60	16.66
13	Brachiopoda	3	300	1.00
14	Pogonophora	--	80	--
15	Priapulida	--	8	--
16	Pentastomida	--	70	--
17	Chaetognatha	30	111	27.02
18	Tardigrada	30	514	5.83
19	Echinodermata	765	6223	12.29
20	Hemichordata	12	120	10.00
	Chordata	4886*	48451	10.07*
1	Protochordata (Cephalochordata +Urochordata)	119	2106	5.65
2	Pisces	2546	21723	11.72
3	Amphibia	209	5150	4.06
4	Reptilia	456	5817	7.84
5	Aves	1166*	9026	12.91*
6	Mammalia	390	4629	8.42
Grand Total (Protista I + Animalia II)		89385*	1228153	7.28

Source : Faunal Diversity in India (1998) with updated
(*) figures Zoological Survey of India

TABLE 3.3.3 (a): RARE AND THREATENED SPECIES (VERTEBRATES)

Sl. No.	Category	Approximate Number				
		Mammalia	Aves	Reptilia	Amphibia	Total
1	2	3	4	5	6	7
1	Rare	--	2	--	--	2
2	Vulnerable	28	22	4	--	54
3	Endangered	29	21	16	1	67
4	Critical*	3	8	--	--	11
5	Extinct**	1	2	--	--	3
6	Insufficiently Known	16	--	--	--	16
Total		77	55	20	1	153

Source : The Red Data Book of Indian Animals (1994), Zoological Survey of India.

* **Mammal** - Brow - Antlered Deer, Yak, Hispid Hare
Aves - Christmas Island Frigate Bird, Mrs. Hume's Bartailed Pheasant, Burmese Peafowl, Blacknecked Crane, Hooded Crane, Masked Finfoot, Jerdon's Courser, Forest Spotted Owlet.

** **Mammal** - Cheetah.
Aves - Pinkheaded Duck, Mountain Quail

A taxon is **Extinct**, when there is no reasonable doubt that the last Individual has died.

A taxon is **Critical** when it is facing an extremely high probability of extinction in the wild in the immediate future.

A taxon is **Endangered** when it is not critical but is facing a very high probability of extinction in the wild in the near future.

A taxon is **Vulnerable** when it is not critical or endangered but is facing a high probability of extinction in the wild in the medium-term future.

A taxon is **Rare** when its populations are small and at present not endangered or vulnerable but are at risk .

A taxon is **Insufficiently Known** when an evaluation has been made but the available data are inadequate to assign a category.

3.3.3b: RECENT ADDITION IN THE LIST OF THREATENED/ ENDANGERED SPECIES

As per the Gazette Notification number 1-4/95 WL dated 5th November, 2001, published in Part II Section 3, subsection (II), Extraordinary Gazette of India, the Central Government (Ministry of Environment and Forests) has made amendments in Schedule I and Schedule IV of the Subsection (1) of section 61 of the Wild Life (Protection) Act, 1972 and included the following species in the Schedules of Threatened and endangered species

1 Schedule 1

- a) in Para II related to " Fishes" for serial number 2 and the entry relating thereto the following serial number and entries shall be substituted, namely
- "2. Shark and Ray
- (i) Anoxypristis cuspidate
 - (ii) Carcharhinus hemiodon
 - (iii) Glyphius gangeticus
 - (iv) Glyphius glyphius
 - (v) Himantura fluviatilis
 - (vi) Pristis microdon
 - (vii) Pristis zijsron
 - (viii) Rhynchobatus djiddensis
 - (ix) Urogymnus asperrimus
- (b) for Part IVB, relating to Mollusca and the entries relating there to, the following Part IVB and the entries shall be substituted, namely:-

"Part IV B-Mollusca

- 1 Cassis cornuta
- 2 Charonia tritonis
- 3 Conus milmedwardsi4.
- 4 Cypraeassis rufa
- 5 Hippopus hippopu
- 6 Nautilus pompilus
- 7 Tridacna maxima
- 8 Tridacna squamosa
- 9 Tudicla spiralis".;

2 In **Schedule IV** to the said Act, after serial number 18 and the entries relating there to, the following serial numbers and entries shall be added, namely:-

"19. Mollusca

- i. Cypraea limacine
- ii. Cypraea mappa
- iii. Cypraea talpa
- iv. Fasciolaria trapezium
- v. Harpulina arausica
- vi. Lambis chiragra
- vii. Lambis chiragraarthritis
- viii. Lambis crocea
- ix. Lambis millepeda
- x. Lambis Scorpio
- xi. Lambis truncata
- xii. Placenta placenta
- xiii. Strombus plicatus siboldi
- xiv. Trochus niloticus
- xv. Turbo marmoratus

Source : Zoological Survey of India.

TABLE 3.3.4 : ESTIMATED NUMBER/PERCENTAGE OF ENDEMIC SPECIES IN INDIA

Sl. No.	Taxon	Number of Species		Percentage
		Total	Endemic	
1	2	3	4	5
1	Protozoa			
I	Free living	1247	90	7.21
II	Parasitic	1330	550	41.33
2	Mesozoa	10	10	100.00
3	Porifera			
I	Freshwater	31	13	41.93
4	Cnidaria	842	10 *	--
5	Platyhelminthes	1622	1160	71.88
6	Rotifera	330	23	7.00
7	Gastroticha	100	64	64.00
8	Kinorhyncha	10	7	70.00
9	Nematoda	2850	400 *	--
10	Acanthocephala	229	203	88.64
11	Mollusca			
I	Terrestrial	1487	498	33.50
II	Freshwater	183	77	41.80
12	Echiura	43	12	28.00
13	Annelida			
I	Oligochaeta	473	368	77.80
II	Hirudinea	59	25	42.37
14	Arthropoda			
I	Crustacea	2934	501	17.07
II	Insecta	59353	20717	34.90
III	Arachnida	5818	2623	45.08
15	Phoronida	11	1	9.00
16	Bryozoa	4000	12 *	--
17	Entoprocta	10	1	10.00
18	Chaetognatha	111	3	2.70
19	Chordata			
I	Pisces	2546	223	8.75
II	Amphibia	209	128	61.24
III	Reptilia	456	214	47.00
IV	Aves	1166 **	50 **	4.29 **
V	Mammalia	390	42 **	11.28

Source : Faunal Diversity in India (1998) with updated (**) figures, Zoological Survey of India.

* : Complete data not available, hence percentage not calculated

** : Rec. Zool. Survey of India, occasional paper no. 200 (2002)
Rec. Zool. Survey of India, occasional paper no. 201 (2002)

TABLE 3.3.5 : NATIONAL PARKS AND WILDLIFE SANCTUARIES OF INDIA*(Sq. Km.)**As on 31st July 2004*

Sl. No.	State	National Parks		Wildlife Sanctuaries		Total Area
		Number	Area	Number	Area	
1	2	3	4	5	6	7
1	Andhra Pradesh	4	373.23	21	13096.23	13469.46
2	Arunachal Pradesh	2	2468.23	11	7606.37	10074.60
3	Assam	5	1977.79	16	888.22	2866.01
4	Bihar	1	335.60	11	2993.16	3328.76
5	Chhatisgarh	3	2929.50	10	3419.46	6348.96
6	Delhi	0	0.00	1	17.76	17.76
7	Goa	1	107.00	6	647.96	754.96
8	Gujarat	4	479.67	22	16602.61	17082.28
9	Haryana	2	46.98	9	287.32	334.30
10	Himachal Pradesh	2	1429.40	32	5665.92	7095.32
11	Jammu & Kashmir	4	3810.07	16	10163.67	13973.74
12	Jharkhand	1	231.67	10	1868.31	2099.98
13	Karnataka	5	2472.18	21	4231.44	6703.62
14	Kerala	3	536.52	12	1788.20	2324.72
15	Madhya Pradesh	9	3656.35	25	7199.52	10855.87
16	Maharashtra	5	955.93	36	14729.64	15685.57
17	Manipur	1	40.00	5	706.50	746.50
18	Meghalaya	2	267.48	3	34.21	301.69
19	Mizoram	2	200.00	5	775.00	975.00
20	Nagaland	1	202.02	3	20.35	222.37
21	Orissa	2	990.70	18	7961.94	8952.64
22	Punjab	0	0.00	10	316.71	316.71
23	Rajasthan	4	3859.37	24	5301.84	9161.21
24	Sikkim	1	1784.00	6	265.10	2049.10
25	Tamil Nadu	5	307.84	20	2997.57	3305.41
26	Tripura	0	0.00	4	603.08	603.08
27	Uttaranchal	6	4083.31	6	2868.00	6951.31
28	Uttar Pradesh	1	490.10	23	5185.90	5676.00
29	West Bengal	5	1692.65	15	1223.47	2916.12
30	Andaman & Nicobar Islands	9	1153.94	96	466.22	1620.16
31	Chandigarh	0	0.00	2	26.01	26.01
32	Dadra & Nagar Haveli	0	0.00	1	92.00	92.00
33	Daman & Diu	0	0.00	1	2.18	2.18
34	Lakshadweep	0	0.00	1	0.01	0.01
35	Pondicherry	0	0.00	0	0.00	0.00
Total		90	36881.53	502	120051.88	156933.41

Source: Wildlife Division of MOE&F

The Wildlife (Protection) Act, 1972 provided for setting up National Parks and Sanctuaries for Wildlife. The basic idea of these National Parks and Sanctuaries is to provide natural habitats for the Wildlife. The aim is not only to protect and preserve what remains of wild fauna and flora but also to augment this price-less national heritage.

In India, at present there are 502 Wildlife Sanctuaries and 90 National Parks, covering an area of 156933.41 Sq. Km.

TABLE 3.3.6 : ALL INDIA TIGER POPULATION

Sl. No.	State	Years						
		1972	1979	1984	1989	1993	1997	2001-02 **
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	35	148	164	235	197	171	192
2	Arunachal Pradesh	69	139	219	135	180	*	NR
3	Assam	147	300	376	376	325	458	354
4	Bihar	85	110	138	157	137	103	76
5	Chhattisgarh	--	--	--	--	--	--	227
6	Goa Daman & Diu	--	--	--	2	3	6	5
7	Gujarat	8	7	9	9	5	1	Nil
8	Jharkhand	--	--	--	--	--	--	34
9	Karnataka	102	156	202	257	305	350	401
10	Kerala	60	134	89	45	57	73	71
11	Madhya Pradesh	457	529	786	985	912	927	710
12	Maharashtra	160	174	301	417	276	257	238
13	Manipur	1	10	6	31	--	*	NR
14	Meghalaya	32	35	125	34	53	*	47
15	Mizoram	--	65	33	18	28	12	28
16	Nagaland	80	102	104	104	83	*	23
17	Orissa	142	173	202	243	226	194	173
18	Rajasthan	74	79	96	99	64	58	58
19	Sikkim	--	--	2	4	2	*	NR
20	Tamil Nadu	33	65	97	95	97	62	60
21	Uttar Pradesh	262	487	698	735	465	475	284
22	Uttaranchal	--	--	--	--	--	--	251
23	West Bengal	73	296	352	353	335	361	349
24	Haryana	--	--	1	--	--	--	--
25	Tripura	7	6	5	--	--	*	NR
Total		1827	3015	4005	4334	3750	3508	3581

Source: Project Tiger, Ministry of Environment & Forests

N.R. : Not Reported by States

* : Tiger census was not carried out in North Eastern States in 1997.

** : under compilation/vetting

TABLE 3.3.7 : AREA OF TIGER RESERVES IN TIGER RANGE STATES

Sl. No.	Year of Creation	Name of Tiger Reserve	State	Total Area in sq. Kms.
1	2	3	4	5
1	1973-74	Bandipur	Karnataka	866
	1999-2000	Nagarhole (extension)		643
2	1973-74	Corbett	Uttar Pradesh	1316
3	1973-74	Kanha	Madhya pradesh	1945
4	1973-74	Manas	Assam	2840
5	1973-74	Melghat	Maharashtra	1677
6	1973-74	Palamau	Bihar	1026
7	1973-74	Ranthambhore	Rajasthan	1334
8	1973-74	Similipal	Orissa	2750
9	1973-74	Sunderbans	West Bengal	2585
10	1978-79	Periyar	Kerala	777
11	1978-79	Sariska	Rajasthan	866
12	1982-83	Buxa	West Bengal	759
13	1982-83	Indravati	Madhya Pradesh	2799
14	1982-83	Nagarjunsagar	Andhra Pradesh	3568
15	1982-83	Namdapha	Arunachal Pradesh	1985
16	1987-88	Dudhwa	Uttar Pradesh	811
	1999-2000	Katerniaghat (extension)		551
17	1988-89	Kalakad- Mundanthurai	Tamil Nadu	800
18	1989-90	Valmiki	Bihar	840
19	1992-93	Pench	Madhya Pradesh	758
20	1993-94	Tadoba-Andheri	Maharashtra	620
21	1993-94	Bandhavgarh	Madhya Pradesh	1162
22	1994-95	Panna	Madhya Pradesh	542
23	1994-95	Dampha	Mizoram	500
24	1998-99	Bhadra	Karnataka	492
25	1998-99	Pench	Maharashtra	257
26	1999-2000	Bori, Satpura, Panchmari	Madhya pradesh	1486
27	2004-05	Pakhui	Arunachal Pradesh-Assam	861.5
28	2004-05	Nameri	Assam	344.5
Total				37761

Source : Project Tiger

TABLE 3.3.8 : POPULATION OF TIGERS IN TIGER RESERVES

Sl. No.	Name of Tiger Reserve	Year of Creation	State	1979	1984	1989	1993	1995	1997	2001-02*
1	2	3	4	5	6	7	8	9	10	11
1	Bandhavgarh	1993-94	Madhya Pradesh	--	--	--	41	46	46	56
2	Bandipur	1973-74	Karnataka	39	53	50	66	74	75	82
3	Bhadra		Karnataka	--	--	--	--	--	--	35
4	Bori-Satpura-Pachmari		Madhya Pradesh	--	--	--	--	--	--	35
5	Buxa	1982-83	West Bengal	--	15	33	29	31	32	31
6	Corbett	1973-74	Uttanchal	84	90	91	123	128	138	137
7	Dampaha	1994-95	Mizoram	--	--	--	7	4	5	4
8	Dudhwa	1987-88	Uttar Pradesh	--	--	90	94	98	104	76
9	Indravati	1982-83	Madhya Pradesh	--	38	28	18	15	15	29
10	Kalakad	1988-89	Tamilnadu	--	--	22	17	16	28	27
11	Kanha	1973-74	Madhya Pradesh	71	109	97	100	97	114	127
12	Manas	1973-74	Assam	69	123	92	81	94	125	65
13	Melghat	1973-74	Maharashtra	63	80	77	72	71	73	73
14	Nagarjunsagar	1982-83	Andhra Pradesh	--	65	94	44	34	39	67
15	Namdhapa	1982-83	Arunachal Pradesh	--	43	47	47	52	57	61
16	Pakhui-Nameri		Arunachal Pradesh	--	--	--	--	--	--	26 (Nameri)
17	Palamau	1973-74	Jharkhand	37	62	55	44	47	44	32
18	Panna	1994-95	Madhya Pradesh	--	--	--	25	22	22	31
19	Pench	1992-93	Madhya Pradesh	--	--	--	39	27	29	40
20	Pench		Maharashtra	--	--	--	--	--	--	14
21	Periyar	1978-79	Kerala	34	44	45	30	39	40	36
22	Ranthambhore	1973-74	Rajasthan	25	38	44	36	38	32	35
23	Sariska	1978-79	Rajasthan	19	26	19	24	25	24	22
24	Similipal	1973-74	Orissa	65	71	93	95	97	98	99
25	Sunderbans	1973-74	West Bengal	205	264	269	251	242	263	245
26	Tadoba	1993-94	Maharashtra	--	--	--	34	36	42	38
27	Valmiki	1989-90	Bihar	--	--	81	49	NR	53	53
Total				711	1121	1327	1366	1333	1498	1576

Source: Project Tiger, Ministry of Environment & Forests

NR : Not Reported by States

* : Under compilation/vetting

The tiger reserves are the specially constituted reserves representing different habitat types with the aim of maintenance of available tiger population in India in its natural environment. One of the main achievements of Project tiger launched in 1973 is the excellent recovery of habitat and increase in the population of all species of wildlife in the Reserves. Tiger population in these reserves has increased from 711 in 1979 to 1576 in 2001-02.

TABLE 3.3.9: DESIGNATED ELEPHANT RESERVES IN INDIA (Revised Network-2003)

Sl. No.	Elephant Range	Elephant Reserve	State	Date of Notification	Total Area (Sq. Km)	Population of Elephant
1	2	3	4	5	6	7
1	Eastern India (South West Bengal- Jharkhand-Orissa)	Mayurjharna	W. Bengal	24.10.2002	414	56
		Singhbhum	Jharkhand	26.09.2001	4530	300
		Mayurbhanj	Orissa	29.09.2001	3214	565
		Mahanadi	Orissa	19.06.2002	1038	179
		Sambalpur	Orissa	27.03.2002	427	257
Total					9623	1357
2	North Brahmaputra Arunachal - Assam)	Kameng	Ar. Pradesh	19.06.2002	1892	377
		Sonitpur	Assam	7.03.2003	1420	577
Total					3312	954
3	South Brahmaputra (Assam- Arunachal)	Dihing-Patkai	Assam	17.04.2003	937	457
		Deormali*	Ar. Pradesh		900+	150+
Total					1837+	600+
4	Kaziranga (Assam- Nagaland)	Kaziranga-Karbi Anglong	Assam	17.04.2003	3270	1000
		Dhansiri-Lungding	Assam	19.04.2003	2740	430
		Intanki #	Nagaland		202	28
Total					6212	1458
5	Eastern Dooars (Assam- W. Bengal)	Chirang-Ripu	Assam	6.03.2003	2600	807
		E. Dooars	W. Bengal	28.08.2002	978	165
Total					3578	972
6	Garo Hills (Meghalaya)	Garo Hills	Meghalaya	31.10.2001	3500	878
7	Nilgiri -Eastern Ghat (Karnataka- Kerala- Tamilnadu-Andhra)	Mysore	Karnataka	25.11.2002	6724	5838
		Wayanad	Kerala	2.04.2002	1200	961
		Nilgiri	Tamilnadu	15.10.2003	4663	1938
		Rayala #	A. Pradesh		3013	74
Total					15600	8811
8	South Nilgiri (Kerala- Tamilnadu)	Nilambur	Kerala	2.04.2002	1419	886
		Coimbatore	Tamilnadu	15.10.2003	566	132
Total					1985	1018
9	Western Ghat (Tamilnadu- Kerala)	Anamalai	Tamilnadu	15.10.2003	1457	680
		Anamudi	Kerala	2.04.2002	3728	750
Total					5185	1430
10	Periyar (Kerala- Tamilnadu)	Periyar	Kerala	2.04.2002	3742	1268
		Srivilliputhur	Tamilnadu	15.10.2003	1249	223
Total					4991	1491
11	Northern India (Uttaranchal)	Shivalik	Uttaranchal	28.10.2002	5405	1391
TOTAL					61200+	20150+

Source : Project Elephant, Ministry of Environment and Forests

Approved by Govt. of India, but not yet notified by the State Government.

* Proposal under examination.

TABLE 3.3.10: LOCATION OF MAJOR ZOOS

Sl. No	Name of Zoo	Location	State
1	2	3	4
1	Mini Zoo, Haddo	Port Blair	Andaman & Nicobar Islands
2	Indira Gandhi Zoological Park	visakhapatnam	Andhra Pradesh
3	Nehru Zoological Park	Hyderabad	Andhra Pradesh
4	Sri Venkateswara Zoological Park	Tirupati	Andhra Pradesh
5	Biological Park	Itanagar	Arunachal Pradesh
6	Assam State Zoo Cum Botanical Garden	Guwahati	Assam
7	Sanjay Gandhi Biological Park	Patna	Bihar
8	Maitri Baagh Zoo	Bhilai	Chhattisgarh
9	National Zoological Park	Delhi	Delhi
10	Bondla Zoo	Usgao	Goa
11	Kamla Nehru Zoological Garden	Ahemdabad	Gujarat
12	Sakkarbaug Zoo	Junagarh	Gujarat
13	Indroda Nature Park	Gandhi Nagar	Gujarat
14	Sayaji Baug Zoo	Vadodara	Gujarat
15	Sundervan Nature Discovery Centre	Jodhpur tekra	Gujarat
16	Rohtak Zoo	Rohtak	Haryana
17	Himalayan Nature Park (Kufri)	Kufri	Himachal Pradesh
18	Bhagwan Birsa Biological Park	Ranchi	Jharkhand
19	Jawaharlal Nehru Biological Park	Bokaro	Jharkhand
20	Tata Steel Zoological Park	Jamshedpur	Jharkhand
21	National Park, Bannerghatta Zoological Garden	Bannerghatta	Karnataka
22	Sri Chamarajendra Zoological Gardens	Mysore	Karnataka
23	Tiger & Lion Safari, Thyarekoppa	Shimoga	Karnataka
24	Thiruvananthapuram Zoo	Thiruvananthapuram	Kerala
25	State Museum & Zoo	Thrissur	Kerala
26	Gandhi Zoological Park	Gwalior	Madhya Pradesh
27	Van Vihar National Park	Bhopal	Madhya Pradesh
28	Kamla Nehru Prani Sanghralay Zoo	Indore	Madhya Pradesh
29	Rajiv Gandhi Zoological Park And Wildlife Research Centre	Pune	Maharashtra
30	Veer mata Jijabai Bhosale Udyan & Zoo	Mumbai	Maharashtra
31	Aurangabad Municipal Zoo	Aurangabad	Maharashtra
32	Mahatma Gandhi Rashtriya Udyan Zoo	Solapur	Maharashtra
33	Nisargakavi Bahlnabai Choudhary Pranisansangahralay	Pune	Maharashtra
34	Manipur Zoological Garden	Imphal	Manipur
35	Lady Hydari Park Animal	Shillong	Meghalaya
36	Nandankanan Biological Park	Bhubaneswar	Orissa
37	Indira Gandhi Park Zoo & Deer Park	Rourkela	Orissa
38	Mahendra Chaudhury Zoological Park	Chhatbir	Punjab
39	Jaipur Zoo	Jaipur	Rajasthan
40	Bikaner Zoo	Bikaner	Rajasthan
41	Jodhpur Zoo	Jodhpur	Rajasthan

TABLE 3.3.10: LOCATION OF MAJOR ZOOS- Concl'd.

Sl. No	Name of Zoo	Location	State
1	2	3	4
42	Udaipur Zoo	Udaipur	Rajasthan
43	Arigna Anna Zoological Park	Vandalur	Tamil Nadu
44	Madras Crocodile Bank Trust/Centre For Herpetology	Mahabalipuram	Tamil Nadu
45	Chennai Snake Park Trust	Guindy	Tamil Nadu
46	Children's Corner	Guindy	Tamil Nadu
47	V.O.C. Park Mini Zoo	Coimbatore	Tamil Nadu
48	Sepahijala Zoological Park	Sepahijala	Tripura
49	Kanpur Zoological Park	Kanpur	Uttar Pradesh
50	Lucknow Prani Udyan	Lucknow	Uttar Pradesh
51	Pt Govind Ballabh Pant High Altitude Zoo	Nainital	Uttaranchal
52	Alipore Zoological Garden	Calcutta	West Bengal
53	Calcutta Snake Park	Badu	West Bengal
54	Marble Palace Zoo	Calcutta	West Bengal
55	Padmaja Naidu Himalayan Zoological Park	Darjeeling	West Bengal

Source : Central Zoo Authority, Ministry of Environment & Forests

TABLE 3.3.11 : INDIA'S LIVESTOCK POPULATION*(Thousand)*

Sl. No.	Livestock	Number of Animals					
		1977	1982	1987	1992	1997	2003
1	2	3	4	5	6	7	7
1	Cattle	180140	192453	199695	204584	198882	185181
2	Buffaloes	62019	69783	75967	84206	89918	97922
3	Sheep	40907	48765	45703	50783	57494	61469
4	Goats	75620	95255	110207	115279	122721	124358
5	Horses & Ponnies	916	900	797	817	826	751
6	Pigs	7647	10071	10626	12788	13291	13519
7	Mules	89	131	167	193	220	176
8	Donkeys	978	1024	958	967	881	650
9	Camels	1068	1078	1001	1031	911	632
II Other Livestock							
1	Yaks	132	128	36	58	59	65
2	Mithuns	129	154	129	154	177	278
Total		369645	419742	445286	470860	485379	485002

Source : Live Stock Census, Ministry of Agriculture

The livestock population in the country increased from 292 million in 1951 to the current estimate of 485 million. Grazing by Livestock puts pressure on grasslands and forests. Because of excessive grazing, natural regeneration is either absent or inadequate in 52.8% of the forests in the country.

An analysis of forests vis-a-vis livestock indicates continued free access to the forest area which has resulted in high rates of growth of livestock population causing land degradation and arresting the development of markets for forage crops. Overgrazing impedes regeneration, retards growth of vegetation, and leads to extinction of good palatable grasses which are replaced by less palatable and inferior grasses. Extensive areas have been invaded by bushes which are not browsed, excessive trampling makes the soil compact and impervious and prevents circulation of air, water, thus exposing the soil to erosion by wind and water.

CHART 5 : INDIA'S LIVESTOCK POPULATION

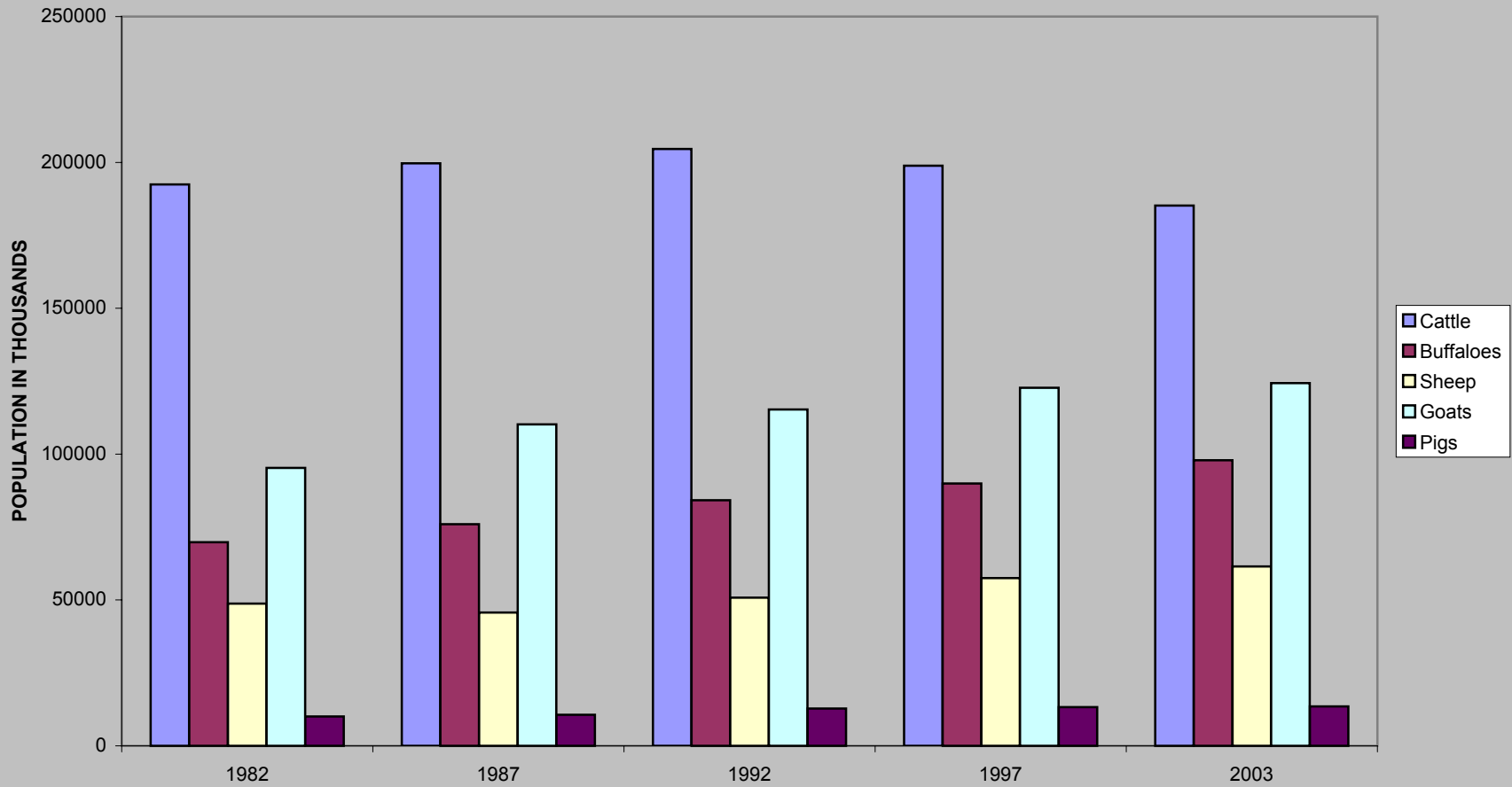


TABLE 3.3.12 : LIVESTOCK POPULATION AS PER 2003 CENSUS

Sr. No.	States/UTs	Cattle			Buffalos	Sheep	Goats	Pigs	Horses and ponies	Mules	Donkeys	Camel	Yaks	Mithun	(In Thousands)	
		Cross bred	Indigenous	Total											Total Live-stock	Total
1	Andhra Pradesh	1107	8193	9300	10630	21376	6277	570	9	-	33	-	0	0	38895	102278
2	Arunachal Pradesh	13	445	458	11	19	231	330	7	0	0	0	9	192	799	1743
3	Assam	440	7999	8440	678	170	2987	1543	12	0	0	0	0	0	5390	21664
4	Bihar	1274	9455	10729	5743	382	9490	672	117	4	23	1	0	0	16432	13911
5	Chhatisgarh	253	8629	8882	1598	121	2336	552	4	-	-	-	0	0	4610	8181
6	Goa	12	63	76	37	-	11	87	-	0	-	0	0	0	136	566
7	Gujarat	639	6785	7424	7140	2062	4541	351	18	1	65	53	0	0	14231	8153
8	Haryana	573	967	1540	6035	633	460	120	25	14	8	50	0	0	7345	13619
9	Himachal Pradesh	677	1559	2236	774	926	1125	3	18	24	9	-	2	0	2881	767
10	Jammu & Kashmir	1320	1764	3084	1039	3411	2055	2	172	40	24	2	47	24	6816	5568
11	Jharkhand	145	7513	7659	1343	680	5031	1108	5	-	-	-	0	0	8167	14429
12	Karnataka	1602	7936	9539	3991	7256	4484	312	14	-	25	-	0	0	16082	25593
13	Kerala	1735	387	2122	65	4	1213	76	-	-	-	0	0	0	1358	12216
14	Madhya Pradesh	317	18595	18913	7575	546	8142	358	32	4	39	8	0	0	16704	11705
15	Maharashtra	2776	13527	16303	6145	3094	10684	439	40	1	57	-	0	0	20460	37968
16	Manipur	69	349	418	77	6	33	415	2	0	0	0	0	20	553	2941
17	Meghalaya	23	744	767	18	18	327	419	2	0	0	0	0	0	785	2821
18	Mizoram	9	27	36	6	1	17	218	2	-	0	0	0	2	245	1125
19	Nagaland	243	208	451	34	4	175	644	1	-	0	0	0	40	898	2789
20	Orissa	1063	12840	13903	1394	1620	5803	662	-	-	9	-	0	0	9489	17611
21	Punjab	1531	508	2039	5995	220	278	29	29	9	5	3	0	0	6568	10779
22	Rajasthan	464	10390	10854	10414	10054	16809	338	25	3	143	498	-	0	38284	6192
23	Sikkim	80	79	159	2	6	124	38	2	0	0	0	7	0	178	322
24	Tamilnadu	5140	4001	9141	1658	5593	8177	321	25	0	26	-	0	0	15800	86591
25	Tripura	57	702	759	14	3	472	209	0	0	0	0	0	0	698	3057
26	Uttar Pradesh	1634	16917	18551	22914	1437	12941	2284	154	52	182	16	0	0	39980	11718
27	Uttaranchal	228	1961	2188	1228	296	1158	33	17	22	1	0	0	0	2755	1984
28	West Bengal	1119	17794	18913	1086	1525	18774	1301	18	-	-	0	0	0	22704	60656
29	A& Nicobar	13	51	64	16	0	64	52	0	0	-	0	0	0	132	931
30	Chandigarh	5	1	6	23	-	1	-	-	-	-	-	0	0	24	152
31	D & Nagar Haveli	1	49	50	4	-	21	3	-	0	0	-	0	0	28	106
32	Daman & Diu	0	4	4	1	-	4	-	-	0	0	-	0	0	5	29
33	Delhi	58	34	92	231	3	17	28	1	1	1	-	0	0	282	459
34	Lakshadweep	2	2	4	0	0	47	0	0	0	0	0	0	0	47	146
35	Pondicherry	63	16	78	4	3	48	1	-	0	-	0	0	0	56	244
	All India	24686	160495	185181	97922	61469	124358	13519	751	176	650	632	65	278	485002	489012

Note: *- Data from 2 districts are yet to be received from State Government.

-' denotes less than 500.

Source: Department of Animal Husbandary and dairying

TABLE 3.3.13 : FISH PRODUCTION

(Lakh tonne)

Sl No.	Year	Marine	Inland	Total
1	2	3	4	5
1	1950-51	5.34	2.18	7.52
2	1960-61	8.80	2.80	11.60
3	1970-71	10.86	6.70	17.56
4	1980-81	15.55	8.87	24.42
5	1981-82	14.45	9.99	24.44
6	1982-83	14.27	9.40	23.67
7	1983-84	15.19	9.87	25.06
8	1984-85	16.98	11.03	28.01
9	1985-86	17.16	11.60	28.76
10	1986-87	17.13	12.29	29.42
11	1987-88	16.58	13.01	29.59
12	1988-89	18.17	13.35	31.52
13	1989-90	22.75	14.02	36.77
14	1990-91	23.00	15.36	38.36
15	1991-92	24.47	17.10	41.57
16	1992-93	25.76	17.89	43.65
17	1993-94	26.49	19.95	46.44
18	1994-95	26.92	20.97	47.89
19	1995-96	27.07	22.42	49.49
20	1996-97	29.67	23.81	53.48
21	1997-98	29.50	24.38	53.88
22	1998-99	26.96	26.02	52.98
23	1999-00	28.52	28.23	56.75
24	2000-01	28.11	28.45	56.56
25	2001-02	28.30	31.26	59.56
26	2002-03	29.90	32.10	62.00
27	2003-04	29.41	34.58	63.99
28	2004-05	27.80	35.20	63.04

Source : Department of Animal Husbandry and Dairying, Ministry of Agriculture

TABLE 3.3.14 : MARINE FISHERY RESOURCES OF INDIA

Sl. No.	State/Union Territory	Continental Shelf ('000 Sq Kms.)	Number of Landing Centres	Number of Fishing Villages	App. Length of Coast Line (Kms.)
1	Andhra Pradesh	33	508	508	974
2	Goa	10	88	72	104
3	Gujarat	184	286	851	1600
4	Karnataka	27	29	221	300
5	Kerala	40	226	222	590
6	Maharashtra	112	184	395	720
7	Orissa	26	63	329	480
8	Tamil Nadu	41	362	446	1076
9	West Bengal	17	65	652	158
10	Andaman & Nicobar Islands	35	57	45	1912
11	Daman & Diu	-	7	31	27
12	Lakshadweep	4	11	10	132
13	Pondicherry	1	28	45	45
TOTAL		530	1914	3827	8118

Source: Department of Animal Husbandry and Dairying, Ministry of Agriculture

TABLE 3.3.15 : STATE-WISE FISH PRODUCTION

(Tonnes)

SI. No.	States/UT's	2002-2003			2003-2004			2004-2005		
		Marine	Inland	Total	Marine	Inland	Total	Marine	Inland	Total
1	2	6	7	8	9	10	11	12	13	14
1	Andhra Pradesh	248495	579402	827897	263930	680710	944640	210733	642321	853054
2	Arunachal Pradesh	0	2604	2604	0	2650	2650	0	2704	2704
3	Assam	0	165521	165521	0	181000	181000	0	186314	186314
4	Bihar	0	261000	261000	0	266490	266490	0	267510	267510
5	Goa	72287	4247	76534	83760	3600	87360	94813	4231	99044
6	Gujarat	743638	34267	777905	609140	45480	654620	584779	50426	635205
7	Haryana	0	35182	35182	0	39130	39130	0	42050	42050
8	Himachal Pradesh	0	7244	7244	0	6530	6530	0	6901	6901
9	Jammu & Kashmir	0	19750	19750	0	19750	19750	0	19100	19100
10	Karnataka	180161	86263	266424	187000	70000	257000	171227	80000	251227
11	Kerala	603286	75036	678322	608520	76180	684700	601863	76451	678314
12	Madhya Pradesh	0	42168	42168	0	50820	50820	0	62060	62060
13	Maharashtra	386860	127236	514096	420010	125120	545130	417769	130250	548019
14	Manipur	0	16600	16600	0	17600	17600	0	17800	17800
15	Meghalaya	0	5372	5372	0	5150	5150	0	5638	5638
16	Mizoram	0	3250	3250	0	3380	3380	0	3680	3680
17	Nagaland	0	5500	5500	0	5560	5560	0	4900	4900
18	Orissa	115006	172527	287533	116880	190020	306900	121928	193657	315585
19	Punjab	0	66000	66000	0	83650	83650	0	77700	77700
20	Rajasthan	0	25600	25600	0	14300	14300	0	16391	16391
21	Sikkim	0	140	140	0	140	140	0	140	140
22	Tamil Nadu	371500	102000	473500	373000	101140	474140	307693	151734	459427
23	Tripura	0	29515	29515	0	17980	17980	0	19838	19838
24	Uttar Pradesh	0	249837	249837	0	267000	267000	0	277074	277074
25	West Bengal	181500	938500	1120000	181600	988000	1169600	179500	1035500	1215000
26	A & N Islands	28228	74	28302	31060	90	31150	32600	83	32683
27	Chandigarh	0	84	84	0	80	80	0	84	84
28	Dadar & Nagar Haveli	0	46	46	0	50	50	0	48	48
29	Daman & Diu	11258	0	11258	13770	0	13770	12506	0	12506
30	Delhi	0	2250	2250	0	2100	2100	0	1410	1410
31	Lakshadweep	7496	0	7496	10030	0	10030	11964	0	11964
32	Pondicherry	40105	4910	45015	42800	5200	48000	31500	5250	36750
33	Chattisgarh	0	99801	99801	0	111050	111050	0	120072	120072
34	Uttranchal	0	2552	2552	0	2560	2560	0	2566	2566
35	Jharkhand	0	45380	45380	0	75380	75380	0	22000	22000
36	Deep Sea Fishing Sector	0	0	0	0	0	0	0	0	0
	Total	2989820	3209858	6199678	2941500	3457890	6399390	2778875	3525883	6304758

Source : Department of Animal Husbandary and Dairying, Ministry of Agriculture

TABLE 3.3.16 : INLAND FISHERY WATER RESOURCES OF INDIA

SI. No.	State/UTs	Rivers & Canals (Kms.)	Reservoirs (Lakh Ha)	Tanks & Ponds (Lakh Ha)	Floodplain Lakes & Derelict Water (Lakh Ha)	Brackish Water (Lakh Ha)
1	2	3	4	5	6	7
1	Andhra Pradesh	11,514	2.34	5.17	-	0.60
2	Arunachal Pradesh	2,000	-	2.76	0.42	-
3	Assam	4,820	0.02	0.23	1.10	-
4	Bihar	3,200	0.60	0.95	0.50	-
5	Chhattisgarh	3,573	0.84	0.63	-	1.47
6	Goa	250	0.03	0.03	-	Neg
7	Gujarat	3,865	2.43	0.71	0.12	1.00
8	Haryana	5,000	0.09	0.10	0.10	-
9	Himachal Pradesh	3,000	0.42	0.01	-	-
10	Jammu & Kashmir	27,781	0.07	0.17	0.06	-
11	Jharkhand	4,200	0.94	0.29	-	-
12	Karnataka	9,000	4.40	2.90	-	0.10
13	Kerala	3,092	0.30	0.30	2.43	2.40
14	Madhya Pradesh	17,088	2.27	0.60	-	-
15	Maharashtra	16,000	2.79	0.59	-	0.10
16	Manipur	3,360	0.01	0.05	0.04	-
17	Meghalaya	5,600	0.08	0.02	Neg	-
18	Mizoram	1,395	-	0.02	-	-
19	Nagaland	1,600	0.17	0.50	Neg	-
20	Orissa	4,500	2.56	1.14	1.80	4.30
21	Punjab	15,270	Neg	0.07	-	-
22	Rajasthan	5,290	1.20	1.80	-	-
23	Sikkim	900	-	-	0.03	-
24	Tamil Nadu	7,420	5.70	0.56	0.07	0.60
25	Tripura	1,200	0.05	0.13	-	-
26	Uttar Pradesh	28,500	1.38	1.61	1.33	-
27	Uttaranchal	2,686	0.20	0.01	0.00	-
28	West Bengal	2,526	0.17	2.76	0.42	2.10
29	Andaman & Nicobar Islands	115	0.01	0.03	-	1.20
30	Chandigarh	2	-	Neg	Neg	-
31	Dadra & Nagar Haveli	54	0.05	-	-	-
32	Daman & Diu	12	-	Neg	-	Neg
33	Delhi	150	0.04	-	-	-
34	Lakshadweep	-	-	-	-	-
35	Pondicherry	247	-	Neg	0.01	Neg
Total		195,210	29.07	24.14	7.98	12.40

Source: Annual Report 2005-06, Department of Animal Husbandry and Dairying, Ministry of Agriculture
Neg - Negligible

TABLE 3.3.17: INCIDENCE OF LIVESTOCK AND POULTRY DISEASES IN INDIA

(Jan-Dec2004)

Sl. No.	Disease Name	Species	Number of		
			Outbreak	Attack	Death
1	Foot and mouth disease	Bovine	588	21988	227
		Buffalo	29	2050	27
		Ovine/Caprine	8	501	18
		Swine	11	182	22
2	Peste Des Petits Ruminants(PPR)	Ovine/Caprine	639	17018	4499
3	Bluetongue	Ovine/Caprine	283	9250	1013
4	Sheep pox and goat pox	Ovine/Caprine	196	8897	892
5	Classical Swine fever	Swine	59	635	117
6	Newcastle disease	Avian	323	79590	10742
7	Anthrax	Bovine	75	243	181
		Buffalo	1	4	4
		Ovine/Caprine	61	272	238
		Bovine	29	85	85
8	Rabies	Buffalo	1	1	1
		Canine	4	12	12
		Ovine/Caprine	2	54	54
		Bovine	9	208	2
9	Bovine Anaplasmosis	Buffalo	1	5	0
		Bovine	36	2866	9
10	Bovine Babesiosis	Buffalo	1	8	0
		Bovine	11	46	0
11	Bovine Brucellosis	Bovine	11	46	0
12	Hamorrhagic septicaemia	Bovine	610	3465	1672
		Buffalo	124	1033	473
13	Contagious caprine pleuropneumonia	Caprine	13	309	2
14	Surra(Trypanosoma evansi)	Equine	2	27	0
15	Porcine Brucellosis	Swine	1	31	0
16	Duck virus enteritis (Duck plague)	Avian	22	2857	879
17	Fowl cholera	Avian	8	722	419
18	Fowl Pox	Avian	130	3971	170
19	Fowl typhoid	Avian	26	30122	3846
20	Infectious bursal disease (Gumboro)	Avian	167	34440	6584
21	Marek's disease	Avian
22	Avian mycoplasmosis /Chronic res. Disease	Avian	37	26364	2744
23	Blackleg/Black quarter	Bovine	608	2282	1023
24	Coccidiosis	Avian	147	23559	31690
		Bovine	24	5039	4
		Ovine/Caprine	4	1795	5
		Swine	2	4	0
25	Distomatosis (liver fluke)/Fascioliasis	Bovine	111	61510	16
		Buffalo	3	103	0
		Ovine/Caprine	8	110	22
		Swine
26	Enterotoxaemia	Ovine/Caprine	198	1625	1223
29	Sheep Mange	Ovine	2	80	0
30	Infectious Coryza	Avian	25	44384	190

.. Outbreaks have been included in other species.

Source: Annual Report 2005-06, Department of Animal Husbandry and Dairying, Ministry of Agriculture