INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES
(Deemed University)

Number 6
December 2008

IIPS RESEARCH BRIEF

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Population, Poverty and Environment in India

Dewaram A. Nagdeve

Rapid population growth and poverty in a country deplete its natural resources and degrade the environment. Though their relationship is complex, population size and growth tend to expand and accelerate these human impacts on the environment. The growing population and its consequent demand for food, energy, and housing have considerably altered land-use practices and severely degraded India's forest vis-à-vis environment. In view of this, there is a need to formulate decisive policies and important workable programmes to slow down population growth, combat poverty and check degradation of the environment.

Objectives of the study:

* To study the changes in population and poverty in India and its states, over the decades.

* To highlight the extent of environmental degradation in India.

Data Sources:

The data from various secondary sources have been analyzed to study the changes and trends from 1971 to 2001.

I. Population Growth in India

The population trend shows that India's population doubled in just three decades. The population has been increasing at more than a desirable rate in most of the states. Wide variations have also been observed in the growth of population among states. Though the growth rate appears to have stopped increasing in some states, its level is still quite high. The five states, Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh constitute nearly 44 percent of the total population of India. The percentage share of population in Gujarat, Haryana, Jammu and Kashmir, Maharashtra, Manipur, Meghalaya, Nagaland, Rajasthan, Tripura and Uttar Pradesh have increased from 1971 to 2001, whereas the percentage share of other states declined during 1971-2001. A comparative look at the growth of rural and urban population in India over these years reveals that the urban population is growing at a much faster rate as compared to the rural population. The highest percentage of rural population was found in Himachal Pradesh and Sikkim whereas the lowest percentage of the rural population was found in Goa and Mizoram. The percentage of decadal growth rate has registered a sharp decline from 1961-71 to 1991-2001. Kerala and two other major states in Southern India, Tamil Nadu and Andhra Pradesh, reported low growth rates during 1991-2001. The slum population in the country increased considerably from 1981 to 2001. There has been an increase in the population density in all the states and the average population density at the national level has increased by more than double in the last three decades. West Bengal is having the highest population density whereas Arunachal Pradesh is having the lowest.. Population density in Bihar, Haryana, Kerala, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal is also very high (more than 400 persons per square Km.).

II. Poverty in India

In India, the proportion of people living below poverty line has declined from 55 percent in 1973 to 26 percent in 1999-2000. Nineteen states and union territories have a lower percentage of population living below poverty line, whereas thirteen states and union territories have a higher percentage of population below poverty line than the national average. There are wide inter-state variations in poverty ratios of different

Table 1: Percentage of population living below poverty line in India and States: 1973-74 to 1999- 2000.

STATE/UTs	1973-74	1977-78	1983-84	1987-88	1993-94	1999-2000
Andhra Pradesh	48.86	39.31	28.91	25.86	22.19	15.77
Arunachal Pradesh	51.93	58.32	40.68	36.22	39.35	33.47
Assam	51.21	57.15	40.47	36.21	40.86	36.09
Bihar	61.91	61.55	62.22	52.13	54.96	42.60
Goa	44.26	37.23	18.90	24.52	14.92	4.40
Gujarat	48.15	41.23	32.79	31.54	24.21	14.07
Haryana	35.36	29.55	21.37	6.54	25.05	8.74
Himachal Pradesh	26.39	32.45	16.40	15.45	28.44	7.63
Jammu & Kashmir	40.83	38.97	24.24	23.82	25.17	3.48
Karnataka	54.47	48.78	38.24	37.53	33.16	20.04
Kerala	59.79	52.22	40.42	31.79	25.43	12.72
Madhya Pradesh	61.78	61.78	49.78	43.07	42.52	37.43
Maharashtra	53.24	55.88	43.44	40.41	36.86	25.02
Manipur	49.96	53.72	37.02	31.35	33.78	28.54
Meghalaya	50.20	55.19	38.81	33.92	37.92	33.87
Mizoram	50.32	54.38	36.00	27.52	25.66	19.47
Nagaland	50.81	56.04	39.25	34.43	37.92	32.67
Orissa	66.18	70.07	65.29	55.58	48.56	47.15
Punjab	28.15	19.27	16.18	13.20	11.77	6.16
Rajasthan	46.14	37.42	34.46	35.15	27.41	15.28
Sikkim	50.86	55.89	39.71	36.06	41.43	36.55
Tamil Nadu	54.94	54.79	51.66	43.39	35.03	21.12
Tripura	51.00	56.88	40.03	35.23	39.01	34.44
Uttar Pradesh	57.07	49.05	47.07	41.46	40.85	31.15
West Bengal	63.43	60.52	54.85	44.72	35.66	27.02
Andman & Nicobar Islands	55.56	55.42	52.13	43.89	34.47	20.99
Chandigarh	27.96	27.32	23.79	14.67	11.35	5..75
Dadra & Nagar Haveli	46.55	37.20	15.67	67.11	50.84	17.14
Daman & Diu	NA	NA	NA	NA	15.80	4.44
Delhi	49.61	33.23	26.22	12.41	14.69	8.23
Lakshadweep	59.68	52.79	42.36	34.95	25.04	15.60
Pondicherry	53.82	53.25	50.06	41.46	37.40	21.67
INDIA	54.88	51.32	44.48	38.86	35.97	26.1

Source: Planning Commission Estimates.
Note: 1. Poverty Ratio of Assam is used for Sikkim, Aruanchal Pradesh, Meghalaya, Manipur, Nagaland, and Tripura.
Poverty line of Maharashtra and expenditure distribution of Goa is used to estimate Poverty Ratio of Goa.
3.Poverty line of Himachal Pradesh and expenditure distribution of Jammu and Kashmir is used to estimate poverty ratio of Jammu and Kashmir.
4.Poverty Ratio of Tamil Nadu is used for Pondicherry and A & N Islands.
5.Urban Poverty Ratio of Punjab used for both rural and urban poverty estimates of Chandigarh.
6.Poverty Ratio of Goa is used for Daman and Diu.
7.Poverty ratio of Kerala is used for Lakshadweep.
8.Urban poverty ratio of Rajasthan for the year 1999- 2000 may be treated as tentative.
9.Poverty Ratio of Himachal Pradesh is used for Jammu and Kashmir for 1993-94.

states. The poverty ratio in Orissa is about eight times than that of Punjab. Almost half the population in Orissa and Bihar lives below poverty line. However, the different levels of poverty in these states have, indicated varying rates of decline. The highest percentage of population below poverty line found in Orissa, Bihar and Madhya Pradesh whereas the lowest percentage of population below poverty line found in Jammu and Kashmir, Goa, Punjab, Himachal Pradesh and Haryana. States like West Bengal and Kerala have seen tremendous improvements in poverty reduction over the period. Haryana, Himachal Pradesh and Punjab have also experienced significant gains in poverty reduction (Table 1). Noteworthy is the case of Kerala, which from an initial position among the high poverty ratio states has recorded a decline to be amongst the states with a very low percentage of population below poverty line. West Bengal, Orissa, Bihar and Madhya Pradesh had more than 60 percent of rural population living below poverty line.

The rural poverty ratio is higher than the urban poverty ratio for all states except Uttar Pradesh, Andhra Pradesh, Gujarat, Haryana, Kerala and Rajasthan. An interesting trend that emerges between 1993-94 and 1999-2000 is that rural poverty decreased much faster than that of urban poverty for most states. Orissa now has the maximum rural poverty, followed by Bihar. West Bengal registered a steep decline in both rural and urban poverty. The northeastern states have also recorded improvement in urban poverty ratios. Among the states with the relatively lower levels of rural poverty ratio in 1999-2000 are Haryana, Himachal Pradesh, Punjab, Goa, Chandigarh and Delhi.

III. Water, Sanitation and Electricity Facilities

Inadequate water and sanitation coverage is one of the most serious environmental problems. Access to safe drinking water, toilet and electricity facilities in many households is non-existent or inadequate. The percentage of households having access to safe drinking water in rural and urban households increased during 1981-1991. The situation in rural areas is much worst. Only 27 percent of households are having toilet facilities, in 1991. More than 90 percent rural households and 36 percent of urban households are not having toilet facilities. The households having toilet facilities in different states vary considerably. The urban areas are having better toilet facilities as compared to rural areas. Only in 8 states, more than 20 percent of households having toilet facilities in rural areas. In almost all the states and union territories, more than 50 percent of households in urban areas are having toilet facilities. This clearly indicates that sanitation facilities are inadequate or non-existent in rural India. There are better electricity facilities in urban areas as compared to rural areas. In 1991, 42 percent of households are having electricity facilities, out of which 76 percent in urban areas and 31 percent in rural areas. There are inter-state variations in the proportion of households having electricity facilities. During the year 1991,

the distributions of households having electricity was highest in the state of Jammu and Kashmir and Punjab. However, in these states the distribution of households having electricity was concentrated in urban areas.

IV. Environmental Degradation in India

Rapid population growth continues to be a matter of concern as it has manifold effects, most important being urbanization, poverty, deforestation and soil erosion. The increased demands lead to extensification and intensification of land use, which may ultimately lead to deforestation, decline in pastures and grazing lands, depletion of land resources, and land degradation. With increasing urbanization and industrialization, demand for transport has also increased consequently. The highest number of vehicles were registered in Maharashtra followed by Gujarat, Uttar Pradesh, Tamil Nadu and Delhi during 1999-2000. The contribution of two wheelers is highest in registered vehicles followed by cars/jeeps/taxis/buses and goods vehicles. This has resulted in a tremendous increase in vehicular traffic, resulting in greater congestion, air and noise pollution, and health problems. Continued urban expansion and population growth, expected to result in exacerbated problems of waste disposal, water quality and air pollution. Energy production and consumption has increased steadily in India since 1950. The per capita consumption of electricity in India has increased more than 4 times during 1970-71 to 1999-2000, though majority of the population still uses firewood as fuel for cooking purposes followed by the cow dung. The land for non-agricultural uses (housing, industry and others) has increased from 16.5 million hectares in 1971 to 23.3 million hectares in 2000. About 19 million hectares are snow bound and remote, leaving only 264 million hectares for agriculture, forestry, pasture and other biomass production. Net sown area has increased marginally from 140 million hectares in 1970-71 to 141 million hectares in 1999-2000. Over the past thirty years, while India's total population almost doubled, the total gross cropped area increased by only 24.5 million hectares in 2000. Despite past expansion of the area under cultivation, less agricultural land is available to feed each person in India. Population growth has resulted in a downward trend in per capita availability of forest and agricultural land. Per capita availability of forests in India is 0.07 hectares, which is much lower than the world average of 0.8 hectares (Figure-1). The growing population put immense pressure on land extensification at the cost of forests and grazing lands. Gujarat, Haryana, Punjab, Rajasthan, West Bengal and Delhi were found to have a less than 15 percent of area as forests. Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Manipur, Tamil Nadu and Uttar Pradesh were found to have 16 to 30 percent of land cover as forests whereas other states and union territories were having more than 30 percent of forests. Water and wind erosion is a major contributor to 141 million hectares of soil erosion, with other factors like water logging (8.5 million hectares), alkali soil (3.6 million hectares), acidic soil (4.5 million hectares), saline soil including coastal sandy areas (5.5 million hectares) adding to the degradation.

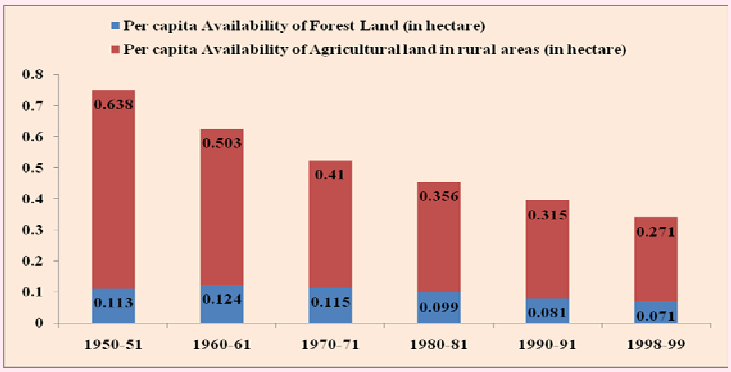


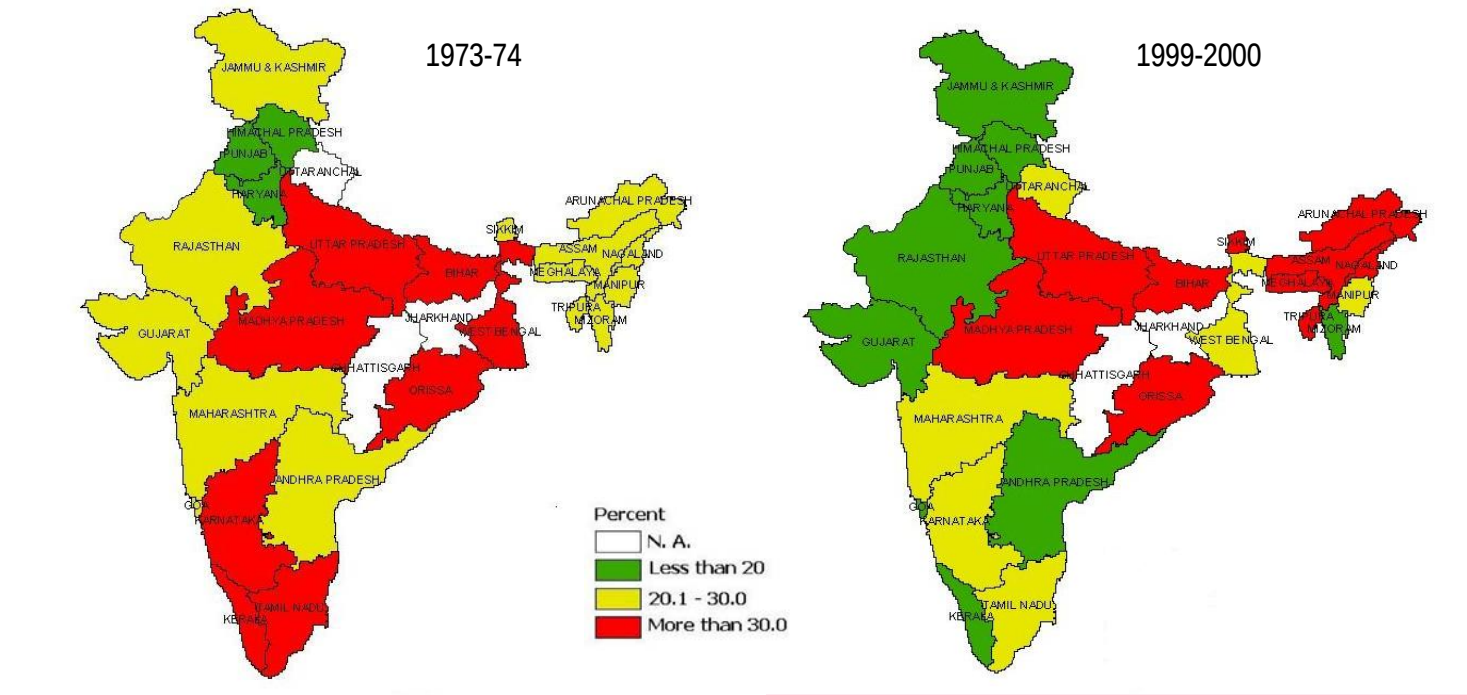
Figure 1: Per capita availability of forest and agricultural land.

Table 2 : Land use pattern in India, 1951-2000

CLASSIFICATION	1950-51	1960-61	1970-71	1980-81	1990-91	1999-2000@
I. Geographical area	328.7	328.7	328.7	328.7	328.73	328.73
II.Reporting area for land utilization statistics (1 to 5)	284.32	298.46	303.76	304.15	304.86	306.05
1. Forests	40.48	54.05	63.91	67.47	67.8	69.02
2.Not available for cultivation (a+b)	47.52	50.75	44.64	39.62	40.48	42.40
(a) Non- agricultural uses	9.36	14.84	16.48	19.66	21.09	22.45
(b) Barren and unculturable land	38.16	35.91	28.16	19.96	19.39	19.09
3. Other uncultivated land (excluding fallow land) (a+b+c)	49.45	37.64	35.06	32.31	30.22	28.47
(a) Permanent pasture and other grazing land	6.68	13.97	13.26	11.97	11.4	11.04
(b) Land under miscellaneous tree crops and grooves not included in net area sown	19.83	4.46	4.3	3.6	3.82	3.61
(c) Culturable wasteland	22.94	19.21	17.5	16.74	15	13.82
4. Fallow land (a+b)	28.12	22.82	19.88	24.75	23.36	24.91
(a) Fallow land other than current fallows	17.44	11.18	8.76	9.92	9.66	10.11
(b) Current fallows	10.68	11.64	11.12	14.83	13.7	14.80
5. Net area sown	118.75	133.2	140.27	140	143	141.23
6. Gross cropped area	131.89	152.77	165.79	172.63	185.74	189.74
7. Area sown more than once	13.14	19.57	25.52	32.63	42.74	48.51
8. Cropping intensity*	110.1	114.7	118.2	123.3	129.9	134.34
III Net irrigated area	20.85	24.66	31.1	38.72	47.78	57.23
IV Gross irrigated area	22.56	27.98	38.19	49.78	62.47	77.99

Source: Compendium of Environment Statistics, 2000.
Note: @ Statistical Abstract of India, 2002 * :Cropping Intensity is obtained by gross cropped area by net area sown

Figure 2. Percentage of population living below poverty line in Indian states, 1973-74 to 1999- 2000.



V. Conclusions and Policy Implications

The poverty and rapid population growth are found to co-exist and seems to reinforce each other. It also contributes to environmental degradation through over exploitation of natural resources. The effects of population growth and poverty on environmental problems are associated with changing consumption pattern, rising demand for energy, pressure on land and deforestation. The urbanization policies should incorporate environmental considerations such as limits to growth, availability of land, water catchments, sewerage and waste disposable systems. In addition, efforts should also be devoted to slow the process of urbanization by encouraging sustainable rural development programmes. Since slums are one of the major sources of water pollution, proper measures should be taken to facilitate the slums with adequate water and sanitation facilities.

The only viable long-term strategy for poverty eradication is increasing incomes of those engaged in agriculture. Such income growth should be gradual and only benefit the environment over the longer term. It should therefore be supplemented with targeted interventions that directly alleviate the risks faced by poor and secure their rights to natural resources. The creation of employment opportunities is essential in rural areas where high poverty, unemployment and landlessness co-exist. Poverty also affects the demographic characteristics of the population and hinders the transition to slower population growth. In order to increase green cover and to preserve the existing forests, afforestation and social forestry programmes should be implemented at the local level. There is a need to develop a database for monitoring the impact of environmental degradation. To avoid further environmental degradation, there is also a need to introduce steps such as Environmental Impact Assessment (EIA) and cost-benefit analysis, or other relevant techniques, into the planning process. Soil conservation and sediment control measures should be used to make planned development more sustainable. Considering the various effects of environmental degradation on human beings, it appears that if we want to exist on earth, it is high time to give top priority to control population growth, reduce poverty and minimize environmental degradation.

Dr. Dewaram A. Nagdeve is Reader in the Department of Fertility Studies at IIPS. For further details about this study, please contact him at: dnagdeve@iips.net

Published by the International Institute for Population Sciences (IIPS), Govandi Station Road, Deonar, Mumbai - 400 088, India.
Tel: (91) 22-2556 32 54/55/56 Fax: (91) 22-2556 32 57 E-mail: *publicationcell@iips.net , tvsekher@gmail.com*
www..iipsindia.org