

Chapter 2

Issues Arising Out of Theories for Control of Population

Abstract The theories of population threw up several issues governing population stabilisation of a country. Such issues look upon the population problem from its own domain perspective. Individually, such issues are important; collectively they explain genesis of the whole problem. The critical issues that have significant-bearing on sustainable population are the trend and the status of Population, Food grains Production scenario, Poverty status, Nutritional status, Unemployment scenario, Human Development Index, Resources scenario, Environmental and Climatic scenario. The trend and the current situation of such issues have been examined in the context of Indian situation and assessed the prospect of carrying further load of population.

Keywords Status of Population • Food grains production scenario • Poverty status • Nutritional status • Unemployment scenario • Human development profile • Resources scenario • Environmental and climatic scenario

The theories of population threw up several issues governing population stabilisation of a country. Such issues look upon the population problem from its own domain perspective. Individually, such issues are important; collectively they explain genesis of the whole problem. A select list of such issues are taken up here under in the context of our country.

2.1 Population status

Population is the most important asset of any country. Population is responsible in building up the economic edifice, cultural foundation and the standard of civilization of a country. On it also depends the quality of life of its citizens. However, the size of population is also the single most problem for any country when such size surpasses the optimum population and put a drag on economic prosperity and quality of life. With 2.4 % of the land territory of the world, India covers more than

Table 2.1 Decadal growth of the size of population of India from 1951–2011

Census Year	Size of population	Male population	Female population
1951	361,088,090	185,528,462	175,559,628
1961	439,234,771	226,293,201	212,941,570
1971	548,159,652	284,049,276	264,110,376
1981	683,329,097	353,374,460	329,954,637
1991	846,421,039	439,358,440	407,062,599
2001	1,020,193,422	531,277,078	495,738,169
2011	1,210,569,573	623,121,843	587,447,730

Sources Census publications of different years including PCA 2011

Table 2.2 Decadal incremental size of the population of India

Census year	Size of population	Incremental population	Decadal growth	Sex ratio
1951	361,088,090	–	13.31	946
1961	439,234,771	78,146,680	21.64	941
1971	548,159,652	108,924,881	24.80	930
1981	683,329,097	135,169,445	24.66	934
1991	846,421,039	163,091,942	23.86	927
2001	1,020,193,422	173,772,383	21.54	933
2011	1,210,569,573	190,376,151	17.7	943

Sources Census publications of different years including PCA 2011

Table 2.3 Growth of absolute number of population of India

Census Year	POPULATION OF INDIA	Times of population growth of India over the 1951 census	Incremental population over last census	Density of population
1951	361,088,090	–	–	117
1961	439,234,771	1.21	78,146,680	142
1971	548,159,652	1.51	108,924,881	177
1981	683,329,097	1.89	135,169,445	216
1991	846,421,039	2.34	163,091,942	267
2001	1,020,193,422	2.82	173,772,383	325
2011	1,210,569,573	3.35	190,376,151	382

Sources Census publications of different years including PCA 2011, India

17.5 % of the population of the world as per census 2011. The population size of India is unusually very big and the trend of growth of population is also very alarming. In a number of Tables from 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 and 2.8, the size of population, its decadal increment, decadal growth and density have been captured from censuses in India for the states of this country which are self-explanatory and indicate the critical population scenario of the country.

Table 2.4 Population size of the states of India

States	1951	1961	1971	1981	1991	2001	2011
Andhra Pradesh	31,115,259	35,983,447	43,502,708	53,551,026	66,508,008	76,210,007	84,580,777
Arunachal Pradesh	NA	336,558	467,511	631,839	864,558	1,097,968	1,383,727
Assam	8,028,858	10,837,329	14,625,152	18,041,248	22,414,322	26,655,528	31,205,576
Bihar	38,782,271	46,447,457	56,353,369	69,914,734	64,530,554	82,998,509	104,099,452
Chhattisgarh	–	–	–	–	17,614,928	20,833,803	25,545,198
NCT of Delhi#	1,744,072	2,658,612	4,065,698	6,220,406	9,420,644	13,850,507	16,787,941
Goa	596,059	626,667	857,771	1,086,730	1,169,793	1,347,668	1,458,545
Gujarat	16,262,657	20,633,350	26,697,475	34,085,799	41,309,582	50,671,017	60,439,692
Haryana	5,673,597	7,590,524	10,036,431	12,922,119	16,463,648	21,144,564	25,351,462
Himachal Pradesh	2,385,981	2,812,463	3,460,434	4,280,818	5,170,877	6,077,900	6,864,602
Jammu & Kashmir	3,253,852	3,560,976	21,843,911	4,616,632	5,987,389	10,143,700	12,541,302
Jharkhand	–	–	–	–	21,843,911	26,945,829	32,988,134
Karnataka	19,401,956	23,586,772	29,299,014	37,135,714	44,977,201	52,850,562	61,095,297
Kerala	13,549,118	16,903,715	21,347,375	25,453,680	29,098,518	31,841,374	33,406,061
Madhya Pradesh	26,071,637	32,372,408	41,654,119	48,566,242	52,178,844	60,348,023	72,626,809
Maharashtra	32,002,564	39,553,718	50,412,235	62,782,818	78,937,187	96,878,627	112,374,333
Manipur	577,635	780,037	1,072,753	1,420,953	1,837,149	2,166,788	2,570,390
Meghalaya	605,674	769,380	1,011,699	1,335,819	1,774,778	2,318,822	2,966,889
Mizoram	196,202	266,063	332,390	493,757	689,756	888,573	1,097,206
Nagaland	212,975	369,200	516,449	774,930	1,209,546	1,990,036	1,978,502
Odisha	14,645,946	17,548,846	21,944,615	26,370,274	31,659,736	36,804,660	41,974,218
Pondicherry#	317,253	369,079	471,707	604,471	807,785	974,345	1,247,953
Punjab	9,160,500	11,135,069	13,551,060	16,788,915	20,281,969	24,358,999	27,743,338
Rajasthan	15,970,774	20,155,602	25,765,806	34,261,862	44,005,990	56,507,188	68,548,437

(continued)

Table 2.4 (continued)

States	1951	1961	1971	1981	1991	2001	2011
Sikkim	137,725	162,189	209,843	316,385	406,457	540,851	610,577
Tamil Nadu	30,119,047	33,686,953	41,199,168	48,408,077	55,858,946	62,405,679	72,147,030
Tripura	639,029	1,142,005	1,556,342	2,053,058	2,757,205	3,199,203	3,673,917
Uttar Pradesh	63,219,672	73,754,573	88,341,521	110,862,512	132,067,653	166,197,921	199,812,341
Uttarakhand	–	–	–	–	7,050,634	8,489,349	10,086,292
West Bengal	26,299,980	34,926,279	44,312,011	54,580,647	68,077,965	80,176,197	91,276,115
Chadigarh#	24,261	119,881	257,251	451,610	642,015	900,635	1,055,450
Daman&Diu#					138,477	158,204	243,247
D&N Haveli#	41,532	57,963	74,170	103,676	138,477	220,490	343,709
Lakshadweep#	21,035	24,108	31,810	40,249	51,707	60,650	64,473
A&N Islands#	30,971	63,548	115,133	188,741	280,661	356,152	380,581
All India	361,088,090	439,234,771	548,159,652	6,833,290,971	846,421,039	1,028,610,328	1,210,569,573

Sources Census publications and PCA, 2011; # stands for Union Territories

Table 2.5 Decadal growth of population in the states of India

States	1951	1961	1971	1981	1991	2001	2011
Andhra Pradesh	14.02	15.65	20.90	23.10	24.20	14.59	11.0
Arunachal Pradesh	NA	NA	38.91	35.15	36.83	27.06	26.0
Assam	19.93	34.98	34.95	23.36	24.24	18.92	17.1
Bihar	10.58	19.79	20.91	23.38	24.16	28.62	25.4
Chhattisgarh	9.42	22.77	27.12	20.39	25.73	18.27	22.6
NCT of Delh#	90.00	52.44	52.93	53.00	51.45	47.02	21.2
Goa	1.21	7.77	34.77	26.75	16.08	15.21	8.2
Gujarat	18.69	26.88	29.39	27.67	21.19	22.66	19.3
Haryana	7.60	33.79	32.22	28.75	27.41	28.43	19.9
Himachal Pradesh	5.42	17.87	23.04	23.71	20.79	17.54	12.9
Jammu & Kashmir	10.42	9.44	29.65	29.69	30.34	29.43	23.6
Jharkhand	9.35	19.69	22.58	23.79	24.03	23.36	22.4
Karnataka	19.36	21.57	24.22	26.75	21.12	17.51	15.6
Kerala	22.82	24.76	26.29	19.24	14.32	9.43	4.9
Madhya Pradesh	8.38	24.73	29.28	27.16	27.24	24.26	20.3
Maharashtra	19.27	23.60	27.45	24.54	25.73	22.73	16.0
Manipur	12.80	35.04	37.53	32.46	24.29	24.86	18.6
Meghalaya	8.97	27.03	31.50	32.04	32.86	30.65	27.9
Mizoram	28.42	35.61	24.93	48.55	39.70	28.82	23.5
Nagaland	12.30	73.35	39.98	50.05	56.08	64.53	-0.6
Odisha	6.38	19.82	25.05	20.17	20.06	16.25	14.0
Pondicherry#	11.31	16.34	27.81	28.15	33.64	20.62	28.1
Punjab	-4.58	21.56	21.70	23.89	20.81	20.10	13.9
Rajasthan	15.20	26.20	27.83	33.97	28.44	28.41	21.4
Sikkim	13.34	17.76	29.38	50.77	28.47	33.06	12.9
Tamil Nadu	14.66	11.85	22.30	17.50	15.39	11.72	15.6
Tripura	24.56	27.03	31.50	32.04	32.86	16.03	14.8
Uttar Pradesh	11.78	16.38	19.54	25.39	25.55	25.85	20.2
Uttarakhand	12.67	22.57	24.42	27.45	24.23	20.41	18.8
West Bengal	13.22	32.80	26.87	23.17	24.73	17.77	13.8
Chadigarh#	7.47	394.13	114.59	75.55	42.16	40.28	17.2
Daman&Diu#	13.55	-24.56	70.85	26.07	28.62	55.73	53.8
D&N Haveli#	2.70	39.56	27.45	24.54	25.73	59.22	55.9
Lakshadweep#	14.60	14.61	31.95	26.53	28.47	17.30	6.3
A&N Islands#	-8.28	105.19	81.17	63.93	48.70	26.90	6.9
All India	13.31	21.64	24.80	24.66	23.86	21.54	17.7

Sources Census of India, paper 1 of 2011 and PCA, 2011; # stands for Union Territories

Table 2.6 Decadal rate of growth of some of the selected countries of the world

Countries	Reference date	Population in millions	Decadal change
China	01.11.2010	1341.0	5.43
India	01.03.2011	1210.5	17.64
USA	01.04.2010	308.7	7.26
Indonesia	31.05.2010	237.6	15.05
Brazil	01.08.2010	190.7	9.39
Pakistan	01.07.2010	184.8	24.78
Bangladesh	01.07.2010	164.4	16.76
Nigeria	01.07.2010	158.3	26.84
Russian Federation	01.07.2010	140.4	-4.29
Japan	01.10.2010	128.1	1.1
Other countries	01.07.2010	2844.7	15.43
World	01.07.2010	6908.7	12.97

Source Census of India, paper 1 of 2011

Table 2.7 Density of population in the states of India

States	1951	1961	1971	1981	1991	2001	2011
Andhra Pradesh	112	131	158	195	242	277	308
Arunachal Pradesh	–	4	6	8	10	13	17
Assam	102	138	186	230	286	340	398
Bihar	223	267	324	402	685	881	1106
Chhattisgarh	–	–	–	–	130	154	189
NCT of Delhi#	1176	1793	2742	4194	6352	9340	11,320
Goa	148	159	215	272	316	364	394
Gujarat	83	105	136	174	211	258	308
Haryana	128	172	227	292	327	478	573
Himachal Pradesh	43	51	62	77	93	109	123
Jammu & Kashmir	NA	NA	NA	59	77	100	124
Jharkhand	–	–	–	–	#276	338	414
Karnataka	101	123	153	194	235	276	319
Kerala	349	435	549	655	749	820	860
Madhya Pradesh	59	73	94	118	158	196	236
Maharashtra	104	129	164	204	257	315	365
Manipur	26	35	48	64	82	97	115
Meghalaya	27	34	45	60	79	103	132
Mizoram	9	13	16	23	33	42	52
Nagaland	13	22	31	47	73	120	119
Odisha	94	113	141	169	203	236	270
Pondicherry#	645	750	959	1229	1683	1989	2547
Punjab	182	221	269	333	403	484	551

(continued)

Table 2.7 (continued)

States	1951	1961	1971	1981	1991	2001	2011
Rajasthan	47	59	75	100	129	165	200
Sikkim	19	23	30	45	57	76	86
Tamil Nadu	232	259	317	372	429	480	555
Tripura	61	109	148	196	263	305	350
Uttar Pradesh	215	251	300	377	548	690	829
Uttarakhand	–	–	–	–	133	159	189
West Bengal	296	394	499	615	761	903	1028
Chadigarh#	213	1052	2257	3961	5632	7900	9258
Daman&Diu#	434	327	559	705	907	1425	2191
D&N Haveli#	85	118	151	221	282	449	700
Lakshadweep#	657	753	994	1258	1616	2022	2149
A&N Islands#	4	8	14	23	34	43	46
All India	117	142	177	216	267	325	382

Sources Census publications and PCA, 2011; # stands for Union Territories

Table 2.8 Relative density of population of some other populated countries of the world

Country	Population (in thousand)	Density of population
China	1,354,146	141
India	1,210,569	382
USA ^a	308	33
Indonesia	232,517	122
Brazil	195,425	23

^aUSA Census 2010

Source Census publication, 2011, India

The religion-wise growth of population of India is an issue of great demographic importance and is also of serious concern from population stabilisation point of view. While the Census of India shows the religious group under the Hindus, the Muslim, the Christian, the Sikh, the Buddhists, the Jains and others, the data analysis hereunder centers around on two principal religious groups, the Hindus and the Muslims, who share the major burden of population size in the country. The self-introductory Tables from 2.9, 2.10, 2.11, 2.12 and 2.13 reveal the relative contribution of the Hindus and the Muslims to the alarming population size and growth in the states of India.

To sum up, the total population of India at 0.00 hour of Ist March 2011 was 1210.6 million. Of this, the total rural population was 833.5 million and the urban population 377.1 million. In absolute numbers, out of the total increase of 182 million added to the last decade, the contribution of rural and urban areas is equal to 91.0 million each. Uttar Pradesh has the largest rural population of 155.3 million (18.6 % of the country's rural population) whereas Maharashtra has the highest urban population of 50.8 million (13.5 % of country's urban population) in the country.

Table 2.9 The muslim population in India and its growth rate

Census/Year	Total population	Muslim population	Proportion of muslim population to total population (%)	Incremental decadal size of muslim	Decadal growth rate of muslim population	Decadal growth rate of India
1951	361,088,090	35,856,047	9.93	NA	-16.5	13.31
1961	439,234,771	46,998,120	10.70	11,142,073	31.07	21.64
1971	548,159,652	61,448,696	11.21	14,459,576	30.74	24.8
1981	683,329,097	77,557,852	11.35	16,109,156	26.21	24.66
1991	846,421,039	102,586,957	12.12	25,029,105	32.27	23.86
2001	1,020,193,422	138,159,437	13.43	35,572,480	34.68	21.54
2011	1,210,569,573	172,245,158	14.88	34,085,721	24.67	17.7

Source Census of India in 2001 and 2011

Table 2.10 Decadal growth of the hindus in the states of India in 2011

States	Total population in 2011	Hindu population in 2011	Hindu population in 2001	Decadal growth of pop of the states in 2011	Decadal growth rate of hindus in 2011	Decadal growth rate of muslims in 2011
Andhra Pradesh	84,580,777	74,824,149	67,836,651	11.0	10.30	18.98
Arunachal Pradesh	1,383,727	401,876	379,935	26.0	5.77	30.81
Assam	31,205,576	19,180,759	17,296,455	17.1	10.89	29.59
Bihar	104,099,452	86,078,686	69,076,919	25.4	24.61	27.95
Chhattisgarh	25,545,198	23,819,789	707,978	22.6	20.73	25.73
NCT of Delhi ^a	16,787,941	13,712,106	11,358,049	21.2	20.72	32.96
Goa	1,458,545	963,877	886,551	8.2	8.72	31.83
Gujarat	60,439,692	53,533,988	45,143,074	19.3	18.58	27.30
Haryana	25,351,462	22,171,128	18,655,925	19.9	18.84	45.66
Himachal Pradesh	6,864,602	6,532,765	5,800,222	12.9	12.62	25.41
Jammu & Kashmir	12,541,302	3,566,674	3,005,349	23.6	18.67	26.12
Jharkhand	32,988,134	22,376,051	18,475,681	22.4	21.11	28.48
Karnataka	61,095,297	51,317,472	44,321,279	15.6	15.78	22.12
Kerala	33,406,061	18,282,492	17,883,449	4.9	2.23	12.84
Madhya Pradesh	72,626,809	66,007,121	55,004,675	20.3	20.00	24.29
Maharashtra	112,374,333	89,703,057	77,859,385	16.0	15.21	26.30
Manipur	2,570,390	1,181,876	996,894	18.6	18.55	25.61

(continued)

Table 2.10 (continued)

States	Total population in 2011	Hindu population in 2011	Hindu population in 2001	Decadal growth of pop of the states in 2011	Decadal growth rate of hindus in 2011	Decadal growth rate of muslims in 2011
Meghalaya	2,966,889	342,078	307,822	27.9	11.12	31.49
Mizoram	1,097,206	30,136	31,562	23.5	-4.51	46.87
Nagaland	1,978,502	173,054	153,162	-0.6	12.98	39.87
Odisha	41,974,218	39,300,341	34,726,129	14.0	13.17	19.64
Pondicherry ^a	1,247,953	1,089,409	845,449	28.1	28.85	27.29
Punjab	27,743,338	10,678,138	8,997,942	13.9	18.67	40.16
Rajasthan	68,548,437	60,657,103	50,151,452	21.4	20.94	29.81
Sikkim	610,577	352,662	329,548	12.9	7.01	28.26
Tamil Nadu	72,147,030	63,188,168	54,985,079	15.6	14.91	21.86
Tripura	3,673,917	3,063,903	2,739,310	14.8	11.84	24.21
Uttar Pradesh	199,812,341	159,312,654	133,979,263	20.2	18.90	25.19
Uttarakhand	10,086,292	8,368,636	7,212,260	18.8	16.03	38.99
West Bengal	91,276,115	64,385,546	58,104,835	13.8	10.80	21.81
Chadigarh ^a	1,055,450	852,574	707,978	17.2	20.42	44.73
Daman&Diu ^a	243,247	220,150	141,901	53.8	55.14	56.97
D&N Haveli ^a	343,709	322,857	206,203	55.9	56.57	98.07
Lakshadweep ^a	64,473	1788	2221	6.3	-19.49	7.54
A&N Islands ^a	380,581	264,296	246,589	6.9	7.18	9.83
All India	1,210,569,573	966,257,353	827,578,868	17.7	16.75	24.65

Source Census of India in 2001 and 2011

^aUnion territories**Table 2.11** Decadal growth of the hindus, muslims and the states of India in 2011

States	Total population in 2011	Hindu population in 2011	Muslim population in 2011	Decadal growth of pop of the state/India in 2011	Decadal growth rate of hindus in 2011	Decadal growth rate of muslims in 2011
Andhra Pradesh	84,580,777	74,824,149	8,082,412	11.0	10.30	18.98
Arunachal Pradesh	1,383,727	401,876	27,045	26.0	5.77	30.81
Assam	31,205,576	19,180,759	10,679,345	17.1	10.89	29.59
Bihar	104,099,452	86,078,686	17,557,809	25.4	24.61	27.95
Chhattisgarh	25,545,198	23,819,789	514,998	22.6	20.73	25.73
NCT of Delhi ^a	16,787,941	13,712,106	2,158,684	21.2	20.72	32.96
Goa	1,458,545	963,877	121,564	8.2	8.72	31.83

(continued)

Table 2.11 (continued)

States	Total population in 2011	Hindu population in 2011	Muslim population in 2011	Decadal growth of pop of the state/India in 2011	Decadal growth rate of hindus in 2011	Decadal growth rate of muslims in 2011
Gujarat	60,439,692	53,533,988	5,846,761	19.3	18.58	27.30
Haryana	25,351,462	22,171,128	1,781,342	19.9	18.84	45.66
Himachal Pradesh	6,864,602	6,532,765	149,881	12.9	12.62	25.41
Jammu & Kashmir	12,541,302	3,566,674	8,567,485	23.6	18.67	26.12
Jharkhand	32,988,134	22,376,051	4,793,994	22.4	21.11	28.48
Karnataka	61,095,297	51,317,472	7,893,065	15.6	15.78	22.12
Kerala	33,406,061	18,282,492	8,873,472	4.9	2.23	12.84
Madhya Pradesh	72,626,809	66,007,121	4,774,695	20.3	20.00	24.29
Maharashtra	112,374,333	89,703,057	12,971,152	16.0	15.21	26.30
Manipur	2,570,390	1,181,876	239,836	18.6	18.55	25.61
Meghalaya	2,966,889	342,078	130,399	27.9	11.12	31.49
Mizoram	1,097,206	30,136	14,832	23.5	-4.51	46.87
Nagaland	1,978,502	173,054	48,963	-0.6	12.98	39.87
Odisha	41,974,218	39,300,341	911,670	14.0	13.17	19.64
Pondicherry ^a	1,247,953	1,089,409	75,556	28.1	28.85	27.29
Punjab	27,743,338	10,678,138	535,489	13.9	18.67	40.16
Rajasthan	68,548,437	60,657,103	6,215,377	21.4	20.94	29.81
Sikkim	610,577	352,662	9867	12.9	7.01	28.26
Tamil Nadu	72,147,030	63,188,168	316,042	15.6	14.91	21.86
Tripura	3,673,917	3,063,903	316,042	14.8	11.84	24.21
Uttar Pradesh	199,812,341	159,312,654	38,483,967	20.2	18.90	25.19
Uttarakhand	10,086,292	8,368,636	1,406,825	18.8	16.03	38.99
West Bengal	91,276,115	64,385,546	24,654,825	13.8	10.80	21.81
Chandigarh ^a	1,055,450	852,574	51,447	17.2	20.42	44.73
Daman&Diu ^a	243,247	220,150	19,277	53.8	55.14	56.97
D&N Haveli ^a	343,709	322,857	12,922	55.9	56.57	98.07
Lakshadweep ^a	64,473	1788	62,268	6.3	-19.49	7.54
A&N Islands ^a	380,581	264,296	32,143	6.9	7.18	9.83
All India	1,210,569,573	966,257,353	172,245,158	17.7	16.75	24.65

Source Census of India in 2001 and 2011

^aUnion territories

Table 2.12 Trend of proportion of muslim population in the states of India 2001 and 2011

States	Total population in 2011	Muslim population in 2011	Muslim population in 2001	Incremental Muslim population in the decade, 2001–2011	Decadal growth of muslims in 2011	Proportion of muslims to total population in 2001	Proportion of muslims to Total population in 2011
Andhra Pradesh	84,580,777	8,082,412	6,793,240	1,289,172	18.98	9.2	9.56
Arunachal Pradesh	1,383,727	27,045	20,675	6370	30.81	1.9	1.95
Assam	31,205,576	10,679,345	8,240,611	2,438,734	29.59	30.9	34.22
Bihar	104,099,452	17,557,809	13,722,048	3,835,761	27.95	16.5	16.87
Chhattisgarh	25,545,198	514,998	409,615	105,383	25.73	2	2.02
NCT of Delhi ^a	16,787,941	2,158,684	1,623,520	535,164	32.96	11.7	12.86
Goa	1,458,545	121,564	92,210	29,354	31.83	6.8	8.33
Gujarat	60,439,692	5,846,761	4,592,854	1,253,907	27.3	9.1	9.67
Haryana	25,351,462	1,781,342	1,222,916	558,426	45.66	5.8	7.03
Himachal Pradesh	6,864,602	149,881	119,512	30,369	25.41	2	2.18
Jammu & Kashmir	12,541,302	8,567,485	6,793,240	1,774,245	26.12	67	68.31
Jharkhand	32,988,134	4,793,994	3,731,308	1,062,686	28.48	13.8	14.53
Karnataka	61,095,297	7,893,065	6,463,127	1,429,938	22.12	12.2	12.92
Kerala	33,406,061	8,873,472	7,863,842	1,009,630	12.84	24.7	26.56
Madhya Pradesh	72,626,809	4,774,695	3,841,449	933,246	24.29	6.4	6.57
Maharashtra	112,374,333	12,971,152	10,270,485	2,700,667	26.3	10.6	11.54
Manipur	2,570,390	239,836	190,939	48,897	25.61	8.8	9.33

(continued)

Table 2.12 (continued)

States	Total population in 2011	Muslim population in 2011	Muslim population in 2001	Incremental Muslim population in the decade, 2001–2011	Decadal growth of muslims in 2011	Proportion of muslims to total population in 2001	Proportion of muslims to Total population in 2011
Meghalaya	2,966,889	130,399	99,169	31,230	31.49	4.3	4.40
Mizoram	1,097,206	14,832	10,099	4733	46.87	1.1	1.35
Nagaland	1,978,502	48,963	35,005	13,858	39.87	1.8	2.47
Odisha	41,974,218	911,670	761,985	149,685	19.64	2.1	2.17
Pondicherry ^a	1,247,953	75,556	59,358	16,198	27.29	6.1	6.05
Punjab	27,743,338	535,489	382,045	153,444	40.16	1.6	1.93
Rajasthan	68,548,437	6,215,377	4,788,227	1,427,150	29.81	8.5	9.07
Sikkim	610,577	9867	7693	2174	28.26	1.4	1.62
Tamil Nadu	72,147,030	4,229,479	3,470,647	758,832	21.86	5.6	5.86
Tripura	3,673,917	316,042	254,442	61,600	24.21	8	8.60
Uttar Pradesh	199,812,341	38,483,967	30,740,158	7,743,809	25.19	18.5	19.26
Uttarakhand	10,086,292	1,406,825	1,012,141	394,684	38.99	11.9	13.95
West Bengal	91,276,115	24,654,825	20,240,543	4,414,282	21.81	25.2	27.01
Chadigarh ^a	1,055,450	51,447	35,548	15,899	44.73	3.9	4.87
Daman&Diu ^a	243,247	19,277	12,281	6996	56.97	7.8	7.92
D&N Haveli ^a	343,709	12,922	6524	6397	98.07	3	3.76
Lakshadweep ^a	64,473	62,268	57,903	4365	7.54	95	96.58
A&N Islands ^a	380,581	32,143	29,265	2878	9.83	8.2	8.45
All India	1,210,569,573	172,245,158	138,188,240	34,085,721	24.65	13.4	14.23

^aUnion territories

Table 2.13 Decadal growth rates of hindus and muslims since 1951

Census year	Hindu population in million	Decadal growth of Hindus	Muslim population in million	Decadal growth of Muslims	Muslim rate of growth more than Hindu rate of growth
1951	303.5	27.36	35.4	-16.5	–
1961	366.5	20.75	46.9	32.48	11.73
1971	453.3	23.68	61.4	30.92	7.24
1981	562.4	24.07	80.3	30.78	6.71
1991	690.1	22.71	106.7	32.87	10.16
2001	827.6	19.92	138.2	29.52	9.60
2011	966.2	16.75	172.2	24.60	7.85

Source IIPS India

The growth rate of population in India during 2001–2011 was 17.7 % (Rural-12.3 %, Urban-31.8 %). Meghalaya has recorded the highest growth rate in rural population and Daman&Diu (218.8) the highest decadal growth rate in urban population.

The population density in Census 2011 works out to be 382 showing an increase of 57 points from 2001. Delhi (11320) turns out to be the most densely inhabited followed by Chandigarh (9258) in all States/UTs, both in Census 2001 and 2011. Among the major States, Bihar occupies the first position with a density of 1106, surpassing West Bengal which occupied the first position during 2001. The minimum population density works out to be in Arunachal Pradesh (17) for both censuses.

The census 2011 has revealed that India is on way to overtake China, the most populous country of the World, that too, not even at a distant point of time. Unfortunately for India, there is hardly any commensurate response to the enormity of this impending danger across the stake holders. This casual feeling has its spread effects in the administration of population control and family planning right from the policy making areas down to its implementation at different layers of field functionaries in a hierarchical format. The absence of correct focus in an alarming situation has been the sad story of population control scenario in India. This is due to the fact that both the Union government and the State governments have not been administering its constitutional mandate of Population control and family planning, as enshrined at serial no 20A of the Concurrent List of the Constitution of India. Instead the country had taken up a water-down concept of Family Welfare which lacks the robust vision and kicking effect required for a sustainable population in the country. Incidentally, the population of India, as per the 2011 Census is almost equal to the combined population of USA, Indonesia, Brazil, Pakistan, Bangladesh and Japan. India will also overtake China, the most populous country in the world as per projection below:

Year	India	China	World
2009	1,160,813,000	1,338,612,968	6,786,743,939
2012	1,208,116,000	1,366,205,049	7,028,369,002
2015	1,254,019,000	1,393,417,233	7,269,526,256
2020	1,326,155,000	1,430,532,735	7,659,291,953
2025	1,388,994,000	1,453,123,817	8,027,490,191
2050	1,807,878,574	1,424,161,948	9,538,988,263

Sources National Commission on Population Govt. of India and U.S Census Bureau, International Database 29.05.2015

2.2 Food grains Production scenario

Connected with huge size of population is the need for adequate food grains to support required calories to such population to ensure a healthier people. It is true that just as the society evolves, food system also evolves. However, basic food grains for life support and food security remains almost the same. The position of food grains productions etc for the country is captured here to have an idea how far and to what extent the country is in a position to withstand burgeoning population pressure on the food grains front.

It would appear from above Table 2.14 that the area, production and yield under food grains has grown very slowly and even registered negative in a number of

Table 2.14 Food grains production scenario of India since 1951–1952 (unit—in million tons)

Year	Area	Production	Yield
1951–1952	76.5	47.0	65.8
1952–53	80.5	51.7	70.1
1953–1954	86.0	60.7	77.7
1954–1955	85.0	59.0	75.7
1955–1956	87.0	59.0	73.3
1956–1957	87.5	61.7	75.2
1957–1958	86.2	55.7	69.4
1958–1959	90.3	66.7	79.6
1959–1960	91.5	64.9	75.6
1960–1961	90.9	69.6	81.9
1961–1962	92.0	69.4	80.2
1962–1963	92.9	67.3	76.6
1963–1964	92.5	67.9	77.5
1964–1965	91.6	75.4	87.8
1965–1966	90.6	60.6	71.0
1966–1967	90.8	60.8	71.2
1967–1968	95.7	78.3	86.6
1968–1969	94.8	76.3	84.2
1969–1970	97.3	81.6	87.5
1970–1971	97.9	87.9	93.2

(continued)

Table 2.14 (continued)

Year	Area	Production	Yield
1971–1972	96.6	86.1	91.3
1972–1973	93.9	79.1	85.8
1973–1974	99.6	85.3	89.0
1974–1975	95.3	81.0	87.0
1975–1976	100.8	98.8	99.7
1976–1977	97.8	89.6	92.4
1977–1978	100.3	103.0	103.2
1978–1979	101.5	107.0	105.7
1979–1980	98.5	87.5	88.7
1980–1981	99.8	104.9	105.1
1981–1982	101.7	107.6	105.9
1982–1983	98.6	103.7	104.9
1983–1984	103.4	122.8	117.8
1984–1985	99.8	117.5	115.5
1985–1986	100.9	123.4	120.6
1986–1987	100.2	116.9	114.9
1987–1988	94.3	113.5	117.2
1988–1989	100.6	138.1	134.2
1989–1990	99.9	139.1	135.5
1990–1991	100.7	143.7	137.8
1991–1992	96.0	137.6	136.5
1992–1993	97.0	144.3	142.0
1993–1994	127.4	135.1	106.0
1994–1995	128.8	141.0	109.5
1995–1996	125.4	131.4	104.8
1996–1997	128.4	145.1	113.0
1997–1998	128.7	140.9	109.5
1998–1999	130.0	150.0	115.4
1999–2000	127.8	152.9	119.6
2000–2001	125.7	141.9	112.9
2001–2002	127.5	155.3	121.8
2002–2003	118.2	126.6	107.0
2003–2004	128.2	155.1	121.0
2004–2005	124.7	144.2	115.6
2005–2006	126.3	152.5	120.8
2006–2007	128.5	158.8	123.6
2007–2008	128.8	168.6	130.9
2008–2009	127.6	171.3	134.3
2009–2010	126.0	159.4	126.5
2010–2011	131.7	178.9	135.9
2011–2012	129.8	188.1	144.9

Source Ministry of Agriculture, Government of India

years. This is due to shifting of land use for non- agriculture purposes including industrialisation and urbanization and also due to adverse climatic factors. Besides, shrinkage of area under food grains was also due to transfer of food grains production area to non-food commercial crops area. Be that as it may, let us look at the annual growth rate of them over the years and then reposition them census year wise with decadal growth of population, as in Tables 2.15 and 2.16.

In the given scenario, it would be relevant to reorganize the per cent growth of areas, productions and yields vis-à-vis growth of population as per the census years:

The Provisional Census, 2011 Handbook published by the Registrar General of Census, Government of India also published a Table on census year wise population, GDP and Output of Food grains which is shown in Table 2.17.

The data, in brief, show a less than hopeful trend- scenario in the food-grains sector. The inelastic nature of availability of additional acreage of land for food-grains production together with not- commensurate growth of productivity is a real problem to withstand the burgeoning population size and its resultant

Table 2.15 Growth of Food grains Production scenario of India since 1951–1952 (unit—in million tons)

Year	Area	Growth (%)	Production	Growth (%)	Yield	Growth (%)
1951–1952	76.5		47		65.8	
1952–1953	80.5	5.23	51.7	10	70.1	6.53
1953–1954	86	6.83	60.7	17.41	77.7	10.84
1954–1955	85	–1.16	59	–2.80	75.7	–2.57
1955–1956	87	2.35	59	0.00	73.3	–3.17
1956–1957	87.5	0.57	61.7	4.58	75.2	2.59
1957–1958	86.2	–1.49	55.7	–9.72	69.4	–7.71
1958–1959	90.3	4.76	66.7	19.75	79.6	14.70
1959–1960	91.5	1.33	64.9	–2.70	75.6	–5.03
1960–1961	90.9	–0.66	69.6	7.24	81.9	8.33
1961–1962	92	1.21	69.4	–0.29	80.2	–2.08
1962–1963	92.9	0.98	67.3	–3.03	76.6	–4.49
1963–1964	92.5	–0.43	67.9	0.89	77.5	1.17
1964–1965	91.6	–0.97	75.4	11.05	87.8	13.29
1965–1966	90.6	–1.09	60.6	–19.63	71	–19.13
1966–1967	90.8	0.22	60.8	0.33	71.2	0.28
1967–1968	95.7	5.40	78.3	28.78	86.6	21.63
1968–1969	94.8	–0.94	76.3	–2.55	84.2	–2.77
1969–1970	97.3	2.64	81.6	6.95	87.5	3.92
1970–1971	97.9	0.62	87.9	7.72	93.2	6.51
1971–1972	96.6	–1.33	86.1	–2.05	91.3	–2.04
1972–1973	93.9	–2.80	79.1	–8.13	85.8	–6.02
1973–1974	99.6	6.07	85.3	7.84	89	3.73
1974–1975	95.3	–4.32	81	–5.04	87	–2.25

(continued)

Table 2.15 (continued)

Year	Area	Growth (%)	Production	Growth (%)	Yield	Growth (%)
1975–1976	100.8	5.77	98.8	21.98	99.7	14.60
1976–1977	97.8	–2.98	89.6	–9.31	92.4	–7.32
1977–1978	100.3	2.56	103	14.96	103.2	11.69
1978–1979	101.5	1.20	107	3.88	105.7	2.42
1979–1980	98.5	–2.96	87.5	–18.22	88.7	–16.08
1980–1981	99.8	1.32	104.9	19.89	105.1	18.49
1981–1982	101.7	1.90	107.6	2.57	105.9	0.76
1982–1983	98.6	–3.05	103.7	–3.62	104.9	–0.94
1983–1984	103.4	4.87	122.8	18.42	117.8	12.30
1984–1985	99.8	–3.48	117.5	–4.32	115.5	–1.95
1985–1986	100.9	1.10	123.4	5.02	120.6	4.42
1986–1987	100.2	–0.69	116.9	–5.27	114.9	–4.73
1987–1988	94.3	–5.89	113.5	–2.91	117.2	2.00
1988–89	100.6	6.68	138.1	21.67	134.2	14.51
1989–1990	99.9	–0.70	139.1	0.72	135.5	0.97
1990–1991	100.7	0.80	143.7	3.31	137.8	1.70
1991–1992	96	–4.67	137.6	–4.24	136.5	–0.94
1992–1993	97	1.04	144.3	4.87	142	4.03
1993–94	127.4	31.34	135.1	–6.38	106	–25.35
1994–1995	128.8	1.10	141	4.37	109.5	3.30
1995–1996	125.4	–2.64	131.4	–6.81	104.8	–4.29
1996–1997	128.4	2.39	145.1	10.43	113	7.82
1997–1998	128.7	0.23	140.9	–2.89	109.5	–3.10
1998–99	130	1.01	150	6.46	115.4	5.39
1999–2000	127.8	–1.69	152.9	1.93	119.6	3.64
2000–2001	125.7	–1.64	141.9	–7.19	112.9	–5.60
2001–2002	127.5	1.43	155.3	9.44	121.8	7.88
2002–2003	118.2	–7.29	126.6	–18.48	107	–12.15
2003–2004	128.2	8.46	155.1	22.51	121	13.08
2004–2005	124.7	–2.73	144.2	–7.03	115.6	–4.46
2005–2006	126.3	1.28	152.5	5.76	120.8	4.50
2006–2007	128.5	1.74	158.8	4.13	123.6	2.32
2007–2008	128.8	0.23	168.6	6.17	130.9	5.91
2008–2009	127.6	–0.93	171.3	1.60	134.3	2.60
2009–2010	126	–1.25	159.4	–6.95	126.5	–5.81
2010–2011	131.7	4.52	178.9	12.23	135.9	7.43
2011–2012	129.8	–1.44	188.1	5.14	144.9	6.62

Source Ministry of Agriculture, Government of India

Table 2.16 Decadal growth of food grains production scenario of India since 1951–1952

Year	Decadal growth of population	% of growth Area	% growth of food grains production	% growth of Yield
1951	13.31	NA	NA	NA
1961	21.64	1.21	–0.2.9	–0.2.08
1971	24.80	–1.33	–2.05	–2.04
1981	24.66	1.90	2.57	0.76
1991	23.86	–4.67	–4.24	–0.94
2001	21.54	1.43	9.44	7.88
2011	17.7	–1.44	5.14	6.62

Table 2.17 Census year wise population, GDP and output of food grains

Census Year	Population (in millions)	GDP (at constant prices in Rs. -crore)	Output of Food grains (million tons)
1950–1951	361	224,786	50.8
1960–1961	439	329,825	82.0
1970–1971	548	474,131	108.4
1980–1981	683	641,921	129.6
1990–1991	846	1,083,572	176.4
2000–2001	1028.7	1,864,300	196.8
2010–2011	1210.2	4,493,743	218.2

Source Census Handbook, 2011(provisional)

requirement for food-grains. The situation is bound to be more critical in years to come with the annual addition of around 19 million population per year together with possible demand of food-grains basket of energy requirement of 2400 kcal per person per day for the rural sector and 2100 kcal for the urban sector, a norm earlier set by the Planning Commission but not in place, is taken into consideration. Indeed, the hiatus of the growth of population and the growth of food-grains production is a pointer of the upcoming disaster in the food-grains scenario.

2.3 Poverty status

Poverty exists in all societies where a section or a proportion of its citizens fails to attain a level of wellbeing considered to be a reasonable minimum by the standard of the society. It varies from time to time and also from one country to another depending on the cost of living and the level of development. Historically, the first poverty line study in India, undertaken in 1962 by a Working Group set up by the Government of India, recorded a Per capita Total Consumption Expenditure (PCTE) of Rs. 20 per month in 1960–1961 prices. The Planning Commission defined the poverty level as below the average per capita daily intake of 2400 calories in rural

areas and 2100 calories for urban areas. Based on NSS data 1973–1974, it was estimated that total consumption expenditure of Rs. 49.09 per capita per month in the rural areas and Rs. 56.64 per capita per month in the urban areas were the appropriate poverty lines. These were the accepted norms for poverty studies with adjustment in the cost of living index. The simplest measure of poverty is given by head count ratio, which essentially measures the percentage of people below the poverty line. All estimates of poverty usually follow the head count ratio for simplicity.

Let us now look at the Poverty Estimates of the Planning Commission from time to time on India and within its states to understand the magnitude of the poverty situation time and its linkage, if any, with the decadal growth of population. The Number and Percentage of Population Below Poverty Line by States for the year 1972–1973 and thereafter is given in Tables 2.18, 2.19 and 2.20.

Table 2.18 Number and percentage of population below poverty line by states, 1972–1973 (officially released estimates)

Sl No	No of states	Rural		Urban		Combined	
		No of lakhs	% age	No of lakhs	% age	No of lakhs	% age
0	1	2	3	4	5	6	7
1	Andhra Pradesh	207.1	57.7	38.5	43.8	245.6	54.9
2	Assam	69.0	48.2	4.9	33.8	73.9	47.0
3	Bihar	291.2	55.8	25.9	43.4	317.1	54.5
4	Gujarat	86.9	43.9	26.6	34.0	113.5	41.1
5	Haryana	18.4	21.5	5.6	29.9	24.0	23.1
6	Himachal Pradesh	5.1	15.5	0.3	12.5	5.4	15.1
7	Janmu& Kashmir	14.1	36.1	4.7	51.6	18.8	39.0
8	Karnataka	119.0	52.3	34.3	45.8	153.3	50.5
9	Kerala	106.4	57.8	19.2	52.7	125.6	56.9
10	Madhya Prades	222.3	61.4	32.5	44.8	254.8	58.6
11	Maharashtra	191.5	53.9	56.7	34.3	248.2	47.7
12	Manipur	2.4	24.7	0.4	24.2	2.8	24.7
13	Meghalaya	1.8	20.6	0.2	10.8	2.0	19.0
14	Orissa	147.3	71.0	8.5	43.3	155.8	68.6
15	Punjab	22.6	21.5	7.3	21.8	29.9	21.5
16	Rajasthan	105.0	47.5	18.8	39.3	123.8	46.0
17	Tamil Nadu	183.5	63.0	67.8	52.2	251.3	59.7
18	Tripura	6.2	42.6	0.3	18.7	6.5	39.9
19	Uttar Pradesh	413.1	53.0	66.4	51.6	479.5	52.8
20	West Bengal	220.9	64.0	41.6	35.9	262.5	56.8
21	Nagaland and all union territories	8.4	37.6	12.8	26.7	21.2	30.2
22	All India	2442.2	54.1	473.3	41.2	2915.5	51.5

Notes

1. The above estimates are derived by using the poverty lines of Rs. 41 and Rs. 47 per capita per month for rural and urban areas respectively at 1972–1973 prices, corresponding to the poverty lines of Rs. 49.1 and Rs. 56.6 respectively at 1973–1974 prices
2. The number of persons below poverty line relates to the population as on 1st Oct., 1972

Table 2.19 Number and Percentage of Population Below Poverty Line by States, 1983–1984 (Officially Released Estimates)

Sl No	No of States	Rural		Urban		Combined	
		No of Lakhs	% age	No of Lakhs	% age	No of Lakhs	% age
0	1	2	3	4	5	6	7
1	Andhra Pradesh	164.4	38.7	40.7	29.5	205.1	36.4
2	Assam	44.9	23.8	4.9	21.6	49.8	23.5
3	Bihar	329.4	51.4	36.1	37.0	365.5	49.5
4	Gujarat	67.7	27.6	19.9	17.3	87.6	24.3
5	Haryana	16.2	15.2	5.5	16.9	21.7	15.6
6	Himachal Pradesh	5.8	14.0	0.3	8.0	6.1	13.5
7	Janmu& Kashmir	8.1	16.4	2.2	15.8	10.3	16.3
8	Karnataka	102.9	37.5	34.7	29.2	137.6	35.0
9	Kerala	55.9	26.1	15.6	30.1	71.5	26.8
10	Madhya Pradesh	218.0	50.3	36.9	31.1	254.9	46.2
11	Maharashtra	176.1	41.5	55.9	23.3	232.0	34.9
12	Manipur	1.3	11.7	0.6	13.8	1.9	12.3
13	Meghalaya	3.9	33.7	0.1	4.0	4.0	28.0
14	Orissa	107.7	44.8	10.4	29.3	118.1	42.8
15	Punjab	13.7	10.9	10.7	21.0	24.4	13.8
16	Rajasthan	105.0	36.6	21.2	26.1	126.2	34.3
17	Tamil Nadu	147.6	44.1	52.6	30.9	200.2	39.6
18	Tripura	4.6	23.5	0.5	19.6	5.1	23.0
19	Uttar Pradesh	440.0	46.5	90.6	40.3	530.6	45.3
20	West Bengal	183.9	43.8	41.2	26.5	225.1	39.2
21	Nagaland and all union territories	17.9	47.4	14.4	17.7	32.3	27.1
22	All India	2215.0	40.4	495.0	28.1	2710.0	37.4

Notes

1. The above estimates are derived by using the poverty line of Rs. 131.8 per capita per month for rural areas and 152.1 per capita per month for urban areas at 1987–1988 prices, corresponding to the poverty lines of Rs. 49.1 and Rs. 56.6 respectively for 1973–1974

2. The number of persons below poverty line relates to the population as on 1st March, 1988

Official estimates of poverty in India have been made, as above, by the Planning Commission on the basis of methodology recommended by the Lakdawala Committee (1993). There has been much discussion thereafter as to whether the poverty lines underlying these official estimates needed to be redefined as the official poverty lines based on specified level of calorie got broken over time with the change of consumption pattern and no longer regarded as appropriate. Moreover, for the purpose of determining eligibility for certain benefits, a certain percentage of the population are needed to be eligible as the target group which would facilitate to measure the extent to which growth over time has benefited the

Table 2.20 Poverty estimates for 1993–1994 and 2003–2004 using Lakdawala Methodology

Sl No	Name of the state/union territory	1993–1994			2003–2004		
		Rural	Urban	Combined	Rural	Urban	Combined
1	Andhra Pradesh	15.9	38.3	22.2	11.2	28.0	15.8
2	Arunachal Pradesh	45.0	7.7	39.4	22.3	3.3	17.6
3	Assam	45.0	7.7	40.9	22.3	3.3	19.7
4	Bihar	58.2	34.5	55.0	42.1	34.6	41.4
5	Chhattisgarh	NA	NA	NA	40.8	41.2	40.9
6	Delhi	1.9	16.0	14.7	6.9	15.2	14.7
7	Goa	5.3	27.0	14.9	5.4	21.3	13.8
8	Gujarat	22.2	27.9	24.2	19.1	13.0	16.8
9	Haryana	28.0	16.4	25.1	13.6	15.1	14.0
10	Himachal Pradesh	30.3	9.2	28.4	10.7	3.4	10.0
11	Jammu & Kashmir	30.3	9.2	25.2	4.6	7.9	5.4
12	Jharkhand	NA	NA	NA	46.3	20.2	40.3
13	Karnataka	29.9	40.1	33.2	20.8	32.6	25.0
14	Kerala	25.8	24.6	25.4	13.2	20.2	15.0
15	Madhya Pradesh	40.6	48.4	42.5	36.9	42.1	38.3
16	Maharashtra	37.9	35.2	36.9	29.6	32.2	30.7
17	Manipur	45.0	7.7	33.8	22.3	3.3	17.3
18	Meghalaya	45.0	7.7	37.9	22.3	3.3	18.5
19	Mizoram	45.0	7.7	25.7	22.3	3.3	12.6
20	Nagaland	45.0	7.7	37.9	22.3	3.3	19.0
21	Orissa	49.7	41.6	48.6	46.8	44.3	46.4
22	Punjab	12.0	11.4	11.8	9.1	7.1	8.4
23	Rajasthan	26.5	30.5	27.4	18.7	32.9	22.1
24	Sikkim	45.0	7.7	41.4	22.3	3.3	20.1
25	Tamil Nadu	32.5	39.8	35.0	22.8	22.2	22.5
26	Tripura	45.0	7.7	39.0	22.3	3.3	18.9
27	Uttar Pradesh	42.3	35.4	40.9	33.4	30.6	32.8
28	Uttarakhand	NA	NA	NA	40.8	36.5	39.6
29	West Bengal	40.8	22.4	35.7	28.6	14.8	24.7
30	Pondicherry	32.5	39.8	37.4	22.9	22.2	22.4
Total	All India	37.3	32.4	36.0	28.3	25.7	27.5

Source Website of the Planning Commission

poor, i.e., reduced the number or the percentage of the population below the poverty line. Further, as in case of any price index, there is also a case for periodically raising the poverty line even beyond pure inflation adjustment in order to reflect growth of income in the economy.

Planning Commission had accordingly appointed the Tendulkar Committee in December 2005 to review alternate concepts of poverty and recommend changes in the existing procedures of official estimation of poverty. The Tendulkar Committee submitted its report in November 2009. The Committee reviewed various

arguments advanced in favour of redefining the poverty line and came to the conclusion that some changes are necessary. However, it has not recommended a new basis for defining poverty in terms of calories, or any other minimum basic needs norm. Instead, it has decided (a) to locate the poverty line bundle of goods and services in the consumption pattern observed in the 2004–2005 NSS survey based on the mixed reference period; (b) and that the same bundle be made available to the rural population after correcting for the rural-urban price differential.

Needless to mention, when such revisions are made, the percentage of population below the poverty line is no longer comparable with the earlier estimates. The consequence of this procedure is that the rural poverty lines for 2004–2005 appeared to be too low compared to the corresponding urban poverty. Be that as it may, Poverty Lines and Poverty Head Count Ratio for 2004–2005, as per report of the Tendulkar Committee were as follows (Tables 2.21 and 2.22):

Table 2.21 Poverty lines and poverty head count ratio for 2004–2005 using Tendulkar methodology

No.	States	Poverty line (Rs)		Poverty Head Count Ratio (%)		
		Rural	Urban	Rural	Urban	Total
1	Andhra Pradesh	433.43	563.16	32.30	23.40	29.90
2	Arunachal Pradesh	547.14	618.45	33.60	23.50	31.10
3	Assam	478.00	600.03	36.40	21.80	34.40
4	Bihar	433.43	526.18	55.70	43.70	54.40
5	Chhattisgarh	398.92	513.70	55.10	28.40	49.40
6	Delhi	541.39	642.47	15.60	12.90	13.10
7	Goa	608.76	671.15	28.10	22.20	25.00
8	Gujarat	501.58	659.18	39.10	20.10	31.80
9	Haryana	529.42	626.41	24.80	22.40	24.10
10	Himachal Pradesh	520.40	605.74	25.00	4.60	22.90
11	Jammu & Kashmir	522.30	602.89	14.10	10.40	13.20
12	Jharkhand	404.79	531.35	51.60	23.80	45.30
13	Karnataka	417.84	588.06	37.50	25.90	33.40
14	Kerala	537.31	584.70	20.20	18.40	19.70
15	Madhya Pradesh	408.41	532.26	53.60	35.10	48.60
16	Maharashtra	484.89	631.85	47.90	25.60	38.10
17	Manipur	578.11	641.13	39.30	34.50	38.00
18	Meghalaya	503.32	745.73	14.00	24.70	16.10
19	Mizoram	639.27	699.75	23.00	7.90	15.30
20	Nagaland	687.30	782.93	10.00	4.30	9.00
21	Orissa	407.78	497.31	60.80	37.60	57.20
22	Punjab	543.51	642.51	22.10	18.70	20.90
23	Rajasthan	478.00	568.15	35.80	29.70	34.40

(continued)

Table 2.21 (continued)

No.	States	Poverty line (Rs)		Poverty Head Count Ratio (%)		
		Rural	Urban	Rural	Urban	Total
24	Sikkim	531.50	741.68	31.80	2.90	31.10
25	Tamil Nadu	441.69	559.77	37.50	19.70	28.90
26	Tripura	450.49	555.79	44.50	22.50	40.60
27	Uttar Pradesh	435.14	532.12	42.70	34.10	40.90
28	Uttarakhand	486.24	602.39	35.10	26.20	32.70
29	West Bengal	445.38	572.51	38.20	24.40	34.3
30	Pondicherry	385.45	506.17	22.90	9.90	14.10
Total	All India	446.68	578.80	41.80	25.70	37.20

Table 2.22 Number and percentage of population below poverty line by states—2011–2012 (Tendulkar methodology)

Sl No	States	Rural		Urban		Total	
		% of persons	No. of persons (Lakhs)	% of persons	No. of persons (Lakhs)	% of persons	No. of persons (Lakhs)
1	Andhra Pradesh	10.96	61.80	5.81	16.98	9.20	78.78
2	Arunachal Pradesh	38.93	4.25	20.33	0.66	34.67	4.91
3	Assam	33.89	92.06	20.49	9.21	31.98	101.27
4	Bihar	34.06	320.40	31.23	37.75	33.74	358.15
5	Chhattisgarh	44.61	88.90	24.75	15.22	39.93	104.1
6	Delhi	12.92	0.50	9.84	16.46	9.91	16.96
7	Goa	6.81	0.37	4.09	0.38	5.09	0.75
8	Gujarat	21.54	75.35	10.14	26.88	16.63	102.23
9	Haryana	11.64	19.42	10.28	9.41	11.16	28.83
10	Himachal Pradesh	8.48	5.29	4.33	0.30	8.06	5.59
11	Jammu & Kashmir	11.54	10.73	7.20	2.53	10.35	13.27
12	Jharkhand	40.84	104.09	24.83	20.24	36.96	124.33
13	Karnataka	24.53	92.80	15.25	36.96	20.91	129.76
14	Kerala	9.14	15.48	4.97	8.46	7.05	23.95
15	Madhya Pradesh	35.74	190.95	21.00	43.10	31.65	234.06
16	Maharashtra	24.22	150.56	9.12	47.36	17.35	197.92
17	Manipur	38.80	7.45	32.59	2.78	36.89	10.22
18	Meghalaya	12.53	3.04	9.26	0.57	11.87	3.61
19	Mizoram	35.43	1.91	6.36	0.37	20.40	2.27
20	Nagaland	19.93	2.76	16.48	1.00	18.88	3.76
21	Orissa	35.69	126.14	17.29	12.39	32.59	138.59
22	Punjab	7.66	13.35	9.24	9.82	8.26	23.18
23	Rajasthan	16.05	84.19	10.69	18.73	14.71	102.92
24	Sikkim	9.85	0.45	3.66	0.06	8.19	0.51

(continued)

Table 2.22 (continued)

Sl No	States	Rural		Urban		Total	
		% of persons	No. of persons (Lakhs)	% of persons	No. of persons (Lakhs)	% of persons	No. of persons (Lakhs)
25	Tamil Nadu	15.83	59.23	6.54	23.40	11.28	82.63
26	Tripura	16.53	4.49	7.42	0.75	14.05	5.24
27	Uttar Pradesh	30.40	479.35	26.06	118.84	29.43	598.19
28	Uttarakhand	11.62	8.25	10.48	3.35	11.26	11.60
29	West Bengal	22.52	141.14	14.66	43.83	19.98	184.98
30	Pondicherry	17.06	0.69	6.30	0.55	9.69	1.24
31	Andaman&Nicobar Islands	1.57	0.04	0.00	0.00	1.00	0.04
32	Chandigarh	1.64	0.004	22.31	2.34	21.81	2.35
33	Dadra Nagar	62.59	1.15	15.38	0.28	39.31	1.43
34	Daman&Diu	0.00	0.00	12.62	0.26	9.86	0.26
35	Lakshadweep	0.00	0.00	3.44	0.02	2.77	0.02
	All India	25.70	2166.58	13.70	531.25	21.92	2697.83

Notes

1. Population as on 1st March 2012 has been used for estimating number of persons below poverty line. (2011 Census population extrapolated)
2. Poverty line of Tamil Nadu has been used for Andaman and Nicobar Island
3. Urban Poverty Line of Punjab has been used for both rural and urban areas of Chandigarh
4. Poverty Line of Maharashtra has been used for Dadra & Nagar Haveli
5. Poverty line of Goa has been used for Daman&Diu
6. Poverty Line of Kerala has been used for Lakshadweep

Source website of the Planning Commission

A serious debate on Tendulkar methodology adopted for the poverty estimate began subsequent to publication of 2011–2012 poverty estimate and the Planning Commission, to revisit poverty estimates and related methodologies, set up an Expert Group to ‘Review the Methodology for Measurement of Poverty’ under a Technical Group of eminent economists under the Chairmanship of Dr. C. Rangarajan. The Report, since published, mentions that three out of ten Indians are poor. The report also mentioned that poverty was at 38.2 % in 2009–2010 and then came down to 29.5 % in 2011–2012. The Rangarajan panel also recommended to raise the daily per capita expenditure to Rs. 32 from Rs. 27 for the rural poor.

Based on State-wise Poverty Line in Rural and Urban areas for 2011–2012, Poverty Ratio and Number of Poor in 2011–2012 for the States of India, as per the methodology of the Rangarajan Committee, is as follows Table 2.23:

The size of BPL population, worked out under whatever methodology, is significantly at a higher level in India. The size of BPL population across the States of India as revealed in the Rangarajan Committee Report, is massive even after more

Table 2.23 Poverty ratio and number of poor in 2011–2012

Sl. No	States	Rural		Urban		Total	
		% of persons	No. of persons (in lakhs)	% of persons	No. of persons (in lakhs)	% of persons	No. of persons (in lakhs)
1	Andhra Pradesh	12.7	71.5	15.6	45.7	13.7	117.3
2	Arunachal Pradesh	39.3	4.3	30.9	1.0	37.4	5.3
3	Assam	42.0	114.1	34.2	15.4	40.9	129.5
4	Bihar	40.1	376.8	50.8	61.4	14.3	438.1
5	Chhattisgarh	49.2	97.9	43.7	26.9	47.9	124.8
6	Delhi	11.9	0.5	15.7	26.3	15.6	26.7
7	Goa	1.4	0.1	9.1	0.8	6.3	0.9
8	Gujarat	31.4	109.8	22.2	58.9	27.4	168.8
9	Haryana	11.0	18.4	15.3	14.0	12.5	32.4
10	Himachal Pradesh	11.1	6.9	8.8	0.6	10.9	7.5
11	Jammu & Kashmir	12.6	11.7	21.6	7.6	15.1	19.3
12	Jharkhand	45.9	117.0	31.3	25.5	42.4	142.5
13	Karnataka	19.8	74.8	25.1	60.9	21.9	136.7
14	Kerala	7.3	12.3	15.3	26.0	11.3	38.3
15	Madhya Pradesh	45.2	241.4	42.1	86.3	44.3	327.8
16	Maharashtra	22.5	139.9	17.0	88.4	20.0	228.3
17	Manipur	34.9	6.7	73.4	6.3	46.7	18.9
18	Meghalaya	26.3	6.4	16.7	1.0	24.4	7.4
19	Mizoram	33.7	1.8	21.5	1.2	27.4	3.1
20	Nagaland	6.1	0.8	32.1	1.9	14.0	2.8
21	Odisha	47.8	169.0	36.3	26.0	45.9	195.0
22	Punjab	7.4	12.9	17.6	18.7	11.3	31.6
23	Rajasthan	21.4	112.0	22.5	39.5	21.7	151.5
24	Sikkim	20.0	0.9	11.7	0.2	17.8	1.1
25	Tamil Nadu	24.3	91.1	20.3	72.8	22.4	163.9
26	Tripura	22.5	6.1	31.3	3.2	24.9	9.3
27	Uttarakhand	38.1	600.9	45.7	208.2	39.8	809.1
28	Uttar Pradesh	12.6	8.9	29.5	9.4	17.8	18.4
29	West Bengal	30.1	188.6	29.0	86.8	29.7	275.4

Source Rangarajan Committee Report

than four decades of planned development. In fact, the size of BPL population grows with the size of population, though the rate of its growth declines with time. The unsustainable size of population is the root cause of the existence of this huge

size of parasitic BPL population. There is little scope to make use of this ‘over-populated’ component of population size in India. The economic, social and political burden of the overpopulated population is one of the prime factors why India is yet to reach desired GDP, higher Per capita income or scale up its HDI.

2.4 Nutritional status

Nutrition is nourishment or energy that is obtained from food consumed or the process of consuming the proper amount of nourishment and energy. Good nutrition is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. Malnutrition is directly related to inadequate dietary intake as well as disease, but indirectly to many factors, among others household food security, maternal and child care, health services and the environment.

Nutrition is usually having context centred meaning. Human nutrition seeks to obtain the essential nutrients necessary to support life and health. Economists on the other define nutrition in the context of poverty through a defined norm using a minimum dietary energy requirement norm. The Planning Commission has been following a nutritional norm of energy requirement of 2400 kcal per person per day for the rural sector and 2100 kcal for the urban sector while the Food and Agricultural Organisation of the United Nations (FAO) norm for India as a whole for 2003–2005 was 1770 kcal.

The nutritional status can be discussed from three angles:

- From poverty angle of average calorie intake
- From Child nutrition angle
- From Women nutrition angle

(a) From poverty angle of average calorie intake

As against the Planning Commission’s norm of energy requirement of 2400 kcal per person per day for the rural sector and 2100 kcal for the sector, the trend of All-India picture of the proportion of per capita calorie intake (kcal) for the rural and urban area for the states of India for 2004–2005 and 2009–2010 have been captured at Table 2.24.

The per capita calorie intake per day during 2004–2005 to 2009–2010, reveals trend of decline in both in rural and urban areas. However, the extent of decline was more in urban areas. Among the major States, estimated per capita calorie intake (Kcal) per day in rural areas was highest in Punjab (2223 kcal) and lowest in Jharkhand (1900 kcal) in 2009–2010. In urban areas, the highest per capita calorie intake (Kcal) per day was reported in Odisha (2096 kcal) and lowest in West Bengal (1851 kcal) as against the national norm of 2100 kcal.

Table 2.24 Estimated per capita calorie intake (kcal) per day in major states

States	Rural		Urban	
	2004–2005	2009–2010	2004–2005	2009–2010
Andhra Pradesh	1995	2047	2000	1975
Assam	2067	1974	2143	2003
Bihar	2049	1931	2190	2013
Chhattisgarh	1942	1926	2087	1949
Gujarat	1923	1982	1991	1983
Haryana	2226	2180	2033	1940
Jharkhand 1	1961	1900	2458	2046
Karnataka	1845	1903	1944	1987
Kerala	2014	1964	1996	1941
Madhya Pradesh	1929	1939	1954	1854
Maharashtra	1933	2051	1847	1901
Orissa	2023	2126	2139	2096
Punjab	2240	2223	2150	2062
Rajasthan	2180	2191	2116	2014
Tamil Nadu	1842	1925	1935	1963
Uttar Pradesh	2200	2064	2124	1923
Uttarakhand	2160	2179	2205	1984
West Bengal	2070	1927	2011	1851

Source NSS report 540, Nutritional intake in India

(b) From Child nutrition angle

Children usually face brunt of poverty and as a result malnourishment among children is very significant pointing to lack of food security and other essential child care facilities. The ‘Prevalence of underweight children’ in any country denotes the percentage of children under three years of age whose weight for age is less than minus two standard deviations from the median for the reference population aged 0–35 months.

At Table 2.25, the proportion of Underweight Children<3 years has been shown for the states of India. While the All India estimated proportion of Underweight Children<3 years in 1990 was estimated at 52 %, the position of improvement has not been satisfactory for a good number of states in 1992–1993(NFHS-1) , 1998–1999 (NFHS-2) and 2005–2006 (NFHS-3) as shown at Table 2.2. However, as per NFHS-3 survey results, 10 States namely Mizoram (14.2%), Sikkim (17.3%), Manipur (19.5%), Kerala (21.2%), Goa (21.3%), Punjab (23.6%), Nagaland (23.7%), Jammu & Kashmir (24%), Delhi (24.9%), and Tamil Nadu (25.9%) have already achieved the all India MDG target for prevalence of underweight children under three years of age and four more States i.e. Andhra Pradesh, Karnataka, Maharashtra and Uttarakhand are likely to achieve the target by 2015.

Children under age five years are classified as malnourished depending on three anthropometric indices of nutritional status: height-for-age, weight-for-height, and

Table 2.25 Proportion of underweight children <3 years

Proportion of underweight children <3 years state	1990 estimated	NFHS-1 (1992–1993)	NFHS-2 (1998–1999)	NFHS-3 (2005–2006)	Likely achievement 2015	Target-2015
Andhra Pradesh	44.41	42.9	34.2	29.8	22.17	22.21
Arunachal Pradesh	28.62	32.1	21.9	29.7	25.50	14.31
Assam	43.48	44.1	35.3	35.8	29.48	21.74
Bihar	49.28	NA	52.2	54.9	59.00	24.64
Chhattisgarh	60.12	NA	53.2	47.8	41.02	30.06
Delhi	38.09	36.2	29.9	24.9	18.58	19.04
Goa	28.90	29.3	21.3	21.3	15.92	14.45
Gujarat	42.82	42.7	41.6	41.1	39.82	21.41
Haryana	28.60	31	29.9	38.2	43.29	14.30
Himachal Pradesh	40.35	38.4	36.5	31.1	26.78	20.17
Jammu & Kashmir	36.54	NA	29.2	24	18.14	18.27
Jharkhand	48.17		51.5	54.6	59.36	24.09
Karnataka	48.28	46.4	38.6	33.3	25.59	24.14
Kerala	22.25	22.1	21.7	21.2	20.54	11.12
Madhya Pradesh	43.75	NA	50.8	57.9	69.80	21.87
Maharashtra	52.24	47.3	44.8	32.7	25.39	26.12
Manipur	19.33	19.1	20.1	19.5	20.03	9.67
Meghalaya	32.02	6.9	28.6	42.9	44.17	16.01
Mizoram	19.27	17.2	19.8	14.2	13.03	9.63
Nagaland	17.36	18.7	18.8	23.7	27.66	8.68
Odisha	54.07	50	50.3	39.5	33.98	27.04
Punjab	39.66	39.9	24.7	23.6	14.79	19.83
Rajasthan	45.36	41.8	46.7	36.8	34.91	22.68
Sikkim	13.67	NA	15.5	17.3	20.24	6.84
Tamil Nadu	42.88	0.7	31.5	25.9	18.06	21.44
Tripura	42.67	42.1	37.3	35.2	30.36	21.34
Uttar Pradesh	56.78	NA	48.1	41.6	33.81	28.39
Uttarakhand	42.38	NA	36.3	31.7	26.12	21.19
West Bengal	56.11	53.2	45.3	37.6	28.79	28.05
All India	52.00	51.5	42.7	40.4	32.85	26.00

Source NFHS, M/o HFV

weight-for-age. The height-for-age index is an indicator of growth retardation and cumulative growth deficits. Children whose height-for-age Z-score in the states below minus two standard deviations (-2 SD) are considered short for their age (stunted) and are chronically malnourished. Children below minus three standard deviations (-3 SD) are considered to be severely stunted. Stunting reflects the long-term effects of malnutrition in a population. The weight-for-height index measures body mass in relation to body length and describes current nutritional status. Children whose Z-score is below minus two standard deviations (-2 SD) are considered thin (wasted) for their height and are acutely malnourished. Wasting represents inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children whose weight-for-height is below minus three standard deviations (-3 SD) are considered to be severely wasted. Weight-for-age is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition. Children whose weight-for-age is below minus two standard deviations are classified as underweight. Children whose weight-for-age is below minus three standard deviations (-3 SD) are considered to be severely underweight. The percentage of such children for India in 2005–2006 is shown at Table 2.26.

It would appear from Table 2.26 that inadequate nutrition is a problem throughout India, but there are variations within the states in India. The above table shows that under nutrition is most pronounced in Madhya Pradesh, Bihar, and Jharkhand.

(c) From Women nutrition angle

The height and weight measurements in NFHS-3 are used to calculate the BMI. The BMI is defined as weight in kilograms divided by height in metres squared (kg/m^2). A cut-off point of 18.5 is used to define thinness or acute under nutrition and a BMI of 25 or above indicates overweight or obesity. A woman's nutritional status has important implications for her health as well as the health of her children. A woman with poor nutritional status, as indicated by a low body mass index (BMI), short stature, anaemia, or other micronutrient deficiencies, has a greater risk of obstructed labour, having a baby with a low birth weight, having adverse pregnancy outcomes, producing lower quality breast milk, death due to postpartum haemorrhage and illness for herself and her baby. Table 2.27 captures Low Body Mass Index (BMI) and Anaemia in Women (%) in the states of India.

At Table 2.27, the nutritional status of women for the states of India has been presented by means of two indicators—BMI and Anaemia. It would appear there from that the position of West Bengal, Odisha, Jharkhand, Chattisgarh and Bihar is very alarming in respect of both the counts and much above the national average. A good number of states posted better status like Andhra Pradesh, Arunachal Pradesh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir and all North Eastern and Southern States. In respect of Anaemia in ever married Women (15–49) too, the percentage for Andhra Pradesh, Assam, Bihar, Jharkhand, Odisha, Sikkim, Tripura and West Bengal is alarmingly high and much above the

Table 2.26 Nutritional status of children by states

State	Height for Age			Weight for Height			Weight for Age		
	Percentage below -3 SD	Percentage below -2 SD	Mean Z score (SD)	Percentage below -3 SD	Percentage below -2 SD	Percentage above +2 SD	Mean Z score SD	Percentage below -3 SD	Percentage below -2 SD
India	23.7	48.0	-1.9	6.4	19.8	1.5	-0	15.8	42
North									
Delhi	20.4	42.2	-1.6	7.0	15.4	4.0	-0.5	8.7	26.1
Haryana	19.4	45.7	-1.8	5.0	19.1	1.4	-1.0	14.2	39.6
Himachal Pradesh	16.0	38.6	-1.5	5.5	19.3	1.1	-1.0	11.4	36.5
Jammu & Kashmir	14.9	35.0	-1.3	4.4	14.8	2.3	-0.7	8.2	25.6
Punjab	17.3	36.7	-1.5	2.1	9.2	1.5	-0.5	8.0	24.9
Rajasthan	22.7	43.7	-1.7	7.3	20.4	1.6	-1.1	15.3	39.9
Uttaranchal	23.1	44.4	-1.8	5.3	18.8	2.3	-0.9	15.7	38.0
Central									
Chhattisgarh	24.8	52.9	-2.0	5.6	19.5	1.3	-1.1	16.4	47.1
Madhya Pradesh	26.3	50.0	-2.0	12.6	35.0	1.0	-1.6	27.3	60.0
Uttar Pradesh	32.4	56.8	-2.2	5.1	14.8	1.2	-0.8	16.4	42.4
East									
Bihar	29.1	55.6	-2.1	8.3	27.1	0.3	-1.4	24.1	55.9
Jharkhand	26.8	49.8	-1.9	11.8	32.3	0.6	-1.5	26.1	56.5
Orissa	19.6	45.0	-1.7	5.2	19.5	1.7	-1.0	13.4	40.7
West Bengal	17.8	44.6	-1.7	4.5	16.9	1.9	-0.9	11.1	38.7

(continued)

Table 2.26 (continued)

State	Height for Age			Weight for Height			Weight for Age		
	Percentage below -3 SD	Percentage below -2 SD	Mean Z score (SD)	Percentage below -3 SD	Percentage below -2 SD	Percentage above +2 SD	Mean Z score SD	Percentage below -3 SD	Percentage below -2 SD
<i>Northeast</i>									
Arunachal Pradesh	21.7	43.3	-1.6	6.1	15.3	3.4	-0.7	11.1	32.5
Assam	20.9	46.5	-1.8	4.0	13.7	1.1	-0.8	11.4	36.4
Manipur	13.1	35.6	-1.4	2.1	9.0	2.2	-0.6	4.7	22.1
Meghalaya	29.8	55.1	-2.0	19.9	30.7	2.6	-1.2	27.7	48.8
Mizoram	17.7	39.8	-1.6	3.5	9.0	4.3	-0.3	5.4	19.9
Nagaland	19.3	38.8	-1.4	5.2	13.3	4.7	-0.5	7.1	25.2
Sikkim	17.9	38.3	-1.4	3.3	9.7	8.3	-0.1	14.9	19.7
Tripura	14.7	35.7	-1.5	8.6	24.6	2.2	-1.2	15.7	39.6
<i>West</i>									
Goa	10.2	25.6	-1.1	5.6	14.1	4.3	-0.7	6.7	25.0
Gujarat	25.5	51.7	-2.0	5.8	18.7	1.2	-1.0	16.3	44.6
Maharashtra	19.1	46.3	1.8	5.2	16.5	2.8	-0.9	11.9	37.0
<i>South</i>									
Andhra Pradesh	18.7	42.7	-1.7	3.5	12.2	2.2	0.7	9.9	32.5
Karnataka	20.5	43.7	1.7	5.9	17.6	2.6	-1.0	12.8	37.6
Kerala	6.5	24.5	-1.1	4.1	15.9	1.2	-0.9	4.7	22.9
Tamil Nadu	10.9	30.9	-1.1	8.9	22.2	3.6	-1.0	6.4	29.8

Source NFHS-3 Chapter-10

Table 2.27 Low body mass index (BMI) and Anaemia in women (%)

State	Women with BMI below normal		Anaemia in ever married women (15–49)	
	NFHS-2 (1998–1999)	NFHS-3 (2005–2006)	NFHS-2 (1998–1999)	NFHS-3 (2005–2006)
Andhra Pradesh	37.4	33.5	49.8	62.9
Arunachal Pradesh	10.7	16.4	62.5	50.6
Assam	27.1	36.5	69.7	69.5
Bihar	39.3	45.1	63.4	67.4
Chhattisgarh	48.1	43.4	68.7	57.5
Delhi	12.0	14.8	40.5	44.3
Goa	27.1	27.9	36.4	38.0
Gujarat	37.0	36.3	46.3	55.3
Haryana	25.9	31.3	47.0	56.1
Himachal Pradesh	29.7	29.9	40.5	43.3
Jammu & Kashmir	26.4	24.6	58.7	52.1
Jharkhand	41.1	43.0	72.9	69.5
Karnataka	38.8	35.5	42.4	51.5
Kerala	18.7	18.0	22.7	32.8
Madhya Pradesh	38.2	41.7	54.3	56.0
Maharashtra	39.7	36.2	48.5	48.4
Manipur	18.8	14.8	28.9	35.7
Meghalaya	25.8	14.6	63.3	47.2
Mizoram	22.6	14.4	48.0	38.6
Nagaland	18.4	17.4	38.4	NA
Odisha	48.0	41.4	63.0	61.2
Pondicherry				
Punjab	16.9	18.9	41.4	38.0
Rajasthan	36.1	36.7	48.5	53.1
Sikkim	11.2	11.2	61.1	60.0
Tamil Nadu	29.0	28.4	56.5	53.2
Tripura	35.2	36.9	59.0	65.1
Uttar Pradesh	35.8	36.0	48.7	49.9
Uttarakhand	32.4	30.0	45.6	55.2
West Bengal	43.7	39.1	62.7	63.2
All India	35.8	35.6	51.8	55.3

Source NHFS-2 and NHFS-3

national average of 55.3 %. The position of Arunachal Pradesh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir and all Southern States is better.

To sum up, the nutritional status of population is linked with quality of life of its citizens. Better is the nutritional status of its citizens, better is the chance of its citizens to have improved quality of life. It is also linked with human development of its citizens as well. Human development is up-scaled by the quality of its nutritious citizens. Given such premises, it reveals from Tables, as above, that there is strong correlation between the size of population and the corresponding nutritional standard. The nutritional status in the states of India is poorer where the size of its population is also on higher side. It is akin to primary level arithmetic of dividing a cake by the number of children in the family. Nutritional status of the country in a way reflects the syndrome of its over populated size. However, this simple fact is seldom focused in any discourse on nutritional status of children or of others.

2.5 Unemployment scenario

From human development angle, access to gainful employment is an essential condition to earn livelihood and economic wellbeing. This is equivalent to exercising economic rights in a market economy. The nature of livelihood reflected through its employment is now the determining factor in shaping the pattern of population growth linked as it is with marriage and procreation. The size of unemployed population is linked with another fundamental aspect of the economy in that whether the country is in a position to make economic use of its population and sustain them. The declining trend of unemployment gives a signal that the country has reached somewhat at a level of its potential strength and it cannot absorb the current size of incremental unemployed population. The growing trend of unemployment status is decisively an indicator of un-sustained nature of population and a signal over population. It is also an emphatic signal that oft-quoted population dividend in India is confusing, misleading and inappropriate for any country struggling to reach full employment situation.

With the above premise in view, it would be worthwhile to examine the unemployment status of India in general and the states in particular through a series of self-spoken Tables. It starts with a Working paper of the Planning Commission.

The Working paper on Status of Employment made use of by the Planning Commission for formulating the Draft Twelfth Five Year Plan gives a state wise Employment status of our country for the year 2004–2005 and 2009–2010 as shown at Table 2.28.

As per the Report compiled from the NSS (66th round), list of Major States of India ranked according to unemployment published by the Ministry of Statistics and Programme Implementation, Government of India for the year 2009–2010 is also shown at Table 2.29. As per the said list, Kerala has the highest unemployment rates and ranks worst, while Rajasthan and Gujarat has the least unemployment rate among major States of India. Incidentally, a higher rank

Table 2.28 State wise Absolute Employees (in millions) by Major Sectors and Share of Employment (2004–2005 & 2009–2010)

States	Absolute employees in (millions) by major sectors 2004–2005 & 2009–2010									
	2004–2005					2009–2010				
	Agriculture	Manufacturing	Non-manufacturing	Services	Total of Sectors	Agriculture	Manufacturing	Non-manufacturing	Services	Total of Sectors
Andhra Pradesh	20.5	4.6	2.7	10.9	38.8	20.4	4.4	5.4	9.7	39.9
Assam	7.7	0.4	0.3	2.4	10.8	6.9	0.5	0.6	3.0	10.9
Bihar	21.3	1.4	0.9	4.3	27.8	17.2	1.4	2.9	5.5	26.9
Chhattisgarh	8.6	0.4	0.5	1.3	10.8	6.3	0.5	1.7	1.5	10.0
Delhi	0.1	1.3	0.3	3.5	5.2	0.0	1.6	0.3	4.0	5.9
Gujarat	15.7	3.2	1.3	5.1	25.3	12.9	3.4	1.8	6.6	24.7
Haryana	5.0	1.1	0.7	2.3	9.2	4.3	1.5	1.1	2.7	9.6
Himachal Pradesh	2.1	0.2	0.3	0.7	3.3	2.2	0.1	0.5	0.6	3.4
Jammu & Kashmir	2.8	0.4	0.3	0.7	4.3	2.9	0.4	0.4	1.0	4.7
Jharkhand	7.7	0.9	1.3	1.8	11.7	4.9	0.7	2.3	2.2	10.1
Karnataka	17.6	2.6	1.2	6.0	27.4	15.3	2.7	2.1	6.7	26.8
Kerala	5.1	1.7	1.5	4.4	12.7	4.2	1.6	2.1	5.1	12.9
Madhya Pradesh	18.0	2.5	1.5	6.3	28.2	18.4	1.8	4.0	4.4	28.5
Maharashtra	22.0	7.1	3.0	16.5	48.1	26.0	5.3	3.2	14.6	49.1
Odisha	11.2	1.5	1.1	2.9	16.7	10.1	1.4	2.0	2.8	16.2
Punjab	3.6	1.7	1.4	4.1	10.7	4.7	1.3	1.4	3.0	10.4
Rajasthan	17.4	2.2	2.5	4.4	26.5	13.0	1.6	7.4	5.2	27.2
Tamil Nadu	14.5	6.1	2.2	8.5	31.3	12.6	5.2	4.2	8.1	30.0

(continued)

Table 2.28 (continued)

States	Absolute employees in (millions) by major sectors 2004–2005 & 2009–2010									
	2004–2005					2009–2010				
	Agriculture	Manufacturing	Non-manufacturing	Services	Total of Sectors	Agriculture	Manufacturing	Non-manufacturing	Services	Total of Sectors
Uttar Pradesh	43.3	7.2	3.0	11.7	65.2	39.8	6.4	7.2	12.6	65.9
Uttarakhand	2.7	0.2	0.3	0.8	4.0	2.4	0.3	0.5	0.9	4.0
West Bengal	15.5	5.3	1.6	9.3	31.7	14.8	6.3	2.7	10.4	34.2
Total across states	262.5	52.7	27.9	107.7	449.6	236.1	48.1	56.8	110.4	451.4
States	Share of employees across sectors 2004–2005 & 2009–10									
	2004–2005					2009–2010				
	Agriculture	Manufacturing	Non-manufacturing	Services		Agriculture	Manufacturing	Non-manufacturing	Services	
Andhra Pradesh	52.8	11.9	7.0	28.1		51.2	11.0	13.5	24.3	
Assam	71.3	3.6	2.8	22.2		62.9	4.1	5.8	27.2	
Bihar	76.5	5.0	3.1	15.4		63.8	5.1	10.7	20.4	
Chhattisgarh	79.3	4.1	4.8	11.7		63.2	5.0	17.2	14.6	
Delhi	1.0	24.8	6.2	67.9		0.2	27.4	4.9	67.5	
Gujarat	62.1	12.6	5.1	20.2		52.2	13.7	7.3	26.8	
Haryana	54.8	12.2	7.8	25.2		44.8	15.4	11.9	27.9	
Himachal Pradesh	63.6	6.1	9.1	21.2		64.2	3.9	15.2	16.7	
Jammu & Kashmir	66.1	9.6	7.1	17.2		61.6	7.6	8.9	21.9	
Jharkhand	65.4	7.9	11.1	15.6		49.1	6.7	22.5	21.7	
Karnataka	64.4	9.4	4.4	27.7		57.3	9.9	7.7	25.1	
Kerala	40.1	13.5	11.6	34.8		32.1	12.4	16.3	39.2	(continued)

(continued)

Table 2.28 (continued)

States	Share of employees across sectors 2004–2005 & 2009–10							
	2004–2005				2009–2010			
	Agriculture	Manufacturing	Non-manufacturing	Services	Agriculture	Manufacturing	Non-manufacturing	Services
Madhya Pradesh	63.8	8.9	5.3	22.3	64.4	6.3	14.0	15.3
Maharashtra	45.7	14.8	6.2	34.3	52.9	10.8	6.3	29.8
Odisha	67.1	8.9	6.7	17.3	62.2	8.3	12.1	17.4
Punjab	33.6	15.9	13.1	38.3	45.0	12.7	13.2	29.1
Rajasthan	65.8	8.3	9.4	16.5	47.7	5.9	27.3	19.1
Tamil Nadu	46.4	19.6	7.0	27.1	41.8	17.2	14.0	27.0
Uttar Pradesh	66.4	11.1	4.6	17.9	60.4	9.6	10.9	19.1
Uttarakhand	68.6	4.3	7.5	19.6	60.5	6.3	11.8	21.4
West Bengal	49.0	16.7	50	29.2	43.4	18.4	7.9	30.3
Total across states								

Source Working Group on Twelfth Plan: Employment Planning Policy

Table 2.29 Unemployment rates-2009–2010

		Unemployment Rates-2009–2010 (per 1000)		
Rank	State	Rural	Urban	Total
14	Kerala	75	73	148
13	Bihar	20	73	93
12	Assam	39	52	91
11	Punjab	26	48	74
10	Odisha	30	42	72
9	Himachal Pradesh	16	49	65
8	West Bengal	19	40	59
**	All India	16	34	50
7	Tamil Nadu	15	32	47
6	Andhra Pradesh	12	31	43
6	Haryana	18	25	43
5	Uttar Pradesh	10	29	39
4	Maharashtra	6	32	38
3	Madhya Pradesh	7	29	36
2	Karnataka	5	27	32
1	Rajasthan	4	22	26
1	Gujarat	8	18	26

Source Ministry of Statistics and Programme Implementation, Government of India

represents higher unemployment among the population. National average stands at 50. This is shown at Table 2.29.

The Labour Bureau, Ministry of Labour & Employment, Government of India publishes state-specific data based on employment and unemployment survey conducted by it from time to time. The second employment and unemployment survey conducted in 2011–2012 reveals startling facts on employment and unemployment states of India. Data of a select States of India for Unemployment Rate (Per 1000) for Persons above 15 years & above according to usual participatory approach (ps) have been shown in Table 2.30.

The survey reveals that the lowest unemployment rate was in Gujarat while the largest numbers of unemployed persons were found in Kerala and West Bengal. The All-India unemployment rate was estimated at 3.8 % while the All India female unemployment rate was of 6.9 %. The report also revealed the fact that Gujarat has got very low female unemployment rate while Sikkim, Tripura and West Bengal had highest unemployment rates.

The third Annual Employment and Unemployment Survey for 2012–2013, pegged the all-India unemployment rate at 4.7 % in 2012–2013 with urban unemployment at 5.7 % and rural employment at 4.4 %. The unemployment rate amongst workers between 15 and 29 years was, however, pegged at 13.3 %. The survey also revealed that unemployment rate per 1000 persons aged more than

Table 2.30 Unemployment Rate (Per 1000) for Persons above 15 years & above according to usual participatory approach (ps) for each state

Sl. no	States	Rural			Urban			Rural + Urban		
		Male	Female	Person	Male	Female	Person	Male	Female	Person
1	Andhra Pradesh	21	24	22	46	111	61	27	35	30
2	Arunachal Pradesh	40	86	56	99	252	142	47	101	65
3	Assam	48	128	62	44	206	73	47	138	63
4	Bihar	59	205	85	45	181	64	58	203	83
5	Chhattisgarh	11	6	9	27	59	35	13	11	12
6	Delhi	25	175	45	32	149	49	31	153	48
7	Goa	94	549	231	62	290	109	80	462	179
8	Gujarat	5	13	7	12	42	15	8	8	10
9	Haryana	26	71	30	24	120	36	25	88	32
10	Himachal Pradesh	41	12	28	38	130	63	40	17	31
11	Jammu & Kashmir	33	157	50	44	260	71	36	182	56
12	Jharkhand	37	89	47	50	120	59	39	93	48
13	Karnataka	24	21	23	27	35	29	25	24	25
14	Kerala	32	214	82	40	375	145	34	262	99
15	Madhya Pradesh	18	28	20	44	96	51	24	37	27
16	Maharashtra	19	26	21	23	107	42	20	47	28
17	Manipur	25	23	24	87	65	80	39	34	37
18	Meghalaya	24	40	31	42	100	64	27	49	36
19	Mizoram	10	9	10	8	119	43	10	32	19
20	Nagaland	65	48	59	63	72	65	65	52	60
21	Odisha	28	29	28	36	107	43	29	34	30
22	Punjab	13	66	17	13	86	21	13	74	18
23	Rajasthan	12	30	16	16	64	20	13	33	17
24	Sikkim	82	163	113	105	511	229	85	194	126
25	Tamil Nadu	19	24	21	19	41	25	19	29	22
26	Tripura	47	310	115	139	446	236	66	344	141
27	Uttarakhand	35	108	55	21	142	40	32	113	52
28	Uttar Pradesh	22	33	23	32	71	35	24	40	25
29	West Bengal	43	159	61	89	402	139	53	212	78
	All India	27	56	34	34	125	50	29	69	38

Source Report on Employment and Un-employment Survey-2011–2012

15 years was highest in Sikkim at 136, followed by Arunachal Pradesh at 130, Tripura at 126, Goa at 107 and Kerala at 104. In contrast, Chhattisgarh had the lowest unemployment rate of 14, followed by Karnataka at 20, Madhya Pradesh at 22, Andhra Pradesh at 25 and Gujarat at 27 (Table 2.31).

To sum it up, in brief, the above Survey Tables indicate that the country is unable to make full use of its growing labour force in productive and gainful employment. The unsustainable size of population and its overtime growth has been reflected in all Annual Employment and Unemployment Surveys indicating therein the limits of absorbing potential of the economy to sustain them. Truly, the population of India is too large to secure full employment.

2.6 Human development profile

The concept of human development is a paradigm shift to development assessment. The objective of human development is to create an enabling environment for people to enjoy long, healthy and creative lives. An index, called the Human Development Index (HDI) has come into being as an alternative to the common practice of evaluating a country's progress in development based on per capita Gross Domestic Product. HDI is a summary measure of human development and is worked through a composite statistics of life expectancy, education and income indices. Human Development Report captures the HDI of the country and its overtime reports reveal the trend of such human development. The Human Development Report in India was first published in 2001, a summary position of which is shown in Table 2.32.

The HDI for the country as whole has increased to 0.470 in 2001 from 0.302 in 1981. For the States, it varies between 0.638 for Kerala to 0.365 in case of Bihar. Among better of States, Punjab, Tamil Nadu and Maharashtra had a HDI value of above 0.52. At the other hand, the States like Uttar Pradesh, Assam and Madhya Pradesh had value less than 0.400. By and large States maintained their relative position between 1981 and 2001.

The India Human Development Report 2011, prepared by Institute of Applied Manpower Research, was published by the Planning Commission. It captured state wise Human Development scenario from 1999–2000 to 2007–2008 as could be seen in Table 2.33.

India Human Development Report 2011, as shown at Table 2.33 estimated the HDI for the beginning of the decade, and for the latest year for which data were available for preparing the Report. The top five ranks in both the years are captured by the states of Kerala, Delhi, Himachal Pradesh, Goa and Punjab. It further appeared that States that perform better on health and educational outcomes are also the states with higher HDI and of higher per capita income. West Bengal's position is far from worth mentioning. It continues to remain at rank 13 in the all India position while even the seven north eastern states (excluding Assam) 1 have done

Table 2.31 Unemployment Rate (Per 1000) for Persons above 15 years& above according to usual participatory approach (ps) for each state

Sl. no	States	Rural			Urban			Rural +Urban		
		Male	Female	Person	Male	Female	Person	Male	Female	Person
1	Andhra Pradesh	21	15	19	31	88	44	24	27	25
2	Arunachal Pradesh	120	148	130	88	262	128	114	159	130
3	Assam	46	142	61	63	244	97	48	154	65
4	Bihar	54	106	60	54	145	58	54	107	60
5	Chhattisgarh	8	11	9	23	106	40	11	21	14
6	Delhi	73	409	115	40	128	51	43	154	57
7	Goa	39	243	93	55	289	123	46	265	107
8	Gujarat	13	72	24	15	166	32	14	94	27
9	Haryana	44	67	46	36	149	52	41	96	48
10	Himachal Pradesh	49	83	63	34	153	60	47	87	63
11	Jammu & Kashmir	67	210	83	67	282	101	67	234	88
12	Jharkhand	77	131	87	77	184	88	77	136	87
13	Karnataka	16	20	17	13	69	27	15	34	20
14	Kerala	46	242	102	44	274	110	45	251	104
15	Madhya Pradesh	18	14	17	29	86	39	21	25	22
16	Maharashtra	29	26	28	41	96	52	33	43	36
17	Manipur	29	44	33	25	52	32	28	46	32
18	Meghalaya	19	34	25	102	150	121	37	60	46
19	Mizoram	35	35	35	28	13	22	32	24	29
20	Nagaland	54	102	70	71	116	85	58	105	73
21	Odisha	48	62	51	70	243	93	51	76	56
22	Punjab	22	166	40	46	153	61	32	160	48
23	Rajasthan	27	29	27	40	103	48	30	41	32
24	Sikkim	113	184	134	97	295	147	110	204	136
25	Tamil Nadu	30	43	34	31	83	44	30	55	38
26	Tripura	78	244	111	133	341	194	87	268	126
27	Uttarakhand	50	46	49	35	340	81	46	106	57
28	Uttar Pradesh	52	97	56	68	232	82	55	125	61
29	West Bengal	63	122	73	58	180	75	62	133	74
	All India	40	58	44	42	128	57	40	72	47

Source The third Annual Employment and Unemployment Survey for 2012–2013

Table 2.32 Human Development Index for India-combined

Human development index for india-combined						
States	1981 value	1981 rank	1991 value	1991 rank	2001 value	2001 rank
Andhra Pradesh	0.298	9	0.377	9	0.416	10
Assam	0.272	10	0.348	10	0.386	14
Bihar	0.237	15	0.308	15	0.367	15
Gujarat	0.360	4	0.431	6	0.479	6
Haryana	0.360	5	0.443	5	0.509	5
Karnataka	0.346	6	0.412	7	0.478	7
Kerala	0.500	1	0.591	1	0.638	1
Madhya Pradesh	0.245	14	0.328	13	0.394	12
Maharashtra	0.363	3	0.452	4	0.523	4
Orissa	0.267	11	0.345	12	0.404	11
Punjab	0.411	2	0.475	2	0.537	2
Rajasthan	0.256	12	0.347	11	0.424	9
Tamil Nadu	0.343	9	0.466	3	0.531	3
Uttar Pradesh	0.255	13	0.314	14	0.388	13
West Bengal	0.305	8	0.404	8	0.472	18
All India	0.302		0.381		0.472	

Source Human Development Report, India, 2001

Note The HDI for 2001 has been estimated only for a few selected States for which some data, including the Census 2001 was available

Table 2.33 Human development scenario of India from 1999–2000 to 2007–2008

State	HDI (1999– 2000)	HDI (2007– 2008)	Rank (1999– 2000)	Rank (2007– 2008)
Kerala	0.677	0.790	2	1
Delhi	0.783	0.750	1	2
Himachal Pradesh	0.581	0.652	4	3
Goa	0.595	0.617	3	4
Punjab	0.543	0.605	5	5
North Eastern States (excluding Assam)	0.473	0.573	9	6
Maharashtra	0.501	0.572	6	7
Tamil Nadu	0.480	0.570	8	8
Haryana	0.501	0.552	7	9
Jammu & Kashmir	0.465	0.529	11	10
Gujarat	0.466	0.527	10	11
Karnataka	0.432	0.519	12	12
West Bengal	0.422	0.492	13	13

Source HDR of India, 2011

Table 2.34 Forest cover in states in India (in sq.km)

Sl. No.	States	Geographical area	Forest coverage areas				
			Very dense forest	Moderately dense forest	Open forest	Total forest area	Percentage of G.A
1	Andhra Pradesh	275,069	850	26,242	19,297	46,389	16.86
2	Arunachal Pradesh	83,743	20,868	31,519	15,023	67,410	80.5
3	Assam	78,438	1444	11,404	14,825	27,673	35.28
4	Bihar	94,163	231	3280	3334	6845	7.27
5	Chhattisgarh	135,191	4163	34,911	16,600	55,674	41.18
6	Delhi	1483	6.76	49.48	119.96	176.2	11.88
7	Goa	3702	543	585	1091	2219	59.94
8	Gujarat	196,022	376	5231	9012	14,619	7.46
9	Haryana	44,212	27	457	1124	1608	3.64
10	Himachal Pradesh	55,673	3224	6381	5074	14,679	26.27
11	Jammu & Kashmir	222,236	4140	8760	9639	22,539	10.14
12	Jharkhand	79,714	2590	9917	10,470	22,977	28.82
13	Karnataka	191,791	1777	20,179	14,238	36,194	18.87
14	Kerala	38,863	1442	9394	6464	17,300	44.52
15	Madhya Pradesh	308,245	6640	34,986	36,074	77,700	25.21
16	Maharashtra	307,713	8736	20,815	21,095	50,646	16.46
17	Manipur	22,327	730	6151	10,209	17,090	76.54
18	Meghalaya	22,429	433	9775	7067	17,275	77.02
19	Mizoram	21,081	134	6086	12,897	19,117	90.68
20	Nagaland	16,579	1293	4931	7094	13,318	80.33
21	Odisha	155,707	7060	21,366	20,477	48,903	31.41
22	Pondicherry	480	0	35.37	14.69	50.06	10.43
23	Punjab	50,362	0	736	1028	1764	3.5
24	Rajasthan	342,239	72	4448	11,567	16,087	4.7
25	Sikkim	7096	500	2161	698	3359	47.34
26	Tamil Nadu	130,058	2948	10,321	10,356	23,625	18.16
27	Tripura	10,486	109	4686	3182	7977	76.07
28	Uttar Pradesh	240,928	1626	4559	8153	14,338	5.95
29	Uttarakhand	53,483	4762	14,167	5567	24,496	45.8
30	West Bengal	88,752	2984	4646	5365	12,995	14.64
	All India	3,287,263	83,471	320,736	287,820	692,027	21.05

Source India State of Forest Report 2011

Table 2.35 State wise percentage of forest to total geographical area (1995–2011)

Sl. No	States	1995	1997	1999	2001	2003	2005	2007	2011 ^a
1	Andhra Pradesh	23.17	23.2	23.2	23.2	23.2	23.2	23.2	16.86
2	Arunachal Pradesh	61.55	61.55	61.55	61.55	61.55	61.55	61.55	80.5
3	Assam	39.15	39.15	39.15	34.45	34.45	34.21	34.21	35.28
4	Bihar	16.81	16.81	16.81	6.45	6.87	6.87	6.87	7.27
5	Chhattisgarh				43.85	44.21	44.21	44.21	41.18
6	Delhi	2.83	2.83	5.73	5.73	5.73	5.73	5.73	11.88
7	Goa	32.93	37.34	37.34	33.07	33.06	33.06	33.06	59.94
8	Gujarat	9.89	9.89	9.89	9.69	9.75	9.67	9.66	7.46
9	Haryana	3.82	3.78	3.78	3.51	3.52	3.53	3.53	3.64
10	Himachal Pradesh	67.52	63.6	63.6	66.52	66.52	66.52	66.52	26.37
11	Jammu & Kashmir	9.08	9.08	9.08	9.1	9.1	9.1	9.1	10.14
12	Jharkhand				29.61	29.61	29.61	29.61	28.82
13	Karnataka	20.15	20.19	20.19	20.19	22.46	19.96	19.96	18.87
14	Kerala	28.88	28.87	28.87	28.87	28.99	28.99	28.99	44.52
15	Madhya Pradesh	35.07	34.84	34.84	30.89	30.89	30.72	30.72	25.21
16	Maharashtra	20.75	20.8	20.8	20.13	20.13	20.13	20.13	16.46
17	Manipur	67.87	67.87	67.87	78.01	78.01	78.01	78.01	76.54
18	Meghalaya	42.34	42.34	42.34	42.34	42.34	42.34	42.34	77.02
19	Mizoram	75.59	75.59	75.59	75.59	79.3	79.3	79.3	90.68
20	Nagaland	52.02	52.05	52.05	52.05	50.05	52.05	55.62	80.34
21	Odisha	36.73	36.73	36.73	37.34	37.34	37.34	37.34	31.41
22	Punjab	5.64	5.76	5.76	6.07	6.12	6.12	6.07	3.5
23	Rajasthan	9.22	9.26	9.26	9.49	9.49	9.49	9.54	4.7
24	Sikkim	37.34	37.34	37.34	81.24	82.31	82.31	82.31	47.34
25	Tamil Nadu	17.45	17.4	17.4	17.59	17.59	17.59	17.59	18.11
26	Tripura	60	60.01	60.01	60.01	60.01	60.02	60.02	76.07
27	Uttar Pradesh	17.49	17.55	17.55	6.98	6.98	6.97	6.88	5.95
28	Uttarakhand				64.81	64.81	64.79	64.79	45.8
29	West Bengal	13.38	13.38	13.38	13.38	13.38	13.38	13.38	14.64
	All India	23.36	23.28	23.28	23.38	23.57	23.41	23.41	21.05

Source Compendium of Environment Statistics, 2011, India State of Forest Report, 2011

^a2011 figures corresponds to forest cover

remarkably well in human development outcomes to climb up three rungs from 1999–2000 to 2007–2008.

The moot point for bringing human development in the discourse is that huge load of population of India stands in the way of achieving desired scale of human development in meeting essential requisites for people to enjoy long, healthy and

Table 2.36 Water resources of India at a glance

Estimated annual precipitation (including snowfall)	4000 km ³
Run-off received from upper riparian countries	(Say) 500 km ³
Average annual natural flow in rivers and aquifers.	1869 km ³
Estimated utilisable water	1123 km ³
(i) Surface	(i) 690 km ³
(ii) Ground	(ii) 433 km ³
Water demand \approx utilization (for year 2000)	634 km ³
(i) Domestic	(i) 42 km ³
(ii) Irrigation	(ii) 541 km ³
(iii) Industry, energy and others	(iii) 51 km ³

Source Comprehensive Mission Document of National Water Mission, India

creative lives. As a result, the country continues to have relatively low HDI, and the prospect of better HDI score for such huge mass of population has become rather impossible. Huge size of population is a permanent drag on any developmental efforts, including Human Development, in India.

2.7 Resources scenario

Natural resources are provided by the Mother Earth to make the earth system liveable for all its creatures. Such natural resources can be classified under biotic and abiotic. Biotic resources originate from living things or organic materials such as plants, animals, and fossil fuels whereas abiotic resources include nonliving and inorganic materials such as air, sunlight, and water. Minerals (gold, copper, iron, diamonds etc.) are also considered abiotic. Renewable resources are those natural resources that are liable to be replenished after its use. The sun and wind are replenished by the Earth system as a part of its natural order. On the other hand, plants and water can be replenished by judicious use of such assets, by its conservation and replanting, and making optimum use of water resources and allowing replenishable time of ground level water- recharging. In this section, among the biotic and non-biotic resources, only two items are taken up hereunder, namely Forests Resources and Water Resources for understanding the current status in our country.

2.7.1 Forests Resources

The Proportion of land area covered by forest is a strong indicator on environmental sustainability. On it also depends how efficiently the effects of climate change can be mitigated. Additionally, it helps to improve water security, safeguards rich biodiversity and provides livelihood security for large number of people. As per

2011 assessment, the Country has a forest cover of 692,027 km², which is 21.05 % of the Country's geographical area. Incidentally, the forest cover (revised) estimate for 2009 shows total forest cover of 692,394 km² which indicates a decline of 367 km² in 2011. The quality of forest coverage area depends on dense forest, moderately dense forests and open forests and extent of such coverage. At Table 2.34, the forests coverage and per cent of forest coverage over the years respectively in the States of India have been shown:

Table 2.35 reveals the declining trend of forest coverage in the States of India being factored, among other things, by the encroachment of increasing human habitation to accommodate surging human population and also due to non-availability of 'spare able' land for spurting new forest growth and coverage. Thus, the prospect of growth elasticity of forestry in the States of India is shockingly negative and with annual addition of human number the status of forest cover would change from bad to worse.

2.7.2 *Water Resources*

'The main water resources of India consists of the precipitation on the Indian territory which is estimated to be around 4000 km³/year, and trans-boundary flows which it receives in its rivers and aquifers from the upper riparian countries. Out of the total precipitation, including snowfall, the availability from surface water and replenishable groundwater is estimated as 1869 km³. Due to various constraints of topography, uneven distribution of resource over space and time, it has been estimated that only about 1123 km³ including 690 km³ from surface water and 433 km³ from groundwater resources can be put to beneficial use.

Precipitation over a large part of India is concentrated in the monsoon season during June to September/October. Precipitation varies from 100 mm in the western parts of Rajasthan to over 11,000 mm at Cherrapunji in Meghalaya (Table 2.36).

There takes place extreme natural occurrences in the country—floods are followed by droughts and in some cases they exist simultaneously in different locations of the country. Due to excess rainwater, floods occur in certain parts. It has been estimated by RashtriyaBarhAyog (RBA) that 40 mha of area is flood-prone and this constitute 12 % of total geographical area of the country. Droughts are also experienced due to deficient rainfall. It has been found that 51 mha area is drought prone and this constitute 16 % of total geographical area.

This availability of water resources is impacted by the growing population of the country. Accordingly, the per capita availability of water for the country as a whole has decreased from 5177 m³/year in 1951–1654 m³/year in 2007. Due to spatial variation of rainfall, the per capita water availability also varies from basin to basin. The distribution of water resources potential in the country shows that the average per capita water availability in Brahmaputra & Barak basin was about 14,057 m³/year whereas it was 308 m³/year in Sabarmati basin in year 2000. Meanwhile, with

ongoing climatic change and the increasing size of population, the prospect of water resources h

as gone down substantially Further, in the context of projected population size of India being 1.39 billion in 2025 and 1.80 billion in 2050 along with emerging high intensity impact of climatic change, the prospect for water availability would be fearsome for multiple needs for development and per capita human needs for domestic use.

2.8 Environmental and Climatic scenario

Human population growth is a major contributor to global warming. The use of fossil and its increasing use shape up the lifestyles of growing number of population which is indeed alarming. The large number of population means more demand for oil, gas, coal and other fuels from below the Earth's surface. When those are mined, drilled and then burned, increasing volume of carbon dioxide (CO₂) is spewed into the atmosphere to trap warm air inside like a greenhouse.

As per the estimate of the United Nations Population Fund, with 6.1 billion people during the course of the 20th century. Emissions of CO₂, the leading greenhouse gas, grew 12-fold and with worldwide population expected to surpass nine billion over the next 50 years, environmentalists and others are worried about the ability of the planet to withstand the added load of greenhouse gases entering the atmosphere and wreaking havoc on ecosystems down below.

Though developed countries consume the lion's share of fossil fuels right at the present moment, fast-growing developing countries will contribute significant proportion of global CO₂ emissions by 2050. It is widely believed that, just like China, India with its massive population size and significant growth rates will also become very active contributors in magnifying the impacts of global warming. Incidentally as per estimate of National Population Fund, India will have 1.80 billion people by 2050 and will surpass the estimated population size of China of 1.42 billion in 2050. The increasing size of population along with significant growth rate will alter the status of contribution of CO₂ emissions of India. There is imperative need to minimize the damage making potential of CO₂ emission by India and the country needs to undertake harsh measures to check the rush of population numbers to assume a responsible role in the management of global Environmental and Climatic change scenario.

The Ministry of Environments and Forests, Government of India released its greenhouse gas inventory of 2007 emissions recently, making it the first developing country to publish such emissions data. The released emissions data was based on 1994 figures. Since then, India's emissions have grown at an average annual rate of 3.3 per cent, increasing from 1.25 billion tons in 1994 to 1.9 billion tons in 2007. The report analysed emissions from electricity use, transportation, agriculture, and land use change. Land use serves as a net carbon sink in India, in contrast to many developing countries where deforestation is a major source of emissions. India is

now the world's fifth-largest emitter of greenhouse gases, ranking behind China, the United States, the European Union, and Russia. When releasing the data, the former Environment Minister, however, had pointed out that India's emissions are still one-quarter of those of the top emitters, the United States and China. He had further highlighted that in the same period, from 1994 to 2007, India reduced the emissions intensity of its economy by 30 per cent. Be that as it may, unless India reduces emissions intensity by a further 20–25 % between 2005 and 2020, the position indeed would be very bleak. It thus sends a clear message that India has to make a very serious effort on population stabilization front and arrest its runaway population size and growth in order to minimise the demand pull factor to increased use of oil, gas, coal and other fuels from below the Earth's surface.



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