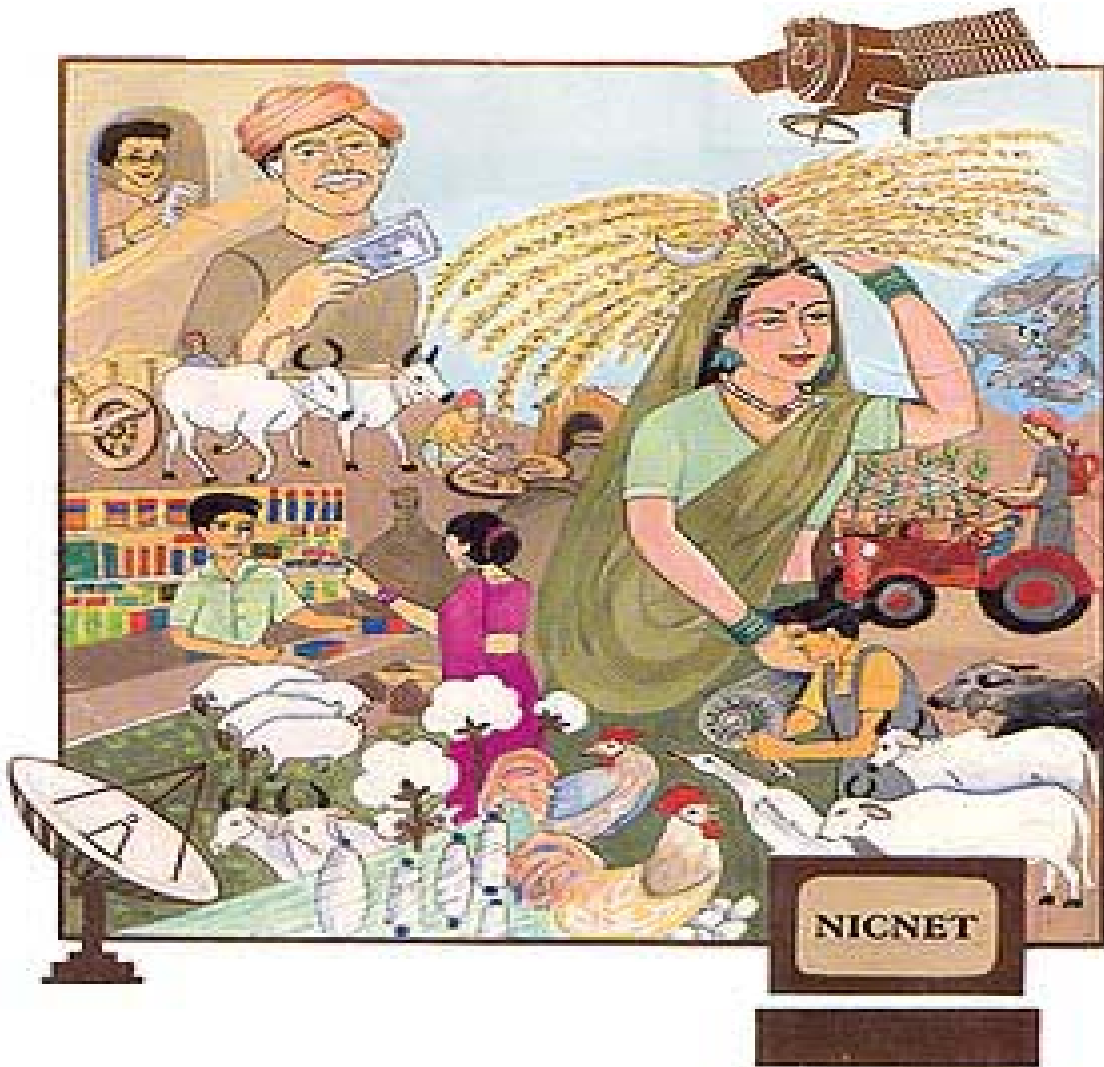


# CHAPTER FIVE



## Land and Soil

## CHAPTER FIVE

### LAND AND SOIL

5.1 On the basis of nine-fold land-use classification, the land use statistics is available for roughly 306 million hectares (mha) of land out of the 329 million hectares of the total geographic area which accounts for 93% of the total land.

5.2 The area under barren and uncultivable land is generally unsuitable for agriculture either because of topography or its inaccessibility. Instances are the desert areas in Rajasthan, the saline land in part of the Rann of Kutch in Gujarat, and the weed infected and ravine land in Madhya Pradesh. Recently, the area under non-agricultural land has increased due to increase in developmental activities; e.g. housing, transport system, irrigation, etc. About 24 mha are occupied by the housing, the industry and for other non-agricultural uses, 19.2 mha are snowbound and remote, leaving only 263 million hectare for agriculture, forestry, pasture and other biomass production. The net sown area increased from 119 mha in 1950-51 to 140 mha in 1970-71, mostly through reclamation of old fallow and cultivable wastelands and diversion of groves. Since 1970-71, the net area sown has remained almost the same at around 142 mha levels. The data shows that land use in the country, over the last five decades, has undergone drastic change. Land under agriculture has almost doubled, forest cover has dwindled to less than half, large tracts of fertile agriculture and forest land have been diverted for urbanization and settlements. Deforestation contributes to loss of precious top soil which amounts to about 35 percent of the global sediment load going to oceans even though water flowing through our rivers is only about five percent of the flow of rivers in the world.

#### Land Degradation

5.3 Land is degraded when it suffers a loss of intrinsic qualities, decline in its capabilities or loss in its productive capacity. Land degradation may be due to natural causes or human causes or it may be due to combination of both. Soil erosion is the major cause of land degradation.

#### Soil Erosion

5.4 Soil is the non-renewable natural resource which supports life on earth. It is estimated that one-sixth of the world's soils have already been degraded by water and wind erosion. This has two important consequences: the reduced ability of society to produce sufficient food due to loss of quality and depth of soils; and resulted in off-site pollution associated with erosion. These include siltation of dams, pollution of water-courses by agricultural chemicals and damage to property by soil-laden runoff. On-site issues of declining soil quality tend to be spatially dispersed occurring on many different soil types whereas off-site pollution issues tend to be locally concentrated.

5.5 Soil erosion problems are not confined to the Developing World. In the last two decades, there has been a growing appreciation of the threat to European soils as a result of intensification of agriculture, overgrazing and climate change. The threat is most apparent in the Mediterranean Region where the term "desertification" has been used to describe a series of inter-related changes which include soil erosion. The EU-funded Mediterranean Desertification and Land Use (MEDALUS) project is currently addressing these latter issues for much of Southern Europe.

5.6 In India, about 130 mha of land (45% of total geographical area) is affected by serious soil erosion through ravine and gully, shifting cultivation, cultivated wastelands, sandy areas, deserts and water logging (Govt. of India, 1989).

5.7 Soil erosion by rain and river that takes place in hilly areas causes landslides and floods, while cutting trees for firewood, agricultural implements and timber, grazing by a large number of livestock, over and above, the carrying capacity of grass lands, traditional agricultural practices, construction of roads, indiscriminate (limestone) quarrying and other activities, have all led to the opening of hill-faces to heavy soil erosion. Wind erosion causes expansion of deserts, dust, storms, whirlwinds and destruction of crops, while moving sand covers the land and makes it sterile. Excessive soil erosion with consequent high rate of sedimentation in the reservoirs and decreased fertility has become serious environmental problems with disastrous economic consequences. Of the 16 rivers of world, which experience severe erosion and carry heavy sediment load, 3 rivers, namely; Ganges, Brahmaputra and Kosy occupy the 2<sup>nd</sup>, 3<sup>rd</sup> and 12<sup>th</sup> position, respectively.

5.8 Soil erosion results in huge loss of nutrients in suspension or solution, which are removed away from one place to another, thus causing depletion or enrichment of nutrients. Besides the loss of nutrients from the topsoil, there is also degradation through the creation of gullies and ravines, which makes the land unsuitable for agricultural production. Subsidence of the land in some areas and landslides in the hilly tracts are problems affecting highways, habitations and irrigation dams.

5.9 The use of pesticides above permissible limits enters the food chain, causing health hazards. A major concern

particularly about chlorinated hydrocarbons like DDT is their persistence in soil.

5.10 Among fertilizers, the conversion of fertilizer-N to gaseous forms-ammonia (NH<sub>3</sub>) and various oxides of Nitrogen leads to atmospheric pollution. Escape of fertilizer-N as ammonia gas is called ammonia volatilization. The presence of ammonia and sulphur dioxide may lead to acid rains which ultimately degrade the soil. Atmospheric ammonia contaminates water bodies, impairs visibility and causes corrosion. Nitrous oxide also contributes to global warming.

### **Mining**

5.11 The activity of mining and quarrying covers underground and surface mines, quarries and wells and includes extraction of minerals and also all the supplemental activities such as dressing and benefaction of ores, crushing, screening, washing, cleaning, grading, milling floatation, melting floatation and other preparations carried out at the mine site which are needed to render the material marketable.

5.12 The mining activities in the country are governed by the Mineral Conservation Development Rules (MCDR), 1988. Every license holder of mining lease shall take all possible precautions for protection of environment and control of pollution while conducting prospecting, mining beneficiation or metallurgical operations in the area. Specific provisions for proper removal and utilization of top soil, storage of over burden and waste rocks, reclamation and rehabilitation of lands, precautions against air pollution, noise and ground vibrations, restoration of flora, discharge of toxic liquid, control of surface subsidence have been provided under the MCDR. The Indian Bureau of Mines collects the statistics on all these aspects under the above rules.

**TABLE 5.1.1 : LAND USE CLASSIFICATION IN INDIA (Contd...)**

Classification	Unit (Million/Hectare)				
	1950-51	1960-61	1970-71	1980-81	1990-91
1	2	3	4	5	6
<b>I. Geographical Area</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>
<b>II. Reporting Area for Land Utilisation Statistics ( 1 to 5)</b>	<b>284.32</b>	<b>298.76</b>	<b>303.76</b>	<b>304.16</b>	<b>304.86</b>
1. Forests	40.48	54.05	63.92	67.47	67.81
2. Not Available for Cultivation (a+b)	<b>47.52</b>	<b>50.75</b>	<b>44.64</b>	<b>39.62</b>	<b>40.48</b>
(a) Non Agricultural Uses	9.36	14.84	16.48	19.66	21.09
(b) Barren and Unculturable Land	38.16	35.91	28.16	19.96	19.39
3. Other Uncultivated Land excluding fallow land (a+b+c)	<b>49.45</b>	<b>37.64</b>	<b>35.06</b>	<b>32.32</b>	<b>30.22</b>
(a)Permanent Pastures and Other Grazing Land	6.68	13.97	13.26	11.97	11.40
(b) Land Under Miscellaneous Tree Crops and Groves not Included in Net Area Sown	19.83	4.46	4.30	3.61	3.82
(c) Culturable Wasteland	22.94	19.21	17.50	16.74	15.00
4. Fallow Land (a+b)	<b>28.13</b>	<b>22.82</b>	<b>19.88</b>	<b>24.75</b>	<b>23.36</b>
(a) Fallow Land Other Than Current Fallows	17.45	11.18	8.76	9.92	9.66
(b) Current Fallows	10.68	11.64	11.12	14.83	13.70
5. Net Area Sown (6-7)	118.75	133.20	140.27	140.00	143.00
6. Gross Cropped Area	131.89	152.77	165.79	172.63	185.74
7. Area Sown More Than Once	13.15	19.57	25.52	32.63	42.74
8. Cropping Intensity*	111.1	114.70	118.20	123.30	129.90
<b>III. Net Irrigated Area</b>	<b>20.85</b>	<b>24.66</b>	<b>31.10</b>	<b>38.72</b>	<b>48.02</b>
<b>IV. Gross Irrigated Area</b>	<b>22.56</b>	<b>27.98</b>	<b>38.20</b>	<b>49.78</b>	<b>63.20</b>

**TABLE 5.1.1 : LAND USE CLASSIFICATION IN INDIA.... (Concluded)**

Classification	2000-01	2001-02 (P)	2002-03 (P)	2003-04 (P)	2004-05 (P)
1	7	8	9	10	11
<b>I. Geographical Area</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>	<b>328.73</b>
<b>II. Reporting Area for Land Utilisation Statistics ( 1 to 5)</b>	<b>305.08</b>	<b>305.01</b>	<b>305.24</b>	<b>305.32</b>	<b>305.23</b>
1. Forests	69.62	69.51	69.64	69.67	69.67
2. Not Available for Cultivation (a+b)	<b>41.55</b>	<b>41.78</b>	<b>42.08</b>	<b>42.23</b>	<b>42.30</b>
(a) Non Agricultural Uses	23.81	24.07	24.28	24.66	24.72
(b) Barren and Unculturable Land	17.74	17.71	17.80	17.57	17.58
3. Other Uncultivated Land excluding fallow land (a+b+c)	<b>27.71</b>	<b>27.37</b>	<b>27.41</b>	<b>26.98</b>	<b>27.00</b>
(a)Permanent Pastures and Other Grazing Land	10.83	10.59	10.51	10.45	10.43
(b) Land Under Miscellaneous Tree Crops and Groves not Included in Net Area Sown	3.32	3.37	3.36	3.39	3.38
(c) Culturable Wasteland	13.56	13.41	13.54	13.14	13.19
4. Fallow Land (a+b)	<b>25.03</b>	<b>24.94</b>	<b>33.46</b>	<b>25.48</b>	<b>24.94</b>
(a) Fallow Land Other Than Current Fallows	10.19	10.30	11.76	11.20	10.72
(b) Current Fallows	14.84	14.64	21.70	14.28	14.22
5. Net Area Sown (6-7)	141.16	141.42	132.66	140.95	141.32
6. Gross Cropped Area	185.70	189.75	175.66	190.37	190.91
7. Area Sown More Than Once	44.54	48.33	43.00	49.42	49.59
8. Cropping Intensity*	131.60	134.20	132.40	135.10	135.10
<b>III. Net Irrigated Area</b>	<b>54.84</b>	<b>56.3</b>	<b>53.88</b>	<b>56.00</b>	<b>58.54</b>
<b>IV. Gross Irrigated Area</b>	<b>75.82</b>	<b>78.07</b>	<b>72.89</b>	<b>77.11</b>	<b>79.51</b>

Source : Agricultural Statistics At a Glance 2007, Directorate of Economic & Statistics, Ministry of Agriculture.

P : Provisional

\* : Cropping Intensity is obtained by dividing the gross cropped area by the net area sown.

Chart 5.1.1 Land use in India -1980-81

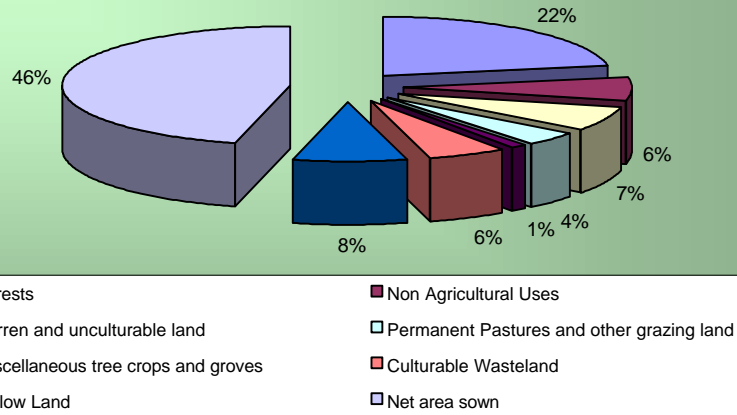


Chart 5.1.1: Land Use in India-2000-01

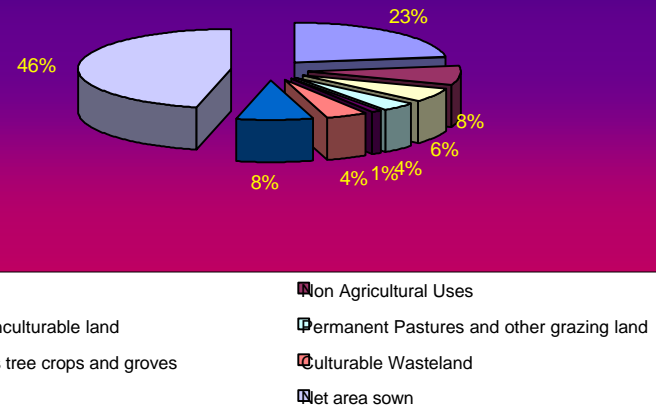


Chart 5.1.1: Land use in India-1990-91

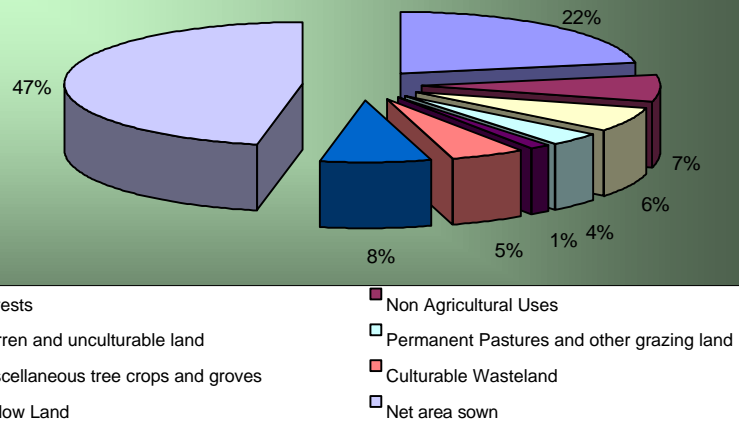
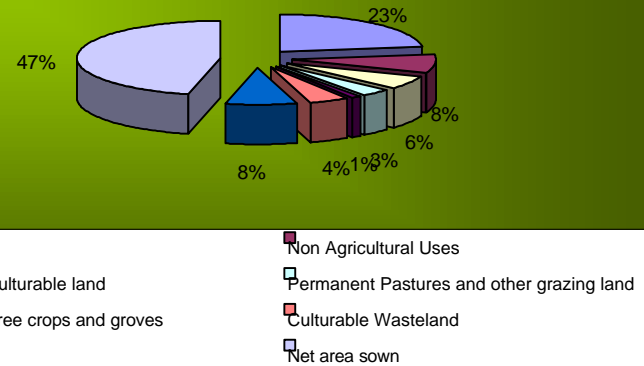


Chart 5.1.1: Land use in India-2004-05



**TABLE 5.1.2 : SELECTED CATEGORIES OF LAND USE CLASSIFICATION***(million hectare)*

Sl. No.	Years	Net Sown Area (A)	Gross Sown Area (B)	Area Sown More Than Once (B-A)	Net Irrigated Area (C)	Gross Irrigated Area (D)	Area Irrigated More Than Once (D-C)
1	2	3	4	5	6	7	8
1	1950-51	118.75	131.89	13.14	20.85	22.56	1.71
2	1960-61	133.20	152.77	19.57	24.66	27.98	3.32
3	1970-71	140.27	165.79	25.52	31.10	38.19	7.09
4	1980-81	140.00	172.63	32.63	38.72	49.78	11.06
5	1990-91	143.00	185.74	42.74	47.78	62.47	14.69
6	1995-96	142.20	187.47	45.27	53.40	71.35	17.95
7	1999-2000	140.96	189.44	48.48	57.11	78.81	21.70
8	2000-01	141.16	185.70	44.54	54.84	75.82	20.98
9	2001-02 (P)	141.42	189.75	48.33	56.30	78.07	21.77
10	2002-03 (P)	132.66	175.66	43.00	53.88	72.89	19.01
11	2003-04 (P)	140.95	190.37	49.42	56.00	77.11	21.11
12	2004-05 (P)	141.32	190.91	49.59	58.54	79.51	20.97

Source : Agricultural Statistics At a Glance 2007, Directorate of Economic &amp; Statistics, Ministry of Agriculture.

P : Provisional

LAND USES

**TABLE 5.1.3 : STATEWISE INFORMATION ON SOILS OF PRIORITY WATERSHEDS  
OF RIVER VALLEY PROJECTS/ FLOOD PRONE RIVER CATCHMENTS**

(area in lakh hectares)

Sl. No.	State/UT	Catchment Area	Surveyed Area	Priority Area	Subwatershed Area On Which Reports Available
1	2	3	4	5	6
	<b>States</b>				
1	Andhra Pradesh	57.55	57.55	15.41	7.19
2	Arunachal Pradesh	--	--	--	--
3	Assam	1.53	1.53	0.86	0.24
4	Bihar	21.12	21.12	3.02	0.38
5	Chhattisgarh	91.70	91.70	16.36	9.31
6	Goa	--	--	--	--
7	Gujarat	5.74	5.74	2.19	1.92
8	Haryana	18.13	18.13	3.07	0.22
9	Himachal Pradesh	42.33	28.96	15.82	4.85
10	Jammu & Kashmir	2.70	4.10	1.52	0.16
11	Jharkhand	48.99	48.99	17.20	10.21
12	Karnataka	103.90	103.90	26.38	13.38
13	Kerala	2.86	2.86	1.57	0.88
14	Madhya Pradesh	174.92	160.65	51.32	19.30
15	Maharashtra	197.46	196.76	48.15	15.80
16	Manipur	--	--	--	--
17	Meghalaya	--	--	--	--
18	Mizoram	0.05	0.05	0.05	0.00
19	Nagaland	--	--	--	--
20	Orissa	27.92	27.92	8.88	10.83
21	Punjab	10.32	10.32	0.52	0.01
22	Rajasthan	76.07	48.20	12.58	5.95
23	Sikkim	4.09	4.09	2.14	1.10
24	Tamil Nadu	5.38	5.38	1.09	1.19
25	Tripura	0.45	0.45	0.35	0.04
26	Uttaranchal	25.70	25.70	10.56	0.61
27	Uttar Pradesh	35.96	35.96	11.76	3.37
28	West Bengal	19.84	19.84	4.10	7.13
29	Chhattisgarh & M. P.	9.04			
30	Bihar & Jharkhand	13.38	13.38	4.23	1.12
31	Uttaranchal & U. P.	3.75			
	<b>Union Territories</b>				
1	Andaman & Nicobar Island	--	--	--	--
2	Chandigarh	0.10	0.10	0.04	0.00
3	Dadra & Nagar Haveli	0.13	0.13	0.06	0.10
4	Daman & Diu	--	--	--	--
5	Delhi	1.06	1.06	0.17	0.00
6	Lakshadweep	--	--	--	--
7	Pondicherry	--	--	--	--
	<b>Total</b>	<b>1002.17</b>	<b>945.96</b>	<b>269.41</b>	<b>115.32</b>

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



**TABLE 5.1.4 (a) : STATE-WISE INFORMATION ON DEGRADED LAND OF THE DISTRICTS**

(hectare)					
Sl. No.	State/UT	District	Total Area	Total Degraded	% Degraded Area
1	2	3	4	5	6
1	Andaman & Nicobar	--	--	--	--
2	Andhra Pradesh	1 Kurnool	1761393	309412	17.5
		2 Nellore	1307600	169808	13
3	Arunachal Pradesh	--	--	--	--
4	Assam	--	--	--	--
5	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
6	Chandigarh	--	--	--	--
7	Chhattisgarh	--	--	--	--
8	Dadra & Nagar Haveli	--	--	--	--
9	Daman Diu	--	--	--	--
10	Delhi	--	--	--	--
11	Goa				
		1 North Goa	175592	24634	14.03
		2 South Goa	194608	19639	10.09
12	Gujarat				
		1 Bharuch	776430	192841	24.84
		2 Bhavnagar	1115500	271337	24.33
		3 Surat	776161	85469	11.1
13	Haryana	--	--	--	--
14	Himachal Pradesh				
		1 Chamba	671500	74238	11.05
		2 Kullu	566604	259127	45.73
15	Jammu & Kashmir	--	--	--	--
16	Jharkhand				
		1 Palamau	802291	50363	6.28
17	Karnataka				
		1 Chickmagalur	722072	16038	2.26
		2 Bagalkot	658877	135145	20.51
		3 Bijapur	1053471	256010	24.3
		4 Gulbarga	1610208	313347	19.46
		5 Tumkur	1055090	N/A	--
18	Kerala				
		1 Palghat	448000	16204	3.6
19	Lakshadeep	--	--	--	--
20	Madhya Pradesh				
		1 Balaghat	924500	112941	12.21
		2 Gwalior	456449		
		3 Jhabua	646912	322601	49.9
		4 Morena	1168336	373553	27.2
		5 Sidhi	1039194	228736	22.01
21	Maharashtra				
		1 Bhandara	934716	49933	5.35
		2 Nasik	1527764	647462	42.38
		3 Wardha	630900	69308	10.98

**TABLE 5.1.4 (a) : STATE-WISE INFORMATION ON DEGRADED LAND OF THE DISTRICTS--Concl'd.**

(hectare)					
Sl. No.	State/UT	District	Total Area	Total Degraded	% Degraded Area
1	2	3	4	5	6
22	Manipur	--	--	--	--
23	Meghalaya				
		1 East Garohills	260300	34201	10.37
		2 South Garohills	185700	N/A	--
		3 West Garohills	370700	N/A	--
24	Mizoram				
		1 Aizawl	357631	109184	30.53
		2 Champhai	318583	184795	58.01
		3 Kolasib	138251	16865	12.2
		4 Mamit	302575	50986	16.85
		5 Serchhip	142160	70702	49.74
25	Nagaland	--	--	--	--
26	Orissa	--	--	--	--
27	Pondicherry	--	--	--	--
28	Punjab	--	--	--	--
29	Rajasthan				
		1 Ajmer	842388	398913	47.36
		2 Jhunjhunu	591681	81478	13.78
		3 Nagaur	1764504	361120	20.47
30	Sikkim	--	--	--	--
31	Tamilnadu				
		1 Coimbatore	746128	19566	2.62
		2 Dharmapuri	962247	194532	20.21
		3 Erode	825997	5579	0.68
		4 Thirunelveli	682308	36240	5.31
		5 Tuticorin	459054	78213	17.04
32	Tripura	--	--	--	--
33	Uttar Pradesh				
		1 Agra	400369	92650	23.14
		2 Lalitpur	504149	95450	18.9
		3 Mathura	376432	22975	6.1
		4 Sitapur	570633	88717	15.55
34	Uttranchal	--	--	--	--
35	West Bengal				
		1 Puruliya	625100	198619	31.77
		2 North 24 Pargana	378090	64062	16.94
		3 South 24 Paragna	966171	263635	27.29
<b>GRAND TOTAL</b>		<b>52</b>	<b>35660062</b>	<b>6703466</b>	<b>18.80</b>

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

**TABLE 5.1.4 (b) : STATE-WISE EXTENT OF ALKALI AREA, PHYSICAL PROGRESS OF RECLAMATION**

(Phy. In thousand ha.)

S.No	Name of State	Alkali Area	Reclamation up to IX Plan	Progress during 3 years of X Plan (2002-05)	Reclamation upto (2004-05)	Target for 2005-06
1	2	3	4	5	6	7
1	Andhra Pradesh	64.00	0.00	0.00	0.00	0.00
2	Bihar	4.00	0.00	0.00	0.00	0.00
3	Gujarat	610.00	4.72	25.00	29.80	8.00
4	Haryana	450.00	166.95	32.00	198.90	10.00
5	Karnataka	76.00	0.00	2.34	2.30	5.00
6	Madhya Pradesh	164.00	0.09	0.00	0.10	0.00
7	Maharashtra	59.00	0.00	0.00	0.00	0.50
8	Punjab	718.00	275.20	1.33	276.50	5.00
9	Rajasthan	332.00	5.87	13.40	19.30	12.00
10	Tamilnadu	4.00	0.00	2.10	2.10	5.00
11	Uttar Pradesh	1100.00	128.23	1.54	<b>129.70</b>	0.00
	<b>Total</b>	<b>3581.00</b>	<b>581.06</b>	<b>77.71</b>	<b>658.70</b>	<b>45.50</b>

Source: Ministry of Agriculture

**TABLE 5.1.5 :STATEWISE COVERAGE UNDER DETAILED SOIL SURVEY**

Sl. No.	State/UT	RVP	FPR	RVP & FPR	Non-RVP/FPR	Consultancy Rehabilitated	Refuge Rehabilitation	Coal Mine Rehabilitation	Total
1	2	3	4	5	6	7	8	9	10
1	Andaman & Nicobar Island			0			4400		4400
2	Andhra Pradesh	719059		719059	312378		10115		1041552
3	Arunachal Pradesh			0	24990		10591		35581
4	Assam	24241		24241			7834		32075
5	Bihar		38128	38128	41		7623		45792
6	Chandigarh			0	318				318
7	Chhattisgarh	909809	21574	931383			6980	7728	946091
8	Dadra & Nagar Haveli	9933		9933	10471				20404
9	Daman & Diu			0					0
10	Delhi			0	21613				21613
11	Goa			0	164302	5			164307
12	Gujarat	192174		192174	670				192844
13	Haryana		22352	22352					22352
14	Himachal Pradesh	420480	64550	485030	490				485520
15	Jammu & Kashmir	16007		16007			456		16463
16	Jharkhand	738767	282458	1021225	31682		595	2922	1056424
17	Karnataka	1416867		1416867	82843	289	2031		1502030
18	Kerala	88078		88078	15277				103355
19	Lakshadweep			0					0
20	Madhya Pradesh	1793034	137270	1930304	19559		22527	13179	1985569
21	Maharashtra	1579855		1579855	33351			13535	1626741
22	Manipur			0					0
23	Meghalaya			0					0
24	Mizoram			0	166				166
25	Nagaland			0					0
26	Orissa	1082854		1082854	112109		21006		1215969
27	Pondicherry			0					0
28	Punjab	1350		1350	2490				3840
29	Rajasthan	365463	229503	594966	23860				618826
30	Sikkim	110046		110046					110046
31	Tamil Nadu	119365		119365	23232				142597
32	Tripura	3970		3970					3970
33	Uttaranchal	30210	30957	61167	4391	15006			80564
34	Uttar Pradesh	45481	309314	354795	27299		6199		388293
35	West Bengal	433537	279430	712967	4905		9842	1430	729144
36	Bihar & Jharkhand		112409	112409					112409
<b>Total</b>		<b>10100580</b>	<b>1527945</b>	<b>11628525</b>	<b>916437</b>	<b>15300</b>	<b>110199</b>	<b>38794</b>	<b>12709255</b>

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

RVP : Rivers valley Project , FPR Flood Prome Rivers

**Total 5.1.6 : STATE -WISE WASTELANDS OF INDIA**

(Area in Scl. Kms~)

Sl. No.	State/UT	No of Districts Covered	Total Geographic Area of Covered	Total Wastelands area in dlstts.covered	% of wasteland to total geog. Area
1	Andhra Pradesh	23	275068	45267.15	16.46
2	Arunachal Pradesh	16	83743	18175.95	21.70
3	Assam	23	78438	14034.08	17.89
4	Bihar	37	94171	5443.68	5.78
5	Chhattisgarh	16	135194	7584.15	5.61
6	Goa	2	3702	531.29	14.35
7	Gujarat	25	196024	20377.74	10.40
8	Haryana	19	44212	3266.45	7.39
9	Himachal Pradesh	12	55673	28336.8	50.90
10	Jammu & Kashmir*	14	101387	70201.99	69.24
11	Jharkhand	19	79706	11165.26	14.01
12	Karnataka	27	191791	13536.58	7.06
13	Kerala	14	38863	1788.8	4.60
14	Madhya Pradesh	49	308252	57134.03	18.53
15	Maharashtra	33	307690	49275.41	16.01
16	Manipur	9	22327	13174.74	59.01
17	Meghalaya	7	22429	3411.41	15.21
18	Mizoram	8	21081	4469.88	21.20
19	Nagaland	7	16579	3709.4	22.37
20	Orissa	30	155707	18952.74	12.17
21	Punjab	17	50362	1172.84	2.33
22	Rajasthan	32	342239	101453.86	29.64
23	Sikkim	4	7096	3808.21	53.67
24	Tripura	4	10486	1322.97	12.62
25	Tamil Nadu	29	130058	17303.29	13.30
26	Uttaranchal	13	53483	16097.46	30.10
27	Uttar Pradesh	70	240928	16984.16	7.05
28	West Bengal	18	88752	4397.56	4.95
29	Union Territories	20	10973	314.38	2.87
<b>Total</b>		<b>597</b>	<b>3166414</b>	<b>552692.25</b>	<b>17.45</b>

Source :Wastelands Atlas of India-2005

Note : \* Unsurveyed area (J&K) 120849.00

Total Geographical Area : 3287263.00

TABLE 5.2.1 : USE OF AGRICULTURAL INPUTS

Sl.	Programme	Unit	1980-81	1990-91	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07**
1	2	3	4	5	6	7	8	9	10	11	12
1.	<b>Seeds</b>										
	I. Production of Breeder Seeds	Thousand Quintals	5.27	33.89	42.69	45.54	48.42	61.82	66.46	66.88	59.25
	II. Production of Foundation Seeds	Lakh Quintals	--	3.35	5.91	5.44	6.14	6.50	6.9	7.4	8.0
	III. Distribution of Certified/Quality Seeds	Lakh Quintals	25.01	57.10	86.27	98.03	108.59	120.26	126.75	126.75	149.63
2.	<b>Consumption of Chemical Fertilizers (I+II+III)</b>										
		Lakh Tonnes	55.16	125.46	167.02	173.60	160.94	167.99	183	203.4	220.45(E)
		Kg./ha	31.83	67.49	89.63	91.13	84.49	88.19	96.52	104.5	113.26(E)
	I. Nitrogenous(N)	Lakh Tonnes	36.78	79.97	109.20	113.10	104.74	110.77	117.13	127.23	140.48(E)
	II. Phosphatic(P)	Lakh Tonnes	12.14	32.21	42.15	43.82	40.19	41.24	46.24	52.04	56.63(E)
	III. Potassic(K)	Lakh Tonnes	6.24	13.28	15.67	16.67	16.01	15.98	20.61	24.13	23.34(E)
3.	<b>Consumption of Pesticides(Technical Grade)</b>	Thousand Tonnes	45.00	75.00	43.58	47.02	48.30	41	40.67	39.77	37.95
4.	<b>Area under Major Crops</b>										
	Rice	Million ha	40.15	42.69	44.71	44.90	41.18	42.50	42.12	43.70	43.60
	Wheat	Million ha	22.28	24.17	26.73	26.33	25.20	26.58	26.49	26.50	28.00
	Jowar	Million ha	15.18	14.36	9.86	9.80	9.30	9.38	9.10	8.67	8.45
	Bajra	Million ha	11.66	10.48	9.83	9.53	7.74	10.61	9.23	9.58	9.52
	Maize	Million ha	6.01	5.90	6.61	6.58	6.64	7.32	7.43	7.59	7.96
5.	<b>Area covered under Soil Conservation</b>	Million ha	24.37	34.90	39.49*	39.62*	39.64*	39.80*	N.A.	N.A.	N.A.

Source : Agricultural Statistics at a Glance, 2007, Department of Agriculture &amp; Cooperation, Ministry of Agriculture

N.A. : Not available E - estimated

\* Excluding state sector soil conservation programme

\*\* Target irrespective of seeds

**TABLE 5.2.2 : PERFORMANCE OF CROP PRODUCTION**

(million tonnes)

Sl. No.	Crops											
		1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07*
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Rice	81.74	82.53	86.08	89.68	84.98	93.34	71.82	88.53	83.13	91.79	92.76
2	Wheat	69.35	66.35	71.29	76.37	69.68	72.77	65.76	72.16	68.64	69.35	74.89
3	Coarse Cereals	34.10	30.40	31.34	30.33	31.08	33.38	26.07	37.60	33.47	34.07	34.25
4	Total Cereals	185.19	179.28	188.71	196.38	185.74	199.49	163.65	198.29	185.24	195.21	201.90
5	Total Pulses	14.24	12.98	14.91	13.42	11.08	13.37	11.13	14.91	13.13	13.39	14.23
6	Total Foodgrains	199.44	192.26	203.61	209.80	196.81	212.85	174.77	213.19	198.36	208.60	216.13
7	Sugarcane	277.56	279.54	288.72	299.32	295.96	297.21	287.38	233.86	237.08	281.17	345.31
8	Total Oilseeds	24.38	21.32	24.75	20.72	18.44	20.66	14.84	25.19	24.35	27.98	23.88
9	Cotton @	14.23	10.85	12.29	11.53	9.52	10.00	8.62	13.73	16.43	18.50	22.70
10	Jute & Mesta #	11.13	11.02	9.81	10.56	10.56	11.68	11.28	11.17	10.27	10.84	11.26

Source : Statistics at a Glance,2007, Ministry of Agriculture

# : Production in million bales of 180 kg. each

@ : Production in million bales of 170 kg. each

\* Advance estimate as on 19.07.2007

The crop yields have increased greatly in India over the past 20-25 years. Most of these increases have been due to the development of crop varieties which respond to fertilizers. The different types of cropping systems practised in traditional agriculture have given way to systems involving only a few crops which are highly nutrient depleting but high yielding. The legumes, grasses, and millets which were regular components of cropping systems in Indian agriculture have largely been phased out in highly productive areas due to poor economic returns and replaced by high yielding rice, wheat, sugarcane, etc. As a result, the water level is receding at an alarming rate. This has created the problems of soil erosion and the destruction and disturbances to wild life habitats.

AGRICULTURE

**TABLE 5.2.3 : AREA UNDER PRINCIPAL CROPS**

(million hectare)

Sl. No.	Crops	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07*
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Rice	43.4	43.4	44.8	45.2	44.7	44.9	41.2	42.6	41.9	43.7	43.6
2	Wheat	25.9	26.7	27.5	27.5	25.7	26.3	25.2	26.6	26.4	26.5	28.0
3	Pulses	22.4	22.9	23.5	21.1	20.3	22.0	20.5	23.5	22.8	22.4	23.1
4	Foodgrains	123.6	123.8	125.2	123.1	121.0	122.8	113.9	123.4	120.0	121.6	123.5
5	Cotton	9.1	8.9	9.3	8.7	8.5	9.1	7.7	7.6	8.8	8.7	9.1
6	Jute & Mesta	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9
7	Sugarcane	4.2	3.9	4.0	4.2	4.3	4.4	4.5	3.9	3.7	4.2	4.9
8	Tobacco	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.4	0.4	0.4	-
9	Oilseeds	26.3	26.1	26.2	24.3	22.8	22.6	21.5	23.7	27.5	27.9	26.0

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Source : Statistics at a Glance,2007, Ministry of Agriculture

\* Advance estimates as on 19.07.2007

TABLE 5.2.4(a) : CAPACITY AND PRODUCTION IN THE CHEMICAL INDUSTRY IN INDIA

(INSECTICIDES)

(thousand metric tonnes)

Sl. No.	Products	2000-2001		2001-2002		2002-03		2003-04		2004-05		2005-06		2006-07	
		Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	<b>Insecticides</b>														
1	D.D.T.	6.3	3.8	6.3	3.5	6.3	2.9	6.3	4.5	6.3	4.0	6.3	4.4	6.3	4.5
2	Malathion	9.5	5.9	9.5	5.6	9.5	4.2	11.7	3.9	11.9	4.7	11.8	2.7	8.8	4.0
3	Parathion Methyl	4.0	2.0	4.0	2.1	4.0	2.0	4.0	1.3	4.0	1.0	4.0	0.5	4.0	0.0
4	Dimethoate	3.2	1.5	3.2	0.8	3.2	0.8	3.2	0.9	3.2	0.9	3.2	0.8	3.2	1.0
5	D.D.V.P.	3.9	2.6	3.9	2.8	3.9	2.5	4.4	3.5	4.3	5.0	4.3	3.8	4.3	3.9
6	Quinalphos	5.6	2.6	5.6	2.1	5.6	1.8	4.0	1.8	4.0	0.9	4.0	0.9	4.0	0.8
7	Monocrotophos	16.2	8.3	16.2	6.7	16.2	6.5	11.0	8.1	13.9	9.5	14.0	4.9	14.0	4.9
8	Phosphamidon	5.7	3.5	5.7	0.5	5.7	0.8	3.9	0.4	3.9	0.4	3.9	0.5	3.9	0.4
9	Phorate	7.5	6.1	7.5	4.8	7.5	3.2	8.2	5.1	8.2	3.6	8.2	6.2	8.2	5.7
10	Ethion	5.1	3.5	5.1	4.1	5.1	1.7	4.8	2.8	5.6	1.8	5.6	1.5	5.6	1.8
11	Endosulphan	10.1	8.5	10.1	4.5	10.1	3.7	10.1	3.6	10.1	3.1	10.1	2.9	9.9	3.9
12	Fenvalerate	2.1	1.6	2.1	1.2	2.1	0.5	2.6	0.8	2.6	0.6	2.7	0.6	2.7	0.5
13	Cypermethrin	4.6	4.4	4.6	5.1	4.6	5.1	5.9	5.2	5.9	6.5	6.9	6.5	6.9	5.1
14	Anilophos	1.2	0.8	1.2	0.6	1.2	0.4	1.1	0.4	1.1	0.4	1.1	0.2	1.1	0.0
15	Acephate	4.8	3.1	4.8	4.4	4.8	4.8	6.1	4.0	6.1	6.1	9.2	8.5	9.2	8.3
16	Chlorpyrifos	10.3	8.0	10.3	7.0	10.3	6.4	6.8	8.1	8.6	9.0	9.1	4.9	9.1	4.7
17	Phosalone	1.0	0.6	1.0	0.5	1.0	0.4	1.0	0.5	1.0	0.5	1.0	0.3	1.0	0.2
18	Metasystox	*	0.6	*	0.7	*	0.5	*	0.5	*	0.6	*	0.3	*	0.6
19	Abate	*	0.3	*	0.0	*	0.0	*	0.0	*	0.0	*	0.0	*	0.0
20	Fenthion	*	0.2	*	0.01	*	0.9	*	0.2	*	0.2	*	0.3	*	0.1
21	Triazophos	*	0.8	*	1.5	*	1.2	*	2.1	*	2.9	*	2.9	*	1.8
22	Lindane	1.3	0.5	1.3	0.3	1.3	0.3	1.0	0.4	1.4	0.4	0.7	0.2	0.7	0.3
23	Temephos	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.3	0.2	0.0	0.2	0.1
24	Deltamethrin	0.3	0.1	0.3	0.1	0.3	0.2	0.4	0.2	0.5	0.4	0.5	0.3	0.5	0.3
25	Alphamethrin	0.4	0.1	0.4	0.3	0.4	0.2	1.2	0.2	1.3	0.3	1.5	0.2	1.5	0.2
	<b>Total</b>	<b>103.3</b>	<b>69.6</b>	<b>103.3</b>	<b>59.4</b>	<b>103.3</b>	<b>51.1</b>	<b>97.9</b>	<b>58.6</b>	<b>104.1</b>	<b>63.1</b>	<b>108.4</b>	<b>54.5</b>	<b>105.3</b>	<b>53.2</b>

Source : Department of Chemicals &amp; Petrochemicals, Ministry of Chemicals &amp; Fertilizers

\* : Not available

Note : Cap. capacity Pro. Production



**TABLE 5.2.4(b) : CAPACITY AND PRODUCTION IN THE CHEMICAL INDUSTRY IN INDIA  
(FUNGICIDES, HERBICIDES, WEEDICIDES, RODENTICIDES, FUMIGENTS)**

*(thousand tonnes)*

Sl. No.	Products	2001-2002		2002-03		2003-04		2004-05		2005-06		2006-07	
		Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.	Cap.	Pro.
1	2	7	8	9	10	11	12	13	14	15	16	17	18
<b>I</b>	<b>Fungicides</b>	<b>14.5</b>	<b>13.7</b>	<b>15.2</b>	<b>12.7</b>	<b>21.1</b>	<b>19.4</b>	<b>26.2</b>	<b>22.7</b>	<b>26.1</b>	<b>19.4</b>	<b>26.1</b>	<b>23.5</b>
1	Captan & Captafol	1.8	1.2	1.8	0.8	1.8	0.8	1.8	0.8	1.8	0.0	1.8	0.2
2	Ziram	0.4	0.1	0.4	0.1	0.4	0.3	0.5	0.3	0.5	0.1	0.5	0.2
3	Carbendazim (Bavistin)	1.1	0.7	1.8	1.3	1.5	0.8	1.5	0.7	1.5	0.4	1.5	0.1
4	Calixin	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.0	0.2	0.0
5	Mancozab	11.0	11.6	11.0	10.2	15.7	17.3	20.7	20.8	20.7	18.9	20.7	22.9
6	Copper-Oxychloride	*	0.1	*	0.2	1.5	0.2	1.5	0.0	1.5	0.0	1.5	0.0
<b>II</b>	<b>Herbicides</b>	<b>3.8</b>	<b>0.6</b>	<b>3.8</b>	<b>0.2</b>	<b>1.8</b>	<b>0.5</b>	<b>1.7</b>	<b>0.4</b>	<b>1.7</b>	<b>0.6</b>	<b>1.7</b>	<b>0.2</b>
1	2, 4-D	2.9	0.2	2.9	0.0	1.3	0.2	1.2	0.1	1.2	0.3	1.2	0.0
2	Butachlor	0.9	0.4	0.9	0.2	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.2
<b>III</b>	<b>Weedicides</b>	<b>12.9</b>	<b>5.5</b>	<b>12.9</b>	<b>3.3</b>	<b>9.7</b>	<b>5.0</b>	<b>10.1</b>	<b>5.9</b>	<b>8.8</b>	<b>5.9</b>	<b>8.8</b>	<b>5.4</b>
1	Isoproturon	8.5	3.8	8.5	2.7	5.4	4.4	5.4	4.7	5.4	4.3	5.4	3.2
2	Glyphoshate	2.0	0.4	2.0	0.1	3.5	0.3	3.9	1.0	2.6	1.5	2.6	2.1
3	Paraquat	2.0	1.0	2.0	*	*	*	*	0.0	*	0.0	*	0.0
4	Diuron	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0
5	Atrazine	0.0	0.2	0.0	0.2	0.5	0.1	0.5	0.0	0.5	0.0	0.5	0.1
6	Fluchloralin	0.3	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1
<b>IV</b>	<b>Rodenticides</b>	<b>3.2</b>	<b>2.5</b>	<b>3.2</b>	<b>2.2</b>	<b>3.2</b>	<b>1.4</b>	<b>3.2</b>	<b>1.7</b>	<b>3.2</b>	<b>1.8</b>	<b>3.2</b>	<b>2.3</b>
1	Zinc Phosphide	0.9	0.3	0.9	0.2	0.9	0.2	0.9	0.3	0.9	0.3	0.9	0.8
2	Aluminium Phosphide	2.3	2.2	2.3	2.0	2.3	1.2	2.3	1.4	2.3	1.5	2.3	1.5
<b>V</b>	<b>Fumigants</b>	<b>0.5</b>	<b>0.1</b>	<b>0.5</b>	<b>0.2</b>	<b>0.4</b>	<b>0.1</b>	<b>0.4</b>	<b>0.1</b>	<b>0.4</b>	<b>0.0</b>	<b>0.4</b>	<b>0.1</b>
1	Methyl Bromide	0.3	0.0	0.3	0.1	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0
2	Dicofol	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.0	0.2	0.1
<b>Total</b>		<b>138.2</b>	<b>81.9</b>	<b>138.9</b>	<b>69.6</b>	<b>134.1</b>	<b>85.1</b>	<b>145.7</b>	<b>93.9</b>	<b>148.7</b>	<b>82.2</b>	<b>145.5</b>	<b>84.7</b>

Source : Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers

\* : Not Available

Cap. Capacity

0" Producton is either zero or negligible

Pro. Production

**TABLE 5.2.5 (a) : STATE-WISE CONSUMPTION OF PESTICIDES***(MTs technical grade)*

Sl. No.	Name of State/ U.T.s	2000-01	2001-02	2002-03	2003-04	2004-05	2005-2006	2006-2007
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	4000	3850	3706	2034	2133	1997	1394
3	Arunachal Pradesh	13	17	15	147	17	2	17
2	Assam	245	237	181	175	170	165	165
4	Bihar	853	890	1010	860	850	875	890
5	Chhatisgarh	NA	NA	NA	332	486	450	550
5.7	Goa	6	5	5	5	5	5	9
6.6	Gujarat	2822	4100	4500	4000	2900	2700	2670
7.5	Haryana	5025	5020	5012	4730	4520	4560	4600
8.4	Himachal Pradesh	302	311	380	360	310	300	292
9.3	Jammu & Kashmir	1	4	98	9	12	1433	829
10	Jharkhand	150	36	40	56	69	70	82
11	Karnataka	2020	2500	2700	1692	2200	1638	1362
12	Kerala	754	1345	902	326	360	571	545
13	Madhya Pradesh	871	714	1026	662	749	787	957
14	Maharashtra	3239	3135	3725	3385	3030	3198	3193
15	Manipur	20	14	19	25	26	28	26
16	Meghalaya	6	6	6	6	8	6	9
17	Mizoram	8	26	15	15	25	25	40
17	Nagaland	8	7	7	7	5	5	5
18	Orissa	1006	1018	1134	682	692	963	778
19	Punjab	7005	7200	7200	6780	6900	5610	5975
20	Rajasthan	3040	4628	3200	2303	1628	1008	3567
21	Sikkim	4	2	3	3	-	-	2
22	Tamil Nadu	1668	1576	3346	1434	2466	2211	2048
23	Tripura	11	16	88	118	17	14	19
24	Uttar Pradesh	7023	6951	6775	6710	6855	6672	7414
25	Uttaranchal	99	105	129	147	132	141	207
26	West Bengal	3250	3180	3000	3900	4000	4250	3830
26	Andaman & Nicobar Islands	3	2	3	6	3	3	NA
27	Chandigarh	2	1	1	1	1	0.78	NA
28	Delhi	55	58	60	56	53	39	NA
29	Dadra & Nagar Haveli	6	4	5	5	5	4	NA
30	Daman and Diu	2	2	1	1	1	1	NA
31	Lakshadweep	2	2	2	2	2	1	NA
32	Pondicherry	65	58	57	46	42	41	40
<b>All-India</b>		<b>43584</b>	<b>47020</b>	<b>48350</b>	<b>41020</b>	<b>40672</b>	<b>39773</b>	<b>41515</b>

Source : Directorare of Plant Protection Quarentine &amp; Storage, Ministry of Agriculture

**TABLE 5.2.5 (b) : STATE-WISE DEMAND OF PESTICIDES***(MTs Technical Grade)*

Sl. No.	Name of State/ U.T.s	2002-03	2003-04	2004-05	2005-06	2006-07
1	2	3	4	5	6	7
1	Andhra Pradesh	3850	3600	2045	2045	1500
3	Arunachal Pradesh	230	215	205	195	190
2	Assam	16	17	17	17	17
4	Bihar	1010	975	930	925	935
5	Chhatisgarh	NA	450	704	535	535
5.7	Goa	5	5	5	5	5
6.6	Gujarat	4500	4200	4550	3400	3000
7.5	Haryana	5012	4732	4700	4500	4650
8.4	Himachal Pradesh	360	470	332	340	297
9.3	Jammu & Kashmir	100	110	101	28*	1154**
10	Jharkhand	225	180	60	55	85
11	Karnataka	2700	2600	2400	2400	2200
12	Kerala	614	1690	346	454	368
13	Madhya Pradesh	1026	938	921	880	939
14	Maharashtra	3525	3500	3300	3200	3188
15	Manipur	15	27	29	32	33
16	Meghalaya	9	7	7	9	100
17	Mizoram	19	20	20	46	61
17	Nagaland	9	7	7	7	7
18	Orissa	1134	1131	1131	1131	1131
19	Punjab	7200	7100	7000	7050	6450
20	Rajasthan	3200	3175	3150	3250	3250
21	Sikkim	3	4	4	NIL	NIL
22	Tamil Nadu	2564	2564	2619	2634	2369
23	Tripura	25	18	18	28	25
24	Uttar Pradesh	6775	6750	6725	6700	6675
25	Uttaranchal	125	131	179	147	150
26	West Bengal	4838	4000	3800	4200	4400
26	Andaman & Nicobar Islands	3	3	9	9	9
27	Chandigarh	1	1	0.75	0.75	0.75
28	Delhi	60	55	50	50	33
29	Dadra & Nagar Haveli	5	6	6	6	6
30	Daman and Diu	1	1	1	1	1
31	Lakshadweep	2	2	2	2	2
32	Pondicherry	59	52	38	42	42
<b>All-India</b>		<b>49220</b>	<b>48736</b>	<b>45412</b>	<b>44374</b>	<b>43718</b>

Source : Directorate of Plant Protection Quarentine &amp; Storage, Ministry of Agriculture

P : Provisional

\* Agriculture sector

\*\* : Agriculture/Horticulture sectors

NIL : No demand due to organic State.

**TABLE 5.3.1 : FREQUENTLY OCCURRING NATURAL DISASTERS IN INDIA**

Sl. No.	Type	Location/ Area	Affected Population (in Million)
1	2	3	4
1	Cyclones	Entire 5700 km long coastline of Southern, Peninsular India covering 9 States viz Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal and Union Territory of Pondicherry besides Islands of Lakshadweep and Andaman and Nicobar	10
2	Floods	8 major river valleys spread over 40 million hectares of area in the entire country	260
3	Drought	About 68% of total sown area and 16% of total area of the country spread in 14 States of Andhra Pradesh, Bihar, Gujarat, Haryana, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal & Himachal Pradesh covering a total of 116 districts and 746 blocks	86
4	Earthquake	56% of the total area of the country susceptible to seismic disturbances	400
5	Landslide	Entire sub Himalayan region and Western Ghats	10
6	Avalanche	Many parts of the Himalaya	1
7	Fires	States of Bihar, West Bengal, Orissa and north eastern States	140

Source : India: State of the Environment, 2001, Ministry of Environment & Forests

India is prone to natural disasters. Due to its locational and geographical features, it is vulnerable to a number of natural hazards like cyclones, droughts, floods, earthquakes, fires, landslides and avalanches.

Natural disasters result in heavy economic losses, apart from the loss of human life and the hardship inflicted on the survivors. On an average, atleast one major disaster hits India every year, causing irreparable damage to life and property.

**TABLE 5.3.2 : MAJOR EARTHQUAKES IN INDIA**

Sl. No.	Date	Lattitude (Degree N)	Longitude (Degree E)	Magnitude	Region	Remarks
1	2	3	4	5	6	7
1	16.06.1819	24.00	70.00	8.0	Kutch	About 2000 people killed
2	12.06.1897	25.00	92.00	8.7	Assam	One of the greatest earthquake of historical time Shillong city was razed to the ground 1542 killed.
3	04.04.1905	32.30	76.25	8.0	Kangra	20000 lives lost
4	15.01.1934	26.60	86.80	8.3	India-Nepal Border	Most severe in Indian history, More than 10000 killed
6	26.06.1941	12.40	92.50	8.1	Andaman Islands	Flooding in port Blair
7	15.08.1950	28.46	96.66	8.5	Assam	532 people killed
8	06.08.1988	25.14	95.12	5.8	Burma-India Border	3 killed 11 injured
9	20.08.1988	26.78	86.61	6.5	Nepal-India Border	1000 people killed, 1000 injured
10	19.10.1991	30.75	78.86	6.6	West UP Hills(Uttarkashi)	Extensive damage in Northern Bihar 768 people killed
11	30.09.1993	18.07	76.00	6.3	Latur, Osmanabad	7601 people killed
12	22.05.1997	23.08	80.06	6.0	Jabalpur	38 People killed
13	29.03.1999	30.41	79.42	6.8	Uttar Pradesh	there 1000 dead
14	26.01.2001	23.40	70.28	7.9	Gujarat	Over 20000 people killed, 150000 injured
15	8.10.2005	34.60	37.00	7.6	Pakistan & Kashmir	Over 87,000 in Pakistan & Kashmir dead
16	13.12.2005			6.8		Demagae houses but no casualty

Source : Ministry of Environment & Forests and web-site of Ministry of Home Affairs

The two thirds of India lies in the Seismic zones of moderate to severe intensity. The Himalayan Range, the Indo-gangetic plains and the Kutch and Kathaiwar region of Western India are geologically the most unstable parts, and are most prone to earthquakes. The Himalayan frontal arc flanked by the chaman fault in the west constitutes one of the most seismically active intra-continental regions in the world. In a span of 53 years, four earthquakes, exceeding magnitude 8 on the Richter scale, occurred in this region. These are the Assam earthquakes of 1897 and 1950, the Kangra earthquake of 1905 and the Bihar-Nepal earthquake of 1934. Besides the Himalayan regions, the Union Territories of Andaman and Nicobar Islands are also quite vulnerable to earthquakes. Peninsular India comprises stable continental crust regions, which are considered stable since they are away from tectonic activity of the boundaries. These regions are considered seismically the least active but the Latur earthquake in Maharashtra on September 30, 1993 of magnitude 6.3 in the Richter scale showed that this region, too, is unstable and earthquake prone.

**Table 5.3.3 List of Districts Covered Under Drought Prone Area Programme (DPAP)  
(as on April 2003)**

Sl.No.	State/District	No. of Blocks	Area of blocks (Sq. K.M.)
<b>1</b>	<b>Andhra Pradesh</b>		
	1 Adilabad	9	11793
	2 Chittoor	8	7761
	3 Cuddapah	7	8225
	4 Khammam	2	1228
	5 Kurnool	13	17366
	6 Mahabubnaaar	16	18178
	7 Modak	5	4323
	8 Nalqonda	9	8178
	9 Prakasam	14	15165
	10 Ranaareddv	7	5535
	11 Srikakulam	4	1466
	Total	94	99218
<b>2</b>	<b>Bihar</b>		
	1 Kaimur ( Bhabhua )	5	2237
	2 Jamul	7	3062
	3 Madhubani	4	772
	4 Nawadah	9	2276
	5 Rohtas	2	639
	6 Sitamarhi	3	547
	Total	30	9533
<b>3</b>	<b>Chattisgarh</b>		
	1 Bastar	6	3857
	2 Bilaspur	3	1709
	3 Dantewada	6	6010
	4 Dura	2	1146
	5 Janjgir	1	440
	6 Kavardha	2	1386
	7 Korba	5	4309
	8 Rainandaaon	4	2944
	Total	29	21801
<b>4</b>	<b>Gujarat</b>		
	1 Ahmedabad	6	4429
	2 Amreli	11	73931
	3 Bharuch	4	3129
	4 Bhavnaaar	6	4896
	5 Dahod	7	3811
	6 Junaqarh	6	3162
	7 Narmada	4	2800
	8 Navsai (Valsad)	1	593
	9 Panchmahals	10	4639
	10 Porbandar	2	1729
	11 Sabarkantha	1	368
	12 The Danas	1	1723
	13 Vadodara	5	3244
	14 Valsad	3	2022
	Total	67	43938

Contd.....

Sl.No.	State/District	No. of Blocks	Area of blocks (Sq. K.M.)
<b>5</b>	<b>Himachal Pradesh</b>		
	1 Bilaspur	3	1120
	2 Solan	2	685
	3 Una	5	1514
	Total	10	3319
<b>6</b>	<b>Jammu &amp;</b>		
	1 Doda	14	11656
	2 Udhampur	8	3049
	Total	22	14705
<b>7</b>	<b>Jharkhand</b>		
	1 Bokaro	2	755
	2 Chatra	4	2493
	3 Deoahar	7	2436
	4 Dhanbad	8	2000
	5 Dumka	10	3693
	6 Garhwa	14	3630
	7 Godda	7	2019
	8 Hazaribaah	10	430
	9 Jamtara	4	0
	10 Kodarma	4	0
	11 Latehar	7	0
	12 Pakur	6	0
	13 Palamau	11	0
	14 Sahebaani	6	0
	Total	100	34843
<b>8</b>	<b>Karnataka</b>		
	1 Banaalore ®	8	5843
	2 Belaaum	7	9450
	3 Bidar	4	4491
	4 Chamaraianaaar	1	1406
	5 Chickmaaalur	6	6416
	6 Chitraduraa	5	6681
	7 Davanaere	1	953
	8 Dharwad	4	3016
	9 Gadaa	4	4210
	10 GulbarQa	9	14603
	11 Hassan	4	4002
	12 Haveri	6	4063
	13 Kolar	9	6370
	14 Mvsore	3	2630
	15 Tumkur	10	10198
	Total	81	84332
<b>9</b>	<b>Madhya Pradesh</b>		
	1 Badwani	6	3184
	2 Betul	10	7080
	3 Bhind	1	406
	4 Chindwada	8	7474

Contd.....

Sl.No.	State/District	No. of Blocks	Area of blocks (Sq. K.M.)
	5 Damoh	3	2204
	6 Dewas	3	3009
	7 Dhar	8	4981
	8 Guna	6	7196
	9 Jabalpur	1	863
	10 Jhabua	12	6791
	11 Khandwa	5	3886
	12 Kharqone	5	3246
	13 Panna	3	2727
	14 Raisen	3	2325
	15 RaiQarh	2	1873
	16 Ratlam	1	681
	17 Rewa	4	2124
	18 Seoni	5	5424
	19 Shahdol	4	5225
	20 Shahiapur	2	1639
	21 Shivpuri	3	2780
	22 Sidhi	8	10350
	23 Umaria	2	3633
	Total	105	89101
<b>10</b>	<b>Maharashtra</b>		
	1 Ahmednagar	10	14109
	2 Akola	7	5363
	3 Washim	6	5177
	4 Amravati	9	6407
	5 Aurangabad	6	8108
	6 Beed	6	9008
	7 Buldhana	9	6877
	8 Chandrapur	3	4206
	9 Dhule	3	5735
	10 Nandurbar	4	4886
	11 Gadchiroli	3	7686
	12 Jalqaon	7	6504
	13 Jalna	2	2826
	14 Latur	4	5676
	15 Naaour	1	829
	16 Nanded	4	4703
	17 Nasik	13	15658
	18 Osmanabad	3	3197
	19 Parbhani	2	3188
	20 Hinqoli	2	3308
	21 Pune	12	33355
	22 Sanqli	7	7164
	23 Satara	4	5035
	24 Sholaour	10	13730
	25 Yeotmal	12	11638
	Total	149	194473



Contd.....

Sl.No.	State/District	No. of Blocks	Area of blocks (Sq. K.M.)
11	<b>Orissa</b>		
	1 Baraarh	6	2648
	2 Bolanair	8	3446
	3 Boudh	2	2516
	4 Dhenkana	2	1167
	5 Kalahandi	10	5741
	6 Nauoada	5	2685
	7 Phulbani ( Kandhamal)	12	7376
	8 Soneour	2	599
	Total	47	26178
12	<b>Rajasthan</b>		
	1 Aimer	3	2660
	2 Banswara	8	5037
	3 Baran	2	3587
	4 Bharatpur	1	501
	5 Dunaarour	5	3793
	6 Jhalawar	3	3536
	7 Karouli	1	1393
	8 Kota	2	1964
	9 Swai	1	1375
	10 Tonk	3	3176
11 Udaipur	3	4947	
	Total	32	31969
13	<b>Tamil Nadu</b>		
	1 Coimbatore	5	1530
	2 Dharmapuri	14	5751
	3 Dindigul	3	1846
	4 Karur	2	976
	5 Perambalur	2	2122
	6 Pudukottai	4	1334
	7 Ramanathapuram	7	2986
	8 Salem	5	1087
	9 Namakkal	3	592
	10 Sivagangai	7	2616
	11 Thiruvannamalai	1	255
	12 Thothukudi	8	3662
	13 Tiruchirappalli	1	475
	14 Tirunelveli	1	326
	15 Vellore	6	1349
16 Virudhunagar	7	2507	
	Total	80	29416
14	<b>Uttar Pradesh</b>		
	1 Allahabad	1	587
	2 Bhaerachal		
	3 Sravasthi	14	5405
	4 (Gonda)	4	2090

Sl.No.	State/District	No. of Blocks	Area of blocks (Sq. K.M.)
	5 Banda	6	3546
	6 Chitrakoot	5	3647
	7 Hamirpur	3	2216
	8 Jalaun	3	2140
	9 Jhansi	5	3281
	10 Lakhimpur Kheri	2	392
	11 Lalitpur	2	1793
	12 Mahoba	2	1835
	13 Mirzapur	2	1385
	14 Sitapur	3	1108
	15 Sonebhadra	8	6273
	Total	60	35698
15	Uttaranchal		
	1 Almora & }		
	2 Baaeswar }	8	3114
	3 Chamoli	4	5850
	4 Garhwal ( Pauri)	10	4070
	5 Pithoraaarh & }		
	6 Champavath }	5	1709
	7 Tehri Garhwal	3	1053
	Total	30	15796
16	West		
	1 Bankura	7	2185
	2 Birbhum	2	397
	3 Midnapur	7	2707
	4 Purulia	20	6305
	Total	36	11594
	DPAP Total: 182 Districts	972	745914

Source : Central Water Commission

**TABLE 5.3.4 (a) : FLOOD AFFECTED AREA & FLOOD DAMAGES IN INDIA**  
(abstract for the period 1953 to 2005\*)

Sl. No.	Item	Unit	Average Annual Flood Damage	Maximum Damage (Year)	Damage During 2005 (Tentative)
1	2	3	4	5	6
1	Area Affected	Million ha.	7.55	17.50 (1978)	3.38
2	Population Affected	Million	32.86	70.45 (1978)	29.68
3	Human Lives Lost	Nos.	1589	11316 (1977)	1503
4	Cattle Lost	Nos.	94839	618248 (1979)	113226.00
5	Cropped Area Affected	Million ha.	3.54	10.15 (1988)	2.24
6	Value of Damage to Crops	Rs. Crore	710.63	4246.62 (2000)	958.27
7	Houses Damaged	Million	1.22	3.51 (1978)	0.35
8	Value of Damage to Houses	Rs. Crore	270.59	1307.89 (1995)	316.95
9	Value of Damage to Public Utilities	Rs. Crore	820.75	5604.46 (2001)	1546.94
10	Value of Damage to Houses, Crops and Public Utilities	Rs. Crore	1805.18	8864.54 (2000)	2822.16

Source : Central Water Commission.(FMP Directorate)

Note \* : Figures from 2003 & 2005 are tentative

**Table 5.3.4 (b) : STATE -WISE DETAILS OF DAMAGE DUE TO HEAVY RAINS / FLOODS  
CYCLONIC STORMS AND LANDSLIDES DURING 2005 IN INDIA**

Sl. No.	State/UT	Human Lives	No. of House
1	Assam	27	735
2	Andhra Pradesh	87	120404
3	Arunachal Pradesh	10	6572
4	Bihar	51	4266
5	Chhattisgarh	17	376
6	Goa	16	226
7	Chandigarh	213	161628
8	Gujarat	11	3647
9	Haryana	15	2872
10	Himachal Pradesh	3	357
11	Jammu & Kashmir	160	108665
12	Karnataka	131	20527
13	Kerala	86	223022
14	Madhya Pradesh	1108	449145
15	Meghalaya	1	67
16	Mizoram	2	27
17	Nagaland	15	214
18	Orissa	12	5871
19	Punjab	25	268
20	Rajasthan	79	12690
21	Sikkim	10	390
22	Tamil Nadu	203	374852
23	Uttar Pradesh	203	72729
24	Uttaranchal	113	1712
25	West Bengal	7	461
26	Pondicherry	Nil	47000

Source : Environment in the Indian Parliament: An Analysis, 2005, Supported by Ministry of Environment and Forests.

**TABLE 5.3.5 (A) : STATEWISE EXTENT OF DAMAGE (Commulative) DUE TO HEAVY RAINS, FLOOD, CYCLONE DURING SOUTH-WEST MONSOON --2007 ....(Contd..)**

Sl. No.	States/UTs	Population affected (in lakh)	No. of Human lives lost	No of Distt. Affected	No of Villages affected	No of Cattle/liv e-stock lost	Cropt area afected (in Hectre)
1	2	3	4	5	6	7	8
1	Andhara presdh	11.31	113	11	48	47347	174000
2	Arunachal Pradesh	NR	NR	11	NR	NR	NR
3	Assam	108.67	133	26	10245	NR	670957
4	Bihar	245.58	967	22	11850	988	1662000
5	Chattisgarh	1.96	12	8	164	53	2560
6	Goa	0.003	3	Nil	Nil	Nil	Neg.
7	Gujarat	14.87	486	29	937	9707	468342
8	Haryana	Nil	Nil	nil	Nil	Nil	Nil
9	Himachal Pradesh	1.23	98	12	984	3087	112982
10	Jharkhand	Nil	2	1	Nr	2	962
11	Jammu & Kashmir	Nil	Nil	Nil	Nil	Nil	Nil
12	Karnataka	19.76	208	25	1616	8046	237480
13	Kerala	17.95	263	14	1504	2812	36823.49
14	Madhya Pradesh	1.87	74	15	710	294	4239
15	Manipur	-	-	-	-	-	-
16	Mirzoram	Nil	2	Nil	Nil	Nil	Nil
17	Nagaland	Nil	Nil	Nil	Nil	Nil	Nil
18	Maharashtra	1.35	155	NR	5297	1477	NR
19	Meghalaya	Nil	Nil	Nil	Nil	Nil	90
20	Orissa	35.51	54	12	3580	19501	184147
21	Punjab	0.015	7	6	246	18	28134
22	Rajasthan	2.94	63	21	1296	5114	Neg.
23	Sikkim	-	-	-	-	-	-
24	Tripura	Nil	8	Nil	Nil	Nil	Nil
25	Tamil Nadu	Nil	52	Nil	Nil	159	Nil
26	Uttar Pradesh	12.43	216	22	2546	157	162566
27	Uttaranchal	NR	83	NR	NR	275	NR
28	West Bengal	117.2	338	4	11476	4154	2455006
29	Andaman & Nicobar	Nil	Nil	Nil	Nil	Nil	Nil
30	Chandigarh	-	-	-	-	-	-
31	Daman & Diu	Nil	Nil	Nil	Nil	Nil	Nil
32	D & NH	Nil	Nil	Nil	Nil	Nil	Nil
33	Delhi	-	-	-	-	-	-
34	Lakshadweep	Nil	Nil	Nil	Nil	Nil	Nil
35	Pondicherry	0.003	2	2	NR	150	215000
<b>TOTAL</b>		<b>592.651</b>	<b>3339</b>	<b>241</b>	<b>52494</b>	<b>103341</b>	<b>6415288.49</b>

Source : Disaster Management Division, Ministry of Home Affairs

Note : figure are provisional.

**TABLE 5.3.5 (A) : STATEWISE EXTENT OF DAMAGE (Commulative) DUE TO HEAVY RAINS, FLOOD,  
CYCLONE DURING SOUTH-WEST MONSOON --2007 (Concl.)**

Sl. No.	States/UTs	No of Houses		Total value of damage (in Rs. Lakhs)				Total (in Lakhs)
		Fully	Pertially	Crop damage	Houses (fully)	House (Pertially)	Public Property	
1	2	9	10	11	12	13	14	15
1	Andhara presdh	15850	216741	7.6	702.56		619.81	1329.97
2	Arunachal Pradesh	16	NR		6			6
3	Assam	15846	NR	NR	NR	NR	NR	NR
4	Bihar	327316	363044	133204	99098.36		158072.5	390374.79
5	Chattisgarh	1325	11132	17.26	276.78	542.42	1550.28	2394.3
6	Goa	5	1095	3.68	2.91	182.86	22.3	211.75
7	Gujarat	3777	37979	10514.68	275.31	537.63	4000	15327.62
8	Haryana	Nil	Nil	Nil	Nil	Nil	Nil	Nil
9	Himachal Pradesh	1022	2003	5101.38	715.28	507.63	112755.7	119079.98
10	Jharkhand	295	691	57.72	29.5	17.73		104.95
11	Jammu & Kashmir	Nil	Nil	Nil	Nil	Nil	Nil	Nil
12	Karnataka	62795	115593	60017.98	11052	2144.01	171630	244944
13	Kerala	2084	53679	18378	760.39	2531.6	48809	70478.99
14	Madhya Pradesh	1459	16390	175.45	191.38	297.89	228.98	893.7
15	Manipur							0
16	Mirzoram	Nil	Nil	Nil	Nil	Nil	Nil	Nil
17	Nagaland	Nil	Nil	Nil	Nil	Nil	Nil	Nil
18	Maharashtra	5778.00	41267	NR	NR	NR	NR	NR
19	Meghalaya	Nil	Nil	Nil	Nil	Nil	Nil	Nil
20	Orissa	9353.00	18457		709.61		24784.1	25493.71
21	Punjab	75	452	127.37	9.13	10.86		147.36
22	Rajasthan	898	9160	259	132.81	320.98	24550.26	25263.05
23	Sikkim							0
24	Tripura	3	Nil	Nil	Nil	Nil	Nil	Nil
25	Tamil Nadu	108	618		108	309		417
26	Uttar Pradesh	300	1136	121954.9	50925			172879.86
27	Uttaranchal	125	854	NR	NR	NR	NR	NR
28	West Bengal	208805	381967.00	7837.55	7947.07		187.56	15972.18
29	Andaman & Nicobar	Nil	Nil	Nil	Nil	Nil	Nil	Nil
30	Chandigarh							0
31	Daman & Diu	Nil	Nil	Nil	Nil	Nil	Nil	Nil
32	D & NH	Nil	Nil	Nil	Nil	Nil	Nil	Nil
33	Delhi							0
34	Lakshadweep	Nil	Nil	Nil	Nil	Nil	Nil	Nil
35	Pondicherry	27	132	0.959	0.03	23.046	2.68	26.715
		<b>657262</b>	<b>1272390</b>	<b>357657.5</b>	<b>172942.1</b>	<b>7425.656</b>	<b>547213.1</b>	<b>1085346.9</b>

**TABLE 5.3.5 (B) : STATEWISE EXTENT RESCUE AND RELIEF PROVIDED FOR DAMAGE DUE TO SOUTH WEST MONSOON-2007**

Sl. No.	States/UTs	No of persons Evacuated	No of Relief camps opened	No of persons accommodated in the relief camps	Relief Provided(item and amount)	No of medical teams deployed	No of cattle camps opened
1	2	4	5	6	7	8	9
1	Andhara presdh	172369	101	172369	NR	NR	NR
2	Arunachal Pradesh	NR	NR	NR	NR	NR	NR
3	Assam	40000	820 & 217 *	368555	Rice- 214272.5 qtl, Dal- 32445.9 qtl, Salt- 9868.21 qtl, Chaira- 1327.6 qtl, Gur- 601 qtl, Kerosene- 13.30 kl, Mustard oil- 71.66 kl	517	Nil
4	Bihar	1006801	1673	1005637	Wheat- 1382973.19 Q, Rice- 1397729.3 Q, Chura- 9562.67 Q, Gur 1409.5 Q, Sattu- 46.65 Q, Candles- 228293, Matchbox- 178890, Salt- 309.99Q, Polithine sheet-359539 & 83380 food packets air dropped.	610	1013
5	Chattisgarh	12134	76	13198	375.84	20	NIL
6	Goa	279	1	NR	NR	NR	NR
7	Gujarat	103894	889	103894	Nil	1022	Nil
8	Haryana	Nil	Nil	Nil	Nil	Nil	Nil
9	Himachal Pradesh	Nil	8	8	2.48lakh	2	Nil
10	Jharkhand	Nil	Nil	Nil	Nil	4	Nil
11	Jammu & Kashmir	Nil	Nil	Nil	Nil	Nil	Nil
12	Karnataka	56691	302	90034	4730.98	179	Nil
13	Kerala	1398771	7475	1398771	Food & medicine	Nil	Nil
14	Madhya Pradesh	NR	NR	NR	515.13 lakh	NR	NR
15	Manipur						
16	Mirzoram	Nil	Nil	Nil	Nil	Nil	NIL
17	Nagaland	Nil	Nil	Nil	Nil	Nil	NIL
18	Maharashtra	30645	NR	NR	NR	NR	NR
19	Meghalaya	Nil	76	13198	375.84	Nil	Nil
20	Orissa	70290	977	158743	Chuda- 3235 Q, Rice - 22720 Q, Guda-335 Q, Food items	773	246
21	Punjab	Nil	Nil	Nil	NR	Nil	NIL
22	Rajasthan	2164	30	1711	NR	125	NR
23	Sikkim						
24	Tripura	Nil	55	2959	Nil	Nil	NIL
25	Tamil Nadu	Nil	Nil	Nil	Nil	Nil	NIL
26	Uttar Pradesh	68000	185	67000	Rice-25000 ton, Wheat- 1240 ton, Salt-1670 ton, Dal- 500 ton, Gud-200 ton, Puri packet-245000, Pulse-640 ton, Kerosane oil- 386000 ltr, Candle - 171000, Match box- 332000, Polithene-8 3000 mtr.	Nil	NIL
27	Uttaranchal	NR	NR	NR	NR	NR	NR
28	West Bengal	35739	2273	341528	Rice-11586 MT,Wheat- 300MT,RC-416.99 lakh, Rs.GR.3.20 lakh cash	793	246
29	Andaman & Nicobar	Nil	Nil	Nil	Nil	NIL	NIL
30	Chandigarh						
31	Daman & Diu	Nil	Nil	Nil	Nil	NIL	NIL
32	D & NH	Nil	Nil	Nil	Nil	Nil	Nil
33	Delhi						
34	Lakshadweep	Nil	Nil	Nil	Nil	Nil	Nil
35	Pondicherry	455	2	255	Nil	Nil	Nil

Source : Disaster Management Division, Ministry of Home Affairs

\* : Relief centres

NR : Not recorded

NATURAL DISASTERS

**TABLE 5.3.6 : DAMAGE DUE TO TSUNAMI/TIDE WAVE IN THE BAY OF BENGAL-2004**

Name of States/UT	Districts/Islands	Population (Total for A&N/Affected for others)	Human lives lost	Total Persons missing including fisher men	Persons moved to safer places	No. of Relief Camps/ persons in the camps
1	2	3	4	5	6	7
<b>A &amp; N Islands</b>	Bambooka	55	0	17	0	Evacuated
	Car Nicobar	20292	768	344	7791	85/15550
	Chowara	1385	41	15	13	Evacuated
	Great Nicobar/ Campbell Bay	7566	336	220	1687	14/4328
	Kondul	150	38	-	-	Evacuated
	Kamorta	3412	51	387	700	4/1476
	Katchal	5312	345	4310	277	3/3228
	Little Andaman	17528	52	15	4286	7/6569
	Little Nicobar	353	43	-	-	Evacuated
	Middle Andaman	54385	3	-	-	2/934
	Nancowry	927	1	3	-	Evacuated
	Pilomillow	145	163	-	-	Evacuated
	Trinket	432	3	234	-	9/3296
	Terassa	2026	50	9	-	45/7992
	South Andaman includes Port Blair	181949	5	-	3612	-
	Strait Island	42	0.0	0	29	-
<b>Total</b>	<b>295959</b>	<b>1899</b>	<b>5554*</b>	<b>18395</b>	<b>169/43373</b>	
<b>Andhra Pradesh</b>	Krishna	13061	27	-	-	-
	Guntur	30700	12	-	-	-
	Nellore	16578	20	-	-	-
	Parkasham	92547	35	-	-	-
	West Godavari	2395	8	-	-	-
	East Godavari	7836	3	-	-	-
	Visakhapatnam	33203	0.0	-	-	-
	<b>Total</b>	<b>196320</b>	<b>105</b>	<b>11</b>	<b>34264</b>	<b>People gone back. All 65 Relief Camps closed</b>
<b>Kerala</b>	Kollam	600000	131	-	-	-
	Allappuzha	40000	35	-	-	-
	Ernakulam	300000	5	-	-	-
	<b>Total</b>	<b>1300000</b>	<b>171</b>	<b>-</b>	<b>24978</b>	<b>29/24978</b>

Source: Website of Ministry of Home Affairs

NATURAL DISASTERS

**TABLE 5.3.6 :DAMAGE DUE TO TSUNAMI/TIDE WAVE IN THE BAY OF BENGAL-2004**

Name of States/UT	Districts/Islands	Population (Total for A&N/Affected for others)	Human lives lost	Total Persons missing including fisher men	Persons moved to safer places	No. of Relief Camps/ persons in the camps	
1	2	3	4	5	6	7	
<b>Tamil Nadu</b>	Chennai	65322	206	-	30000	0	
	Cuddalore	99704	615	-	61054	2/900	
	Kancheepuram	100000	128	-	60000	0	
	Kanyakumari	187650	824	-	46280	15/12423	
	Nagapattinam	196184	6060	-	196184	33/28864	
	Pudukottai	66350	15	-	4857	0	
	Ramanathapuram	6815	6	-	8350	0	
	Tirunelveli	27948	4	-	11170	0	
	Thoothukudi	13072	3	-	13072	0	
	Thiruvallur	25600	29	-	15600	0	
	Thanjavur	29278	26	-	4600	0	
	Tiruvarur	NA	20	-	11295	0	
	Villupuram	78240	47	-	37500	8/020	
	<b>Total</b>		<b>896163</b>	<b>7983</b>	-	<b>499962</b>	<b>58/44207</b>
	<b>Pondicherry</b>	Karaikal	17432	484	66	15000	0
Pondicherry		26000	107	9	55000	0	
	<b>Total</b>	<b>43432</b>	<b>591</b>	<b>75</b>	<b>70000</b>	<b>People gone back. All 48 Relief camps closed</b>	
	<b>Grand Total</b>	<b>27,31,874</b>	<b>10749</b>	<b>5640</b>	<b>6,47,599</b>	<b>256/1,12,558</b>	

Source: Website of Ministry of Home Affairs

\* Information is based on the Survey being undertaken of inhabited Islands.



**TABLE 5.3.7 : DETAILS OF ASSISTANCE PROVIDED TO DROUGHTS FOR 2004-05**  
(Rs. In crores)

State	No of District declared	Demand by the State	CRF* Released	Assistance released	Foodgrains Allocation (in Lakh Mts)
Andhra Pradesh	23	1199.68	180.56	40.01	2.20
Bihar	20	2312.48	61.05	162.15	2.00
Chhattisgarh	15	604.96	25.03	52.74	0.90
Jharkhand	22	928.12	25.84	-	0.67
Kernataka	21	1147.71	67.98	49.14	1.14
Madhya Pradesh	20	724.88	57.10	1.70	1.00
Maharashtra		1117.99			
Rajasthan	25	2378.64	188.71	216.79	6.99
		939.37			4.00
Tamil Nadu	#	1910.58	93.57	117.27	1.50
Uttar Pradesh	61	7226.10	133.36	192.10	-
Punjab	#	4538.38	111.87		

Source : Website of Ministry of Agriculture

# Not Available

\* : Calamity Relief Fund

**TABLE 5.3.8 : ASSISTANCE PROVIDED TO STATES FOR DROUGHTS OF 2002-03,2003-04 & 2004-05**

(Amount Rs. In crores)/(Foodgrains in Lakh MTs)

State	Assistance provided for Drought of 2002-03		Assistance provided for Drought of 2003-04		Assistance provided for Drought of 2004-05	
	NCCF	Foodgrains	NCCF	Foodgrains	NCCF@	Foodgrains
Andhra Pradesh	123.51	17.20	50.58	7.82	163.60	2.20
Bihar	-	-	-	-	162.15	2.00
Chhattisgarh	127.51	4.74	-	-	93.44	0.90
Gujarat	-	3.06	-	-	-	-
Haryana	-	0.25	-	-	-	-
Himachal Pradesh	14.35	0.10	-	-	-	-
Jharkhand	-	0.40	-	-	139.82	0.67
Karnataka	207.65	7.20	298.16	7.29	83.67	1.14
Kerala	-	0.52	-	1.03	-	-
Madhya Pradesh	171.66	7.80	-	-	36.30	1.00
Maharashtra	20.00	2.32	250.69	7.00	174.66	-
Orissa	5.29	4.22	-	-	-	-
Rajasthan	889.61	32.56	-	0.19	332.27	699.00
					156.71	4.00
Tamil Nadu	332.09	5.00	173.35	3.04	156.84	1.50
Uttranchal	-	0.50	-	-	-	-
Urrar Pradesh	310.06	2.00	-	-	360.94	-

Source : Website of Ministry of Agriculture

@ : Subject to adjustment of available balances in the State CRF.

CRF : Calamity Relief Fund

NCCF : National Calamity Contingency Fund

TABLE 5.3.9: INDIA'S MAJOR NATURAL DISASTERS SINCE 1980

Sl. No.	Year	Type	Affected Population Location/Area	Life	Loss to Crops and Property
1	1980	Floods	Uttar Pradesh	1525	Rs. 2.0 Billion
2	1981	Floods	Uttar Pradesh	362	1.5 Million hectares of cropped area affected
3	1982	Floods	Orissa	1000	3 Million hectares of agricultural land affected. Loss estimated to run into thousands of millions of Rupees
4	1982	Cyclone	Saurashtra	514	Livestock death toll nearly 0.15 million. Loss to crops estimated at about Rs. 1.27 Billion
5	1983	Cyclone	Andhra Pradesh	134	Livestock death toll-42800. Damage to crops estimated at Rs. 0.34 Billion
6	1984	Cyclone	Andhra Pradesh and Tamil Nadu	658	Livestock death toll-90650. Damage to crops estimated at Rs. 2.32 Billion
7	1985	Floods	Haryana, Punjab and Uttar Pradesh	Heavy Toll	Large area of standing Kharif crop affected heavily
8	1986	Floods	Andhra Pradesh, Bihar and Uttar Pradesh	Heavy Toll	Large area of standing Kharif crop affected heavily
9	1987	Floods	Assam, Bihar and West Bengal	Over 1400	--
10	1988	Cyclone	West Bengal	532	Livestock death toll-57604
11	1989	Floods	Andhra Pradesh, Assam, Gujarat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Maharashtra, Orissa, Uttar Pradesh and West Bengal	Over 1400	--
12	1990	* Cyclone	Andhra Pradesh and Tamil Nadu	928	Rs. 22.470 Billion
13	1991	* Earthquake	Uttarkashi, Uttar Pradesh	768	Rs. 0.890 Billion
14	1992	Drought	Maharashtra		Rs. 28.23 Billion
15	1993	* Floods	Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, J & K, Mizoram, Punjab, Rajasthan, Tripura and Uttar Pradesh	1643	Rs. 21.060 Billion
16	1994	Cyclone	Andhra Pradesh and Tamil Nadu	226	Loss to property estimated at Rs. 6.12 Billion in Tamil Nadu and 444194 Hectares of land in Andhra Pradesh
17	1995	Floods	Large parts of the country	1360	Property worth Rs. 17.7 Billion and crop in 2.35 Million Hectares damaged
18	1996	Floods	Large parts of the country	1700	Property worth Rs. 22.0 Billion and crop in 20.0 Million Hectares damaged
19	1996	Cyclone	Andhra Pradesh	1058	0.3 Million houses fully and a similar number partially damaged. 0.1 Million Hectares of crop damaged. Loss to property worth Rs. 61.26 Billion.
20	1997	* Earthquake	Jabalpur	39	--
21	1998	* Earthquake	Chamoli	100	--
22	1999	** Cyclone	Orissa	9887	1.8 Million Hectares of crop area and 1.6 Houses damaged
23	2001	Earthquake	Gujarat		Over 20,000 people killed, 1,50,000 injured and 1,59,00,000 affected, 12.54 lakhs house damaged
24	2004	Tsunami/Tide waves	A & N Island, Andhra Pradesh, Tamil Nadu, Pondicherry		over 10,749 persons were killed. 5640 person were reported missing. About 6.5 Lakhs person moved to safer place
25	2005	Earthquake	Pakistan & Kashmir		over 87,000 people in Pakistan & Kashmir dead.

Source : India: State of Environment Report 2001 &amp; Website of Ministry of Home Affairs

\* : State of the Environment: India 1995, Ministry of Environment and Forests, Government of India

\*\* : Ministry of Agriculture

**TABLE 5.4.1 : NUMBER OF REPORTING MINES IN INDIA**  
**(Excluding atomic and minerals, Petroleum( crude) Natural gas (utilised) & Minor Minerals)**

Sl. No.	State	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
1	2	3	4	5	6	7	8	9	10
1	Andhra Pradesh	406	385	394	400	413	405	419	415
2	Arunachal Pradesh	--	--	--	--	--	--	--	--
3	Assam	9	10	10	10	10	9	8	9
4	Bihar	20	13	10	9	6	8	10	9
5	Chhattisgarh	86	66	113	123	125	142	144	141
6	Goa	76	71	74	75	80	79	76	69
7	Gujarat	443	454	432	424	417	421	433	403
9	Haryana	29	30	32	28	17	2	1	1
8	Himachal Pradesh	38	33	33	32	32	30	27	28
10	Jammu & Kashmir	6	7	7	9	9	8	8	8
11	Jharkhand	311	343	336	299	292	299	304	301
12	Karnataka	202	184	171	192	216	227	240	230
13	Kerala	54	45	42	37	34	35	39	35
14	Madhya Pradesh	425	436	374	371	325	318	336	329
15	Maharashtra	142	150	135	137	137	152	162	148
17	Meghalaya	2	2	2	2	4	5	5	6
18	Orissa	239	229	236	232	243	243	244	224
16	Manipur	--	--	--	--	--	--	--	--
19	Rajasthan	501	465	456	465	441	396	384	271
20	Sikkim	2	2	2	2	2	2	2	1
21	Tamilnadu	130	134	148	172	171	183	195	175
22	Uttar Pradesh	21	21	28	38	29	27	27	22
23	Uttaranchal	16	8	15	20	28	27	30	30
24	West Bengal	125	121	123	116	115	114	120	115
<b>Total</b>		<b>3283</b>	<b>3209</b>	<b>3173</b>	<b>3193</b>	<b>3146</b>	<b>3132</b>	<b>3214</b>	<b>2970</b>

Source : Indian Bureau of Mines

**TABLE 5.4.2 : PRODUCTION <sup>(1)</sup> OF MINERALS  
(Excluding atomic and minor minerals)**

			(value in Rs.'000)							
Sl. No.	Minerals	Unit	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
1	2	3	4	5	6	7	8	9	10	11
	<b>Fuel Minerals</b>									
1	Coal	000 t	296508	304103	313696	327787	341272	361246	382615	407222
2	Lignite	000 t	23419	22124	22947	24813	26018	27958	30337	30049
3	Natural Gas (Ut.)	M.C.M.	25705	26885	27860	28038	29964	30908	30820	31223
4	Petroleum (Crude)	000 t	32722	31949	32426	32032	33044	33373	34015	32204
	<b>Metallic Minerals</b>									
5	Bauxite	Tonne	6609525	7053582	7992782	8688752	9867455	10924786	11964011	12335198
6	Chromite	Tonne	1418119	1737985	1971806	1548900	3068631	2904809	3621394	3422880
7	Copper Ore	Tonne	4229996	3084849	3498270	3417967	3071293	2902972	2929074	2642706
8	Copper Conc.	Tonne	198531	165024	163564	164469	152099	143135	137003	123646
9	Gold Ore	Tonne	644059	569824	471042	496270	612346	622468	492748	506951
10	Gold	Kg.	2683	2586	2615	2810	3153	3261	3526	2883
	Gold (by product)							196	-	167
11	Iron Ore	000 t	72230	74946	80762	86226	99072	122838	145942	154436
12	Lead & Zinc Ore	Tonne	2650854	2755390	2505265	3676751	3074864	3644263	3928500	4795124
13	Lead Conc.	Tonne	62842	62899	54487	52386	59107	73069	81675	97572
14	Zinc Conc.	Tonne	349934	360138	365164	398837	486162	590276	666424	893287
15	Manganese Ore	Tonne	1537693	1585726	1595458	1587305	1678372	1776153	2386396	2003474
16	Silver	Kg.	55409	53641	46150	57675	59502	37870	10955	27950
17	Tin Conc.	Kg.	39391	22812	12979	13887	10630	15576	23503	98736
	<b>Non-Metallic Minerals</b>									
18	Agate	Tonne	154	120	120	53	96	55	25	5
19	Apatite	Tonne	14031	11642	11117	12138	11426	10448	8596	9053
20	Phosphorite	Tonne	1262238	1191640	1252918	1239414	1201408	1435959	1722983	1372951
21	Asbestos	Tonne	20111	18550	15397	11148	14139	10107	6392	2366
22	Ball Clay	Tonne	448949	423989	461836	634121	663296	837847	637022	351049
23	Barytes	Tonne	660854	360538	845001	915976	679628	723075	1159031	1189939
24	Calcite	Tonne	61908	60134	62044	68243	115612	122329	66984	73332
25	Chalk	Tonne	118623	142065	129173	115061	132775	117185	129571	146351
26	Clay (Others)	Tonne	95671	217446	216354	199139	164790	790191	1240963	1102963
27	Corundum	Kg.	807	20	9	301	7601	117030	18560	58000
28	Diamond	Carat	34580	40956	57407	81436	84407	71260	78316	44170
29	Diaspore	Tonne	9334	9406	8818	8849	11157	13775	21008	23719
30	Dolomite	Tonne	2921748	2841607	3077573	3251119	3630115	4051409	4339306	4428119
31	Dunite	Tonne	230203	229667	168121	54158	27731	31040	20756	37314
	Emerald									
32	Felspar	Tonne	114948	194158	179046	228735	239093	332220	379055	322929
33	Fireclay	Tonne	469721	407296	440982	495752	513980	657080	662633	485755
34	Felsite	Tonne	657	656	928	1121	1163	947	683	710
35	Fluorite (Graded)	Tonne	4025	44784	44302	13866	8825	6555	6291	1774
36	Fluorite (Conc.)	Tonne	48	220	3253	6900	4198	5838	7717	3764
37	Garnet (Abrasive)	Tonne	133107	193406	232259	280784	432093	490893	642329	679700
38	Garnet (Gem)	Kg.	950	800	502	676	908	544	90	-
39	Graphite (r.o.m.)	Tonne	135668	108826	124790	105814	106060	87207	108150	120322
40	Gypsum	Tonne	2267240	3247009	2644415	2858659	2653485	2773813	3684758	3137095
41	Jasper	Tonne	5570	5709	5041	4189	4547	2533	1265	580
42	Kaolin	Tonne	740542	815595	871331	814759	822751	896884	933654	1096564
43	Kyanite	Tonne	6134	6191	4773	4225	5327	9057	8208	7341
44	Sillimanite	Tonne	12123	14938	15498	14720	13290	19729	30711	32278
45	Laterite	Tonne	594665	795017	605598	615271	638220	828179	949973	931297
46	Limestone	000 t	110968	128787	127202	130912	155742	153404	165753	170378
47	Lime Kankar	Tonne	252125	206767	228926	171635	310435	358468	470526	343834
48	Limeshell	Tonne	91761	98033	82008	128497	119931	135782	138071	109654
49	Magnesite	Tonne	349852	325764	317765	287985	278267	323977	383953	351495
50	Mica (Crude)	Tonne	1484	1807	1154	2026	1232	1076	1276	1259
51	Mica (Waste & Scrap) <sup>(2)</sup>	Tonne	1067	1579	2963	4069	2342	2928	2497	3384
52	Ochre	Tonne	375371	424019	390019	612663	778540	959673	919018	920600
53	Perlite	Tonne	207	383	274	176	283	279	335	122
54	Pyrites	Tonne	88730	9539	-	-	-	-	-	-
55	Pyrophyllite	Tonne	91924	107458	148346	150345	147233	176254	271225	181328
56	Pyroxenite	Tonne	-	-	-	169995	256381	240391	265847	338476
57	Quartz	Tonne	253859	251157	302226	248372	271267	287188	319004	250719
58	Quartzite	Tonne	45109	60506	55311	26793	39313	66654	97036	107975
59	Silica Sand	Tonne	1718325	1558419	2357601	1722061	2017282	2537669	1962029	2344793
60	Sand (Others)	Tonne	2589600	2152751	1817439	1982427	2026477	1191854	1496160	1182795
61	Salt (Rock)	Tonne	2607	2813	2530	2679	1620	1813	3073	1871
62	Shale	Tonne	816492	779949	828422	914879	1276207	1897969	2218004	2727776
63	Slate	Tonne	9711	10559	10046	4859	6841	11381	5825	1906
64	Steatite	Tonne	481554	557112	553241	598366	688135	726398	684440	627216
65	Selenite	Tonne	-	-	-	20705	18759	19740	5169	-
66	Sulphur <sup>(3)</sup>	Tonne	14889	24883	62047	85818	102977	108856	113904	152090
67	Vermiculite	Tonne	4274	3123	5003	5097	5499	4493	3377	4774
68	Wollastonite	Tonne	94700	117094	121891	136420	178298	150814	170292	128582

Source : Indian Bureau of Mines/website www.coal.nic.in

(1) : Excluding the minerals declared as prescribed substances under the Atomic Energy Act 1962.

(2) : Includes the mine waste and waste obtained while dressing of crude mica at the mine site

(3) : Obtained as by-product from fertilizer plants and oil refineries.

**TABLE 5.4.3 : INFORMATION ON REHABILITATION OF MINING LAND/RECLAMATION OF ABANDONED MINES**

Sl. No.	Item	For the Year	Cumulative
		2005-06	2005-06
1	2	3	4
1	No. of abandoned mines	0	102
2	No. of abandoned mines reclaimed	0	53
3	Total area reclaimed in abandoned mines (hect.)	0	660
4	No. of mines (working) where reclamation / rehabilitation is being carried out	111	1062
5	Area of such reclaimed / rehabilitation in working mines(in hect.)	836	10666

Source : Indian Bureau of Mines

**TABLE 5.4.4 : STATUS OF AFFORESTATION IN METALLIFEROUS MINES FROM  
1989-90 to 2005-06**

Sl. No.	Minerals	Mines Covered	Area Covered (Hects.)	Trees Planted ('000 Nos.)	Trees Survived ('000 Nos.)	Survival (%)	Survival ('000 trees) per Hect.
1	2	3	4	5	6	7	8
1	Iron Ore	130	10193	36598	24207	66	2.4
2	Limestone	397	12143	18940	13194	70	1.1
3	Bauxite	83	2155	6618	5005	76	2.3
4	Manganese Ore	57	2309	6003	3882	65	1.7
5	Chromite	14	746	2540	1705	67	2.3
6	Copper Ore	7	356	1334	845	63	2.4
7	Gold	5	434	922	645	70	1.5
8	Lead & Zinc	9	1437	766	668	87	0.5
9	Iron and Manganese	31	219	667	497	74	2.3
10	Dolomite	70	321	516	335	65	1.0
11	Magnesite	18	536	492	331	67	0.6
12	Pyrites	1	7	21	15	71	2.1
13	Others Minerals	404	2965	3516	2255	64	0.8
<b>Total</b>		<b>1226</b>	<b>33821</b>	<b>78933</b>	<b>53584</b>	<b>68</b>	<b>1.6</b>

Source : Indian Bureau of Mines

**Table 5.4.5 : MINING MACHINERY IN METALLIFEROUS OPEN CAST MECHANISED MINES DURING 2005-06**

Sl. No.	Machinery	2002-03		2003-04		2005-06	
		In Use	In Reserve	In Use	In Reserve	In Use	In Reserve
1	2	3	4	5	6	7	8
1	Air Compressor	726	104	672	98	656	92
2	Back Hoe	377	17	442	22	684	31
3	Bulldozer	4653	24	410	22	457	213
4	Crane	132	12	142	14	141	6
5	Crusher	272	12	292	13	338	18
6	Dipper Shovels (Hydil)	444	36	453	48	479	50
7	Dipper Shovels (Mechl)	144	11	93	0	84	5
8	Drag Lines	0	1	0	2	-	-
9	Drills/Blast Hols	853	124	874	116	868	115
10	Front end loader	492	16	492	27	614	29
11	Hauler/Dumper	4489	219	3985	243	4854	295
12	Locomotives	22	9	22	8	24	2
13	Motor Grader	56	4	78	5	61	7
14	Surface Miners	6	0	0	0	13	-

Source : Indian Bureau of Mines

**TABLE 5.4.6 : CONSUMPTION OF EXPLOSIVES FOR MINING, 2005-06  
(Excluding fuel, atomic & minor minerals)**

Sl. No.	Minerals	Gun Powder Ton	High Explosives Ton	Detonators (in thousand )		Fuses (Meters) ( in thousands)	
				Ordinary	Electric	Safety	Cordtex
1	2						
1	Bauxite	4	2001	227	42	348	1394
2	Chromite	-	1185	26	194	20	720
3	Copper Ore	-	2510	17	128	3	487
4	Gold	-	514	38	599	-	148
5	Iron Ore	.++	23602	1655	444	1693	6182
6	Lead & Zinc	-	5013	146	265	-	770
7	Manganese Ore	-	1494	813	782	1180	1096
8	Dolomite	13	926	198	138	265	403
9	Limestone	26	34373	1576	2377	2381	9546
10	Mica	-	15	84	11	211	-
11	Phospatic Minerals	-	2193	20	17	19	765
12	Others	11	2881	754	524	1787	1266
<b>11</b>	<b>Total</b>	<b>54</b>	<b>76677</b>	<b>5554</b>	<b>5521</b>	<b>7907</b>	<b>22777</b>

Source : Indian Bureau of Mines

@ Excluding fuel, atomic and minor minerals

.++ Negligible



**TABLE 5.4.7 : MINING LEASES (By principal States )  
(as on 31-3-2005\*)**

Sl. No.	State	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 Hect.)	% of Total Area
1	2	3	4	5	6
1	Andhra Pradesh	1567	21	55	12
2	Chhattisgarh	294	4	26	5
3	Goa	250	3	18	4
4	Gujarat	1094	15	24	5
5	Jharkhand	331	4	37	8
6	Karnataka	425	6	39	8
7	Madhya Pradesh	758	10	20	3
8	Maharashtra	252	3	17	3
9	Orissa	447	6	77	16
10	Rajasthan	1088	14	104	22
11	Tamilnadu	435	6	6	13
12	Others	586	8	50	1
	<b>All States</b>	<b>7527</b>	<b>100</b>	<b>473</b>	<b>100</b>

Source : Indian Bureau of Mines (IBM), Nagpur

\* : Excluding fuel, atomic and minor minerals

**TABLE 5.4.8 : Production of Coal  
(1996-97 to 2005-06)**

Year	Quantity (Lakh tonnes)	Value (Rs. Crore)	No of Mines*	Labour * Employed (Av. Daily)**
1	2	3	4	5
1996-97	2861	15129	574	506403
1997-98	2967	17724	571	503416
1998-99	2965	18850	562	491289
1999-00	3041	19741	606	486710
2000-01	3137	20352	591	449021
2001-02	3278	21648	564	438179
2002-03	3413	24187	556	422594
2003-04	3612	25440	554	416767
2004-05	3826	30434	563	405211
2005-06	4072	32354	563	405211

Source : Indian Bureau of Mines (IBM), Nagpur

\* : Excluding Meghalaya

\*\* : Including Lignite. Data relates to calender year

**TABLE 5.4.9 : Production of Lignite (1996-97 to 2005-06)**

Year	Quantity (Lakh tonnes)	Value (Rs. Crore)	No. of Mines
1	2		
1996-97	225	896	4
1997-98	231	956	4
1998-99	234	1112	5
1999-00	221	1051	5
2000-01	242	1418	5
2001-02	248	1695	6
2002-03	260	1743	6
2003-04	280	2038	8
2004-05	303	2192	8
2005-06	300	2152	9

Source : Indian Bureau of Mines (IBM), Nagpur

**TABLE 5.4.10 : Consumption of Minerals in Iron & Steel Industry (1996-97 to 2005-06)**

Year	('000 tonnes)						
	Iron Ore*	Coal*	Limestone*	Dolomite	Manganese Ore	Ferro-Alloys	Bauxite
1	2	3	4	5	6	7	8
1996-97	291	244	56	3340	598	194	16
1997-98	288	221	53	2950	500	216	21
1998-99	271	202	48	2640	395	183	18
1999-00	279	210	48	2750	322	199	19
2000-01	313	222	48	2850	351	212	14
2001-02	322	240	52	2760	255	223	20
2002-03	338	224	50	3142	212	228	16
2003-04	371	253	54	3001	101	265	1
2004-05	374	252	50	3662	90	259	1

Source : Indian Bureau of Mines (IBM), Nagpur

\* Lakh tonnes

**TABLE 5.4.11 Consumption of Minerals in Cement Industry (1996-97 to 2005-06)**

Year	('000 tonnes)							
	Limestone*	Coal*	Gypsum*	Quartz	Bauxite	Iron Ore	Kaolin	Fireclay
1	2	3	4	5	6	7	8	9
1996-97	846	137	34	132	428	761	NA	NA
1997-98	898	136	34	134	424	705	NA	NA
1998-99	933	113	33	221	426	746	NA	NA
1999-00	1018	126	39	186	442	750	NA	NA
2000-01	985	110	36	180	336	726	NA	NA
2001-02	1073	131	37	274	339	701	163	178
2002-03	1137	144	38	271	345	828	177	207
2003-04	1185	146	42	304	423	837	190	270
2004-05	1201	162	49	290	487	916	193	273

Source : Indian Bureau of Mines (IBM), Nagpur

\* Lakh tonnes

**TABLE 5.4.12 Consumption of Minerals in Refractory Industry (1996-97 to 2004-05)**

('000 tonnes)

Year	Dolomite	Fireclay	Magnesite*	Quartz & Quartzite	Bauxite & Diaspore	Chromite	Kyanite & Sillimanite	Kaolin
1	2	3	4	5	6	7	8	9
1996-97	187	321	292	71	238	22	24	22
1997-98	228	250	234	66	213	46	18	29
1998-99	228	241	235	64	200	39	18	22
1999-00	228	227	427	67	206	40	17	19
2000-01	379	227	182	61	197	25	18	18
2001-02	392	174	183	59	176	22	17	20
2002-03	391	160	144	48	194	22	17	17
2003-04	372	162	154	48	193	13	17	18
2004-05	372	177	162	48	201	10	20	27

Source : Indian Bureau of Mines (IBM), Nagpur

\* Includes iron & steel

**TABLE 5.4.13 Number of Reporting Mines (1996 -97 to 2005-06)**

('000 tonnes)

Year	Total*	Coal & Lignite	Metalic Minerals	Non-Metallic Minerals
1	2	3	4	5
1996-97	3541	578	683	2280
1997-98	3354	575	611	2168
1998-99	3283	567	621	2095
1999-00	3209	611	572	2026
2000-01	3191	596	565	2030
2001-02	3193	570	574	2049
2002-03	3145	562	591	1992
2003-04	3131	562	612	1957
2004-05	3214	571	625	2018
2005-06	2970	572	590	1808

Source : Indian Bureau of Mines (IBM), Nagpur

\* Includes iron & steel

Reporting mine: A mine reporting production or reporting 'Nil' production during a year but engaged in developmental work such as, overburden removal; underground driving, winzing, sinking work; exploration by pitting, trenching or drilling as evident from the MCDR returns.

**Table 5.4.14: Mineral Reserves and Resources (Contd...)**

Mineral/ Grades	Unit	As on 1.4.2000		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Apatite	'000 t	6146	20719	26865
Asbestos	'000 t	6041	15696	21736
Ball Clay	'000 t	32530	46761	79291
Barytes	'000 t	34313	39890	74203
Bauxite	'000 t	899384	2390433	3289817
Calcite	'000 t	6742	15832	22574
Chromite	'000 t	66128	146935	213063
Copper	'000 t	-		
Ore		369493	1024933	1394426
Metal		4383.97	7033.75	11417.72
Corundum	tonnes	604	83190	83795
Diamond	Th. carat	1206	3376	4582
Diaspore	'000 t	3125	2212	5337
Dolomite	'000 t	985156	6547952	7533108
Dunite	'000 t	128074	39855	167929
Felspar	'000 t	38050	52732	90782
Fire Clay	'000 t	561805	646393	1208198

**Table 5.4.14: Mineral Reserves and Resources (Contd...)\_**

Mineral/ Grades	Unit	As on 1.4.2000		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Limestone	m.t.	12715	162630	175345
Magnesite	'OOOt	76133	261749	337882
Manganese				
Ore	'OOOt	138152	240418	378569
Mica	t	68570	325285	393855
Ochre	'000 t	47868	45573	93441
'Perlite	'000 t	504	1385	1889
Phosphorite	'000 t	52723	252585	305308
Pyrites	'000 t	56726	1617675	1674401
Pyrophyllite	'000 t	19490	14205	33695
Quartz & Silica				
and	'000 t	771508	2466703	3238211
Quartzite	'000 t	98544	1046413	1144957
Ruby	Kg.	1925	3346	5271
Salt (Rock)	'000 t	13530	0	13530

**Table 5.4.14: Mineral Reserves and Resources (Contd...)**

Mineral/ Grades	Unit	As on 1.4.2000		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Fluorite	'000 t	9214	10952	20166
Gamet	'000 t	20976	36680	57656
Gold Primary Ore	'000 t	19254	371035	390289
Metal	tonnes	85	406	491
Graphite	'000 t	10750	158025	168775
Gypsum	'000 t	68658	1168218	1236876
Iron Ore & Cone. Hematite	'000 t	7004168	7626220	14630388
Magnetite		58504	10560977	10619481
Kaolin	'000 t	222121	2373540	2595661
Kyanite	'000 t	1374	101239	102613
Lead & Zinc Ore	'000 t	125754	396826	522580
Lead Metal		2590.55	4616.7	7207.25
Zinc Metal		11092.89	13166.79	24259.68

**Table 5.4.14: Mineral Reserves and Resources (Conclid.)**

Mineral/ Grades	Unit	As on 1.4.2000		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Sillimanite Total	OOOt	11424	62916	74340
Massive		167	3195	3362
Granular		10427	44421	54848
Unclassified		830	15300	16130
Silver Ore	OOOt	115913	128721	244633
Metal		6	4	10
Tale/Steatite/S oapstone	OOOt	115526	196810	312335'
Tin Ore	tonnes	249497	86302812	86552310
Metal		134	101103	101237
Tungsten Ore	tonnes	0	87387464	87387464
Metal		0	142094	142094
Vermiculite	tonnes	1763630	674631	2438261
Wollastonite	tonnes	8533311	11709141	2024245

Source : Indian Bureau of Mines

**TABLE 5.4.15 NUMBER OF UNDERGROUND MINES 2005-06\***  
**(By Principal Minerals)**

Mineral	Total	A' Category	B' Category
1	2	3	4
Apatite	1	0	1
Asbestos	3	1	2
Barytes	4	0	4
Chromite	5	5	0
Copper Ore	3	3	0
Gold	3	2	1
Lead & Zinc	6	6	0
Manganese Ore	12	7	5
Mica	29	2	27
Ochre	1	0	1
Salt (rock)	1	0	1
Steatite	8	1	7
<b>Total</b>	<b>76</b>	<b>27</b>	<b>49</b>

Source : Indian Bureau of Mines ( IBM), Nagpur

\* : Excluding fuel, atomic & minor minerals

A' i) Mechanised Mines                      ii) > 150 labour in all  
       iii) > 75 labour in workings below ground                      B'      Other than 'A'