

# **Chapter 5**

## **Development Experience in the Himalayan Mountain Region of India**

**B.K.JOSHI**

Centre for Himalayan Development and Policy Studies  
Dehradun, India

### **5.1 Introduction**

This paper is an attempt to describe and analyse the development experience in the Himalayan region of India and its interface with environmental issues. The Himalayan region of India covers, from west to east, the states of Jammu and Kashmir, Himachal Pradesh, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya, the twelve hill districts of Uttar Pradesh (known as Uttarakhand), Darjeeling district of West Bengal, and two hill districts (Karbi Anglong and North Cachar) of Assam. Development experience, for the purpose of this paper, includes both economic development and growth as well as social and human development. Economic development and growth have been analysed on the basis of familiar indicators like growth rates and composition of state domestic product, workforce distribution, and poverty profile (head count ratio). The indicators of social and human development used in this paper are also the usual ones such as literacy, education, and health. The analysis of the environment has been carried out mainly from the perspective of natural resources, especially land, forests, and water.

A caveat is called for at the very outset. This relates to the unavailability of data on a comparable basis across states and Himalayan districts of states on many crucial issues. The Himalayan region of India, as pointed out above, consists of two categories of political-administrative unit – fully fledged states of the Union of India and parts of larger states, ranging from one district in West Bengal and two in Assam to 12 in

Uttar Pradesh. Data on important indicators such as state domestic product are compiled only at the state level, which means that comparisons in these respects cannot be made with hill districts of larger states. This shortcoming is particularly evident in the case of Uttarakhand, the population of which is second only to that of Jammu and Kashmir among all Himalayan states and areas. A second problem relates to the unavailability of data on important dimensions of development for many Himalayan states, mainly on account of the small size of their population. This is especially the case in respect of indicators that are based on data collected through sample surveys (e.g., poverty ratio) or composite indices like the Human Development Index. Data on many of these indicators and indices are available only for the 16 or so large states of India, defined as states having a population of 10 million or more. The only concession made sometimes is to include the larger Himalayan states, such as Jammu and Kashmir and Himachal Pradesh, even though their populations are less than 10 million. In this paper we have tried to make the best possible use of available data to make a comparative analysis of the development experience of the different states and parts of states in the Himalayan region of India.

The paper is divided into five parts. Part one is the introduction. The second part provides a brief profile of the Himalayan region of India in terms of area, population, and characteristics of the population like rural-urban distribution, sex ratio, and literacy. The third part focuses on the development experience in the realm of economic growth as well as social and human development. The fourth part takes up analysis of the environmental issues, especially related to land use, forestry, and water resources. The fifth and final part attempts to relate the development experience to environmental issues, especially as they relate to management, use, and conservation of natural resources in the Himalayan region of India. In particular, it tries to see how, and to what extent, these twin concerns of development policy have been understood, conceptualised, and reconciled at the levels of policy and programmes.

## **5.2 Himalayan Region of India: A General Profile**

The Himalayan region of India is a vast complex of varied geo-political, socioeconomic, cultural, and political-administrative sub-systems spread over an area of 594,437 sq.km According to the 1991 census, the population of India's Himalayan region was about 43 million, with an overall density of about 72/km<sup>2</sup>. The area, population, and density of population in the Himalayan region are given in Table 5.1. It will be seen that there is considerable variation in the area and population of the different states/parts of states of the Himalayan region. At one extreme we have Sikkim with an area of 7,096 sq.km and a population of 406,457 in 1991 (estimated to be half-a-million in 1997), while, at the other extreme, we have Jammu and Kashmir with an area of 222,236 sq.km and a population of 7,718,700 in 1991 (estimated to be 9.3 million in 1997). As per the 1991 census, three states, viz., Arunachal Pradesh, Mizoram, and Sikkim, had a population of less than one million. By 1997, Arunachal Pradesh was estimated to have crossed the one million mark,

Table 5.1: Himalayan region: area and population, 1991

State	Area <sup>1</sup>	Population	Density <sup>2</sup>	Growth Rate 1981-91	Population (1997) <sup>3</sup>
Arunachal Pradesh	83,743	864,558	10	35.9	1.1
Himachal Pradesh	55,673	5,170,877	93	19.4	6.2
Jammu & Kashmir	222,236	7,718,700 <sup>4</sup>	35	28.9	9.3
Manipur	22,327	1,837,149	82	28.6	2.3
Meghalaya	22,429	1,774,778	79	31.8	2.2
Mizoram	21,081	689,756	33	39.0	0.9
Nagaland	16,579	1,209,546	73	56.9	1.5
Sikkim	7,096	406,457	57	27.6	0.5
Tripura	10,486	2,757,205	263	33.7	3.5
Assam Hills	15,322	813,524	53	-	-
Darjeeling	3,149	1,299,919	413	26.91	-
Uttaranchal	51,125	5,926,146	116	21.5	-

Notes: 1.sq.km

2. Persons per km<sup>2</sup>

3. Estimated mid-year population in millions

4. Projected since census was not held in J&K in 1991

Sources: CSO 1998

Thukral (1998)

Dhar and Gupta 1992

Statistical Abstract India 1997

while Mizoram was just short of it. It is noteworthy that the population of Uttarakhand<sup>1</sup>, is second highest in the region after Jammu and Kashmir and exceeds that of Himachal Pradesh which is slightly larger in area. Similarly, the 1.3 million population of Darjeeling district in West Bengal exceeds that of states like Arunachal Pradesh, Mizoram, Nagaland, and Sikkim while its area is only 3,149 sq.km – the smallest among all the Himalayan units in India. The density of population in the different states/areas also varies considerably – from 10/km<sup>2</sup> in Arunachal Pradesh to 413 in Darjeeling district.

The population growth rate has been consistently high in the states of the Northeast. It was in excess of 30% during 1981-91 in five states, viz., Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Tripura. In Nagaland it was as high 57%. In the two Assam hill districts of Karbi Anglong and North Cachar the rate of growth of population was a phenomenal 73 and 96% respectively during 1971 and 1991 (the 1981 census was not carried out in Assam). In three other states, viz., Manipur, Sikkim, and Jammu and Kashmir<sup>2</sup> it was in the region of 28-29%, which was higher than the all-India rate of 23.5%. Only in Himachal Pradesh, Uttarakhand, and

<sup>1</sup> The region was a part of the state of Uttar Pradesh at the time of writing this paper. Since then the Indian Parliament has enacted a legislation making it a separate state of the Indian Union to come into existence with effect from November 1, 2000.

<sup>2</sup> As per the 1981 census since the 1991 census did not take place in the state.

Darjeeling was the rate of population growth lower than the national average. It is interesting to observe that the natural population growth rate in the Himalayan region has been lower than the all-India figure of 19.3% as the following figures show (CSO 1998).

Arunachal Pradesh	-	17.8%
Himachal Pradesh	-	16.5%
Manipur	-	13.9%
Meghalaya	-	20.1%
Nagaland (only urban)	-	11.8%
Sikkim	-	15.6%
Tripura	-	11.2%

The relatively low natural population growth rate would imply that the high rate of population growth in these states could be attributable to the high rate of immigration. This inference is supported by the analysis of 1981 census data which showed a rather high proportion of migrants (ranging from 7 to 24% compared to 5% for India as a whole) in the population of all states of the Northeast, except for Manipur (Dhar and Gupta 1992).

A high degree of variation is also to be seen in the levels of urbanisation in the region (Table 5.2). The percentage of urban population in the total population in 1991 ranged between 8.7 and 9.1 in Himachal Pradesh and Sikkim respectively at the lower end, to 46.1 in Mizoram at the higher end. This may be compared to the all-India figure of 25.7%. A noteworthy feature of the data in Table 5.2 is the very high growth of urban population visible in certain states between 1971 and 1991. Thus, in Arunachal Pradesh and Mizoram, urban population as a percentage of total population almost doubled in each of the two decades from 1971-81 and 1981-91. Manipur witnessed a similar spurt only during the period from 1971-81. Nagaland saw a relatively large increase, (5.5%) in the proportion of urban population between 1971-81, while a similar process occurred in Tripura (4.5%) in the subsequent decade. In Darjeeling district, on the other hand, urban population as a proportion of the total population has been higher than the national average in all of the last three censuses. The growth in urban population has also been quite steady without any spurts. The pattern in Sikkim has, however, been quite uneven and erratic – a fairly rapid increase during the first decade and a rather swift decline (7%) during the second decade. This is quite baffling and needs to be investigated.<sup>3</sup> In the other states/areas the growth in urban population seems to have been more gradual and not too different from the all-India pattern. A general conclusion emerging from Table 5.2 is that the percentage of urban population to total population has grown at a moderate rate between 1971 and 1991 in the more populous states/areas of the Himalayan region,

<sup>3</sup> One possible explanation for this is that many villages that had formed part of Gangtok urban area till 1981 were taken out by 1991. Thus the population of Gangtok declined by 32% between 1981 and 1991.

Table 5.2: Percentage of urban population to total population: 1971-1991

State	1971	1981	1991
Arunachal Pradesh	3.70	6.56	12.80
Himachal Pradesh	6.99	7.61	8.69
Jammu& Kashmir	18.59	21.05	23.83
Manipur	13.19	26.42	27.52
Meghalaya	14.55	18.07	18.60
Mizoram	11.36	24.67	46.10
Nagaland	9.95	15.42	17.21
Sikkim	9.37	16.15	9.10
Tripura	10.43	10.99	15.30
Assam Hills	-	-	12.90
Darjeeling	23.1	27.5	30.47
Uttaranchal	-	18.30	21.70
India	19.91	23.34	25.71

Source: CSO 1998

viz., Himachal Pradesh, Jammu and Kashmir, Tripura, and Uttaranchal, whereas in the less populous states/ areas the growth has occurred in spurts, with bursts of very high growth in certain periods. The latter pattern of urban growth can be quite destabilising and can stretch urban infrastructure and facilities almost to breaking point. As there are only one or two urban centres in the less populous states, they have become victims of runaway and unregulated growth during the past two or three decades.

A special characteristic of the population in the Himalayan region of India, especially in the Northeastern part, is the predominance of the tribal population. In India, tribal population constitutes eight per cent of the total population. In the Himalayan states of the Northeast, however, tribals are the predominant group, with their share in the total population varying from a low of 22% in Sikkim, 31% in Tripura, and 34% in Manipur to a high of 64% in Arunachal Pradesh, 86% in Meghalaya, 88% in Nagaland, and 95% in Mizoram. In Himachal Pradesh and Uttaranchal, on the other hand, tribals constitute only 4 and 3.5% of the population respectively.

High levels of immigration, as noted earlier, into a predominantly tribal area can lead to social unrest. Unrest is bound to affect development activities and programmes, creating further alienation and dissatisfaction among the people, especially the youth for whom sufficient employment and income-generating opportunities are not available. This, unfortunately, has been happening all too frequently in much of the Northeast.

### 5.3 Development Experience in the Himalayan Region

#### Economic development and growth

Any rigorous analysis of economic development and growth in the Himalayan region of India is hampered by the lack of comparable data, especially time-series' data,

across the states/parts of states in the region. We have, nevertheless, tried to make the best use of available data to get a general idea of the economy of the Himalayan region of India. A few qualifying statements need to be made at the outset. Many states in the Himalayan region are either facing disturbed conditions at the moment or have been through such experiences in the past. Thus, Jammu and Kashmir in the Northwest and Nagaland, Manipur, and Tripura in the Northeast are at present in the throes of serious problems of insurgency and disturbed law and order situations. In the recent past, Uttarakhand has gone through a brief but intense agitation for a separate state in the early nineties, while the Darjeeling hill areas faced a similar situation for a longer period in the eighties. These disturbances have inevitably taken their toll on development activities in the affected areas. Depending on the intensity and duration of the disturbances, development has been set back by periods ranging from a few years to a few decades in different states/areas. In some of the worst affected states like Jammu and Kashmir, the economy of the state has come under such severe pressure that it is finding it difficult to maintain the tempo of normal governmental activity, let alone take up new responsibilities in the field of development. It is important to bear in mind that, in the Himalayan region of India, state initiative and public investment will continue to have to play a leading role as a catalyst of development and provider of public services because the economies are still fairly underdeveloped in much of the area. In such a situation, the market cannot be expected to reach out to large sections of the population if the state withdraws (due to lack of resources or exigencies of law and order) from crucial economic and social sector activities.

The economies of the Himalayan states/areas in India are largely agrarian or agro-pastoral in nature. There has not been much industrialisation even in the somewhat better-developed states like Himachal Pradesh. The low level of industrialisation in the region can be attributed to the isolation and remoteness of much of the area and the poor state of infrastructure like power, roads, and communication. The region also does not have the advantage of a large enough local market that could act as an incentive for industries to be established there. The few industries and industrial areas that do exist in some states like Himachal Pradesh, Jammu and Kashmir, and Uttarakhand are located in areas adjoining the plains which are better served by rail and road networks. Even agriculture in much of the region is heavily oriented towards cereal cultivation for home consumption. Though largely subsistence-based, agriculture in the hills is unable to supply sufficient cereals to the local population. The Himalayan states, by and large, are net importers of cereals. There is also very little diversification of agriculture. As one study of development in the Himalayan states of India points out:

“While agriculture is the main source of income (in the Himalayan states), this source is largely inelastic because of poor agricultural and livestock yields. This is a limitation imposed by topography, soil conditions, climatic factors, very limited irrigation, and poor land productivity. It may also be remembered that in the hill states only about

one-tenth of the total land is available under cultivation.” (Dhar and Gupta 1992, 238-39).

The Himalayan areas have a natural and comparative advantage in horticulture (Jodha and Shrestha 1994) and even in the production of some horticultural crops and medicinal plants. Unfortunately, apart from the isolated example of Himachal Pradesh, not many Himalayan areas have been able to exploit this factor for economic gain. On the other hand there are indications that in some cases the niche itself may be facing a threat, largely because of globalisation and the opening up of trade in horticultural products. Already protests are being heard from apple growers in Himachal Pradesh about permitting relatively free import of apples and other fruit by placing them in the Open General Licence (OGL) category. A niche, it may be pointed out, does not carry a permanent advantage. It has to be protected and nurtured.

For analysing the economic growth performance of the Himalayan states of India we have used two sets of data: per capita net state domestic product at current prices for selected years between 1980-81 and 1996-97 and its comparison with per capita net national product (Table 5.3); and rate of growth of net state domestic product at constant (1980-81) prices between 1991-92 and 1996-97 (Table 5.4). From Table 5.3 it can be seen that between 1980-81 and 1996-97, relative to per capita net national product per capita, state domestic product declined in five Himalayan states, viz., Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, and Tripura. The decline was especially large in Jammu and Kashmir, Manipur, and Tripura. In all these states, as also in Himachal Pradesh and Meghalaya, the decline in growth rate has been particularly marked during the 1990s, although the process seems to have commenced in Jammu and Kashmir and, to some extent, in Tripura as well after 1985-86. In two states, viz., Mizoram and Nagaland, per capita state domestic product as a proportion of per capita net national product actually increased during this same period, no doubt with ups and downs in different years. The 1990s appear to be the period in which Mizoram performed well, while in the case of Nagaland it is the decade of the eighties that shows better performance. In Arunachal Pradesh and Sikkim, on the other hand, the performance relative to the national level has been more or less even with some fluctuations in individual years.

Data on the growth of the economies of the Himalayan states during the decade of the nineties (Table 5.4) lend support to the view that most of them have been growing at a rate slower than that of the national economy, especially after 1991-92. It is noteworthy that, in 1991-92, all the Himalayan states had a rate of economic growth higher than the national average, which was a low of 0.2%. Arunachal Pradesh and Manipur had particularly high rates of growth of 14.3 and 8.4% respectively. Himachal Pradesh and Jammu and Kashmir had rather low rates of growth of 0.6% and 1.9% respectively in that year. Between 1991-92 and 1996-97, on the other hand, the rate of growth of the national economy increased significantly, while that of the Himalayan states, except Nagaland and Tripura, settled at a lower level. At the same time, economic growth seems to have picked up in all states except Meghalaya and Jammu

**Table 5.3: Per capita net state domestic product at current prices in Himalayan states: 1980 to 1995-96**

State	1980-81	1985-86	1990-91	1995-96	1996-97 (in IRs)
Arunachal Pradesh	1,571 (96.38)	3,403 (124.65)	5,397 (108.31)	10,205 (96.96)	12,032 (104.14)
Himachal Pradesh	1,704 (104.54)	2,649 (97.03)	4,910 (98.54)	8,747 (83.11)	—
Jammu& Kashmir	1,776 (108.96)	2,874 (105.27)	3,625 (72.75)	6,181 (58.73)	6,658 (57.63)
Manipur	1,419 (87.06)	2,322 (85.05)	3,976 (79.79)	6,914 (65.69)	7,510 (65.00)
Meghalaya	1,361 (83.50)	2,250 (82.42)	4,375 (87.80)	7,662 (72.80)	8,474 (73.34)
Mizoram	1,289 (79.08)	2,658 (97.36)	4,135 (82.98)	9,570 (90.93)	13,360 (115.63)
Nagaland	1,448 (88.83)	2,591 (94.91)	5,498 (110.34)	9,758 (92.71)	11,174 (96.71)
Sikkim	1,571 (96.38)	3,023 (110.73)	5,302 (106.40)	9,472 (90.00)	—
Tripura	1,307 (80.18)	2,025 (74.18)	3,370 (67.63)	5,083 (48.29)	5,432 (47.01)
India (NNP)	1,630 (100.00)	2,730 (100.00)	4,983 (100.00)	10,525 (100.00)	11,554 (100.00)

Figures in parentheses represent % of all-India Net National Product per capita at current prices.

Source: MoF (1999)  
MoF (2000)

and Kashmir. The case of Tripura however is quite intriguing. The data for the state in Tables 5.3 and 5.4 lead to contradictory inferences: a rather high rate of average annual growth of 7.3% of net state domestic product between 1991-92 and 1996-97, and a sharp decline in per capita net state domestic product relative to per capita net national product. It is difficult to reconcile these two conclusions. Overall it would appear that, except in a few cases like Jammu and Kashmir, Manipur, and Tripura (with some reservations), Meghalaya (more recently), and to some extent Himachal Pradesh, growth of SDP per capita in most of the Himalayan states has been fairly steady and consistent, although lower than the national average. Jammu and Kashmir, Manipur, and Tripura may perhaps have been paying the price for insurgency and a disturbed internal security environment. Another general feature that emerges from the data in Table 5.4 is the fact that the growth of SDP per capita has been lower than the all-India growth in all states except two (Nagaland and Tripura) during the period from 1991-92 to 1996-97. This, incidentally, is also the period when structural adjustment, liberalisation, and economic reform policies were introduced into the country. The first stage of reform policies was implemented at the national level. It is by now well known that, after the initial economic stagnation in the first two years, the economy of the country entered a higher growth pattern of six per cent plus growth rate by the

Table 5.4: Growth rate of net state domestic product at constant (1980-81) prices in Himalayan states: 1991-92 to 1996-97  
 (in per cent)

State	Average Annual Growth Rate	
	1991-92	1991-92 to 1996-97
Arunachal Pradesh	14.3	4.9
Himachal Pradesh	0.6	4.3
Jammu & Kashmir	1.9	3.9
Manipur	8.4	5.2
Meghalaya	4.9	2.8
Nagaland	3.9	6.4
Tripura	3.3	7.3
India	0.2	5.6

Mizoram has not been included as it prepares SDP estimates at current prices only.

Source: RB (1998).

middle of the decade of the nineties. A similar growth pattern, however, has not been visible in the Himalayan states.

While states that have adopted reform and liberalisation policies have improved their growth performance, not all of them are so favourably placed. Hence it is now being argued that the second phase of economic reforms must be implemented by the states.

The Himalayan states appear to be especially ill equipped to cope with the consequences of economic reforms. As we have seen, the absence of proper infrastructure and a generally low level of industrialisation hamper them. These states are still heavily dependent on primary economic activities; mainly agriculture, animal husbandry, forestry, and similar activities.

The picture of the Himalayan region as an area largely dependent on agriculture and other primary activities is supported by data on the work force (Tables 5.5 and 5.6). One notable feature of the workforce evident from these tables is the generally high worker participation rates, even among women. Table 5.5 shows that in all the Himalayan areas, except for Tripura and Darjeeling, participation rates – both general and female – are much higher than the all-India rates. Worker participation rates are in excess of 40% and women's work participation rates are in excess of 35% in all areas except the above two.

The distribution of main workers in the primary, secondary, and tertiary sectors shows that between 64 to 75% of the main workers are engaged in the primary sector, and this is not very different from the position at the all-India level. However it needs to be pointed out that the vast majority of main workers in the primary sector in the Himalayan region are cultivators. The proportion of cultivators among main workers

ranges between 56 and 68% in these states (with the exception of Tripura where it is only 38%), compared to the national average of 39%. On the other hand, the proportion of agricultural labourers among main workers is rather low in the Himalayan region compared to the country as a whole. It ranges between 3.5 and 13% (again excluding Tripura where it is 24%), compared to the all-India figure of 26.15%. The proportion of main workers engaged in the tertiary sector is also quite similar to the all-India figure of 20.5%, ranging between 20 and 30%. Secondary sector employment, however, tends to be lower in the Himalayan states than the national average. In only three states – Sikkim, Himachal Pradesh, and Manipur with 11, 10, and 9.7% respectively – does it come close to the all-India figure of 12%. In the other states it ranges between 3.5 and 8.7%.

### **Poverty**

Data on poverty are not very satisfactory for the Himalayan region. The basis for calculation of population below the poverty line is the periodic (five-yearly) consumer expenditure surveys undertaken by the National Sample Survey Organisation (NSSO). The NSSO sample, unfortunately, does not give adequate representation of the small states, especially of those in the Northeast. Hence we find that poverty estimates for these states are not very accurate. Estimates of the

**Table 5.5: Percentage of workers in the Himalayan region, 1991**

Arunachal Pradesh	Persons	47.46
	Male	54.21
	Female	39.61
Himachal Pradesh	Persons	42.27
	Male	49.72
	Female	34.79
Jammu & Kashmir	Persons	41.51
	Male	45.36
	Female	37.50
Manipur	Persons	41.51
	Male	45.36
	Female	37.50
Meghalaya	Persons	43.06
	Male	49.09
	Female	36.69
Mizoram	Persons	49.36
	Male	54.37
	Female	43.94
Nagaland	Persons	44.20
	Male	48.61
	Female	39.25
Sikkim	Persons	53.20
	Male	53.60
	Female	52.74
Tripura	Persons	31.36
	Male	47.48
	Female	14.31
Assam Hills	Persons	41.94
	Male	51.91
	Female	30.89
Darjeeling	Persons	33.77
	Male	46.07
	Female	20.44
Uttaranchal	Persons	41.91
	Male	58.99
	Female	41.01
India	Persons	37.68
	Male	51.56
	Female	22.73

Source: Census of India 1991

**Table 5.6: Percentage distribution of main workers in primary, secondary and tertiary sectors in the Himalayan region, 1991**

State	Primary Sector	Secondary Sector	Tertiary Sector
Arunachal Pradesh	67.4	8.7	23.9
Himachal Pradesh	69.3	10.0	20.7
Jammu & Kashmir	NA	NA	NA
Manipur	70.0	9.7	20.3
Meghalaya	74.8	3.7	21.5
Mizoram	66.0	5.1	28.9
Nagaland	75.3	3.5	21.3
Sikkim	68.4	11.1	20.5
Tripura	64.1	6.4	29.5
India	67.5	12.0	20.5

NA: Not Available

Source: CSO 1998

percentage of population below the poverty line in 1993-94 are given in Table 5.7. It will be seen that the urban and rural poverty ratios are identical for all the Northeastern states, on the one hand, and for Himachal Pradesh and Jammu and Kashmir on the other. This is because the poverty ratios for Assam are used for all the Northeastern states and of Himachal Pradesh for Jammu and Kashmir. Based on this assumption the combined (rural and urban) poverty ratio shows the incidence of poverty in these states to vary from about 25% (J&K) to 41% (Sikkim), compared to the all-India average of 36%. Separate poverty estimates are not available for Uttarakhand as it is a part of Uttar Pradesh. Yet, if in an analogy of the procedure followed for the above states we use the rural and urban poverty ratios of 42.28 and 35.39% respectively for Uttar Pradesh, we get a figure of 40.78% as the combined poverty estimate for Uttarakhand. However, as pointed out above, the accuracy and reliability of these estimates are questionable. Hence their utility in drawing any definite conclusions or making any analysis also may be limited.

### **Social and human development**

If the situation in the Himalayan region is not all that good relative to the country as a whole in terms of the economy, the area of social and human development provides a refreshing contrast. Even though we are hampered by the lack of reliable data covering the whole region, whatever data are available show the region in a favourable light vis-à-vis the rest of the country on important indicators of social development.

Looking first at literacy and education, Table 5.8 provides data on literacy for 1991 and 1997. The former are drawn from the Census and the latter from the National Sample Survey. Both these data show considerably higher levels of literacy in the Himalayan region than in the country as a whole. The only exceptions are Arunachal

**Table 5.7: Percentage of population below the poverty line in the Himalayan region: 1993-94**

State	Rural	Urban	Combined
Arunachal Pradesh	45.01	7.73	39.35
Himachal Pradesh	30.34	9.18	28.44
Jammu & Kashmir	30.34	9.18	25.17
Manipur	45.01	7.73	33.78
Meghalaya	45.01	7.73	37.92
Mizoram	45.01	7.73	25.66
Nagaland	45.01	7.73	37.92
Sikkim	45.01	7.73	41.43
Tripura	45.01	7.75	39.01
Uttaranchal	NA	NA	NA
India	37.27	32.36	35.97

Source: CSO 1998

Pradesh and Meghalaya where the literacy percentages in 1991 were lower than the All-India figure. By 1997, however, Meghalaya had exceeded the national average by 15 percentage points, while Arunachal Pradesh almost caught up with it, being only marginally lower. In fact a spurt in literacy between 1991 and 1997 has been a feature of the entire Himalayan region. This can be seen from the fact that, whereas the percentage of literates at the all-India level increased by ten percentage points during this period, in the Himalayan region the increase ranged from 13% (Mizoram, Tripura, and Himachal Pradesh) to 28% (Meghalaya). This is truly a remarkable achievement. As a result, all the states in the region (except Arunachal Pradesh) achieved literacy rates in excess of 70%, with six states achieving a level in excess of

**Table 5.8: Percentage of literates aged seven plus in the Himalayan region**

State	Total	Male	Female	Gender Disparity F/M	Total Literacy Rate 1997'
Arunachal Pradesh	41.59	51.45	26.69	0.51	60
Himachal Pradesh	63.86	75.36	52.13	0.69	77
Jammu & Kashmir	NA	NA	NA	NA	NA
Manipur	59.89	71.63	47.60	0.58	76
Meghalaya	49.10	53.12	44.85	0.84	77
Mizoram	82.27	85.61	78.60	0.92	95
Nagaland	61.65	67.62	54.75	0.81	84
Sikkim	56.94	65.74	46.69	0.71	79
Tripura	60.44	70.58	49.65	0.70	73
Uttaranchal	59.58	75.51	42.87	0.57	NA
India	52.21	64.13	39.29	0.61	62

Note: NA: not available NSS data

Source: MoF 1999

75%. Furthermore, Mizoram has now emerged as the most literate state in the country, replacing Kerala, which had a literacy rate of 93% in 1997.

Gender disparity in literacy, expressed as the female literacy rate as a proportion of the male literacy rate, has been calculated for 1991. It will be seen that only three states/regions, viz., Arunachal Pradesh, Manipur, and Uttaranchal, had higher levels of gender disparity than the all-India level. In five states, gender disparity was much lower than the all-India level. In general we find that states/regions with lower literacy rates had higher levels of gender disparity. The two exceptions to this generalisation were Meghalaya and Tripura. It is, however, reasonable to expect a decline in gender disparity with an improvement in the literacy rate. Mizoram, which had the highest literacy rate in the Himalayan region in 1991, also had the lowest level of gender disparity.

The generally higher levels of literacy in the Himalayan region and lower levels of gender disparity compared to the country as a whole are largely the result of better performance in the field of education, especially elementary education. This is evident from the data on enrolment, discontinuation, and non-attendance rates among children in the elementary school-going age (6-14 yrs) contained in the 'India Human Development Report' (Shariff 1999). Although this report does contain data at the state level, unfortunately for our purposes the Himalayan states are not adequately represented. Data are given separately only for Himachal Pradesh, while all of the Northeastern states, including Assam, have been combined into one group called the Northeastern region. In the absence of any other data we have therefore used this set of data not only for analysis of education but for other dimensions of human development as well.

These data show that the enrollment rate for children aged 6-14 years in 1994 was 93% in Himachal Pradesh, 81% in the Northeastern region, and 71% at the all-India level. The gender disparity index (female enrolment rate as a ratio of male enrolment rate) was 0.94 in Himachal Pradesh and 0.90 in the Northeast, compared to 0.84 in the country as a whole. Similarly, discontinuation or drop-out rates was 2% in Himachal Pradesh, 3.3% in the North-east, and 6% in India, with a gender disparity index of 1.2, 1.44, and 1.56 respectively.

Finally, non-attendance rates for Himachal Pradesh, the Northeast, and all-India were 3.5, 11.7, and 7% respectively with a gender disparity index of 0.98, 1.43, and 1.00 respectively. Thus we have a picture of relatively high enrolment with low gender disparity in Himachal Pradesh and the Northeastern states, including Assam. Discontinuation (or drop-out) rates were also lower in Himachal Pradesh and the Northeast in relation to India as a whole, with lower levels of gender disparity; although in all areas discontinuity rates were higher among girls than among boys. In regard to non-attendance rates, however, there was a slight change in this general pattern. While in Himachal Pradesh both the non-attendance rate and gender disparity index were lower than the national average, in the Northeast they were higher (Shariff 1999).

After education the other area of social development examined is health. Here we have analysed selected data such as infant mortality rates (IMR), immunisation of mothers and children, proportion of child births attended by trained attendants, and status of nutrition among children. Taking up infant mortality first, we find that, as per the Sample Registration System (SRS), the rate was estimated at 78 per thousand live births in Himachal Pradesh and 83 per thousand live births in the Northeast compared to 87 per thousand live births at the all-India level in 1992. The National Health and Family Welfare Survey 1992 reported lower rates of 56 and 79 in Himachal Pradesh and India respectively. The estimates arrived at by the National Council of Applied Economic Research (NCAER) Survey in 1994 point to “a secular decline in IMR over the past 2-3 decades” in Himachal Pradesh, in the Northeast, and in the country as a whole (Shariff 1999, 161). The pattern is the same for under-five mortality rates.

The NCAER survey (Shariff 1999) found strong evidence of considerable malnutrition among children aged 0-4 years and 5-12 years in the Himalayan states, as well as in India as a whole. It has used two measures of malnutrition – stunting and wasting. The former is defined as height-for-age, which is “expressed as a percentage or number of standard deviations away from the NCHS (National Council of Health Statistics) international median height-for-age.” Values falling below -3 standard deviations are considered extreme degrees of chronic malnutrition, and those between -3 and -2 standard deviations are deemed to be moderate malnutrition. Wasting is defined similarly on the basis of weight-for-height.

The results of the NCAER survey are presented in Table 5.9. It will be seen that the incidence of severe stunting among 0-4 year olds was almost the same in Himachal Pradesh and the Northeast and only slightly less than the all-India figure. Moderate stunting was much more prevalent in Himachal Pradesh than in the Northeast or the country as a whole. Among the 5-12 year olds, on the other hand, severe stunting was almost of the same order in Himachal Pradesh and India, whereas it was much higher in the Northeast. The incidence of moderate stunting, on the other hand, was much higher in Himachal Pradesh than in the Northeast or the country as a whole. The incidence of wasting, however, was much lower among children in both age groups in all places and cannot be considered a serious problem.

Lack of proper medical attention during pregnancy and childbirth has been identified as a major cause of health problems among women, often leading to chronic illness and even death. The NCAER survey found that 6.3% of the ever-married women in Himachal Pradesh, 8.6% in the Northeast, and 6.9% at the all-India level were pregnant at the time of the survey. Of these only 22.5% in Himachal Pradesh, 8.1% in the Northeast, and 9.8% at the all-India level received any kind of antenatal care. The most common form of antenatal care in all places consisted of tetanus immunisation, followed by iron supplements and blood pressure check-ups (Shariff 1999, 168). Not only was antenatal care available to only a small proportion of

**Table 5.9: Percentage of children (aged 0-12 years) stunted and wasted in the Himalayan region and India: 1994**

	Himachal Pradesh	North-East	All-India
<b>Percentage of 0-4 year-old children</b>			
Severely Stunted	34.0	34.2	37.2
Moderately Stunted	28.7	18.6	21.4
Severely Wasted	3.0	5.5	5.2
Moderately Wasted	4.2	6.1	10.0
<b>Percentage of 5-12 year-old children</b>			
Severely Stunted	28.7	37.1	29.0
Moderately Stunted	33.8	26.4	27.7
Severely Wasted	0.7	2.1	2.1
Moderately Wasted	3.1	4.5	7.3

Source: Shariff 1999

pregnant women, but it was also found that only a minority of births – ranging from 32% in Himachal Pradesh to 42% in the Northeast with the all-India figure being 40% – were attended by trained persons: doctors, nurses, midwives, or trained birth attendants (Shariff 1999, 171).

Immunisation of infants and children against specific diseases like tuberculosis (TB), diphtheria, pertussis in tetanus (DPT), polio, and measles is the most effective strategy for ensuring the survival and health of children. In recent years governments at the state and national levels have also been carrying out a large-scale campaign on immunisation involving NGOs and even private medical practitioners. The NCAER survey, unfortunately, shows that the results are far from satisfactory, especially in the Northeastern region. There, the levels of immunisation achieved were found to be much lower than the national average. Thus, in 1994, the percentage of children aged 12-23 months who had been fully immunised was only 28 in the Northeast compared to 57 in Himachal Pradesh and 49 in India. While gender disparity at the national level was not too wide as the female-male ratio was a satisfactory 0.96, the situation was quite different in Himachal Pradesh and the Northeast where the values of the ratio were 0.85 and 0.82 respectively.

In the area of social and human development the Himalayan region thus seems to have mixed achievements. In the field of literacy and education it is ahead of the rest of the country and many states are, in fact, close to achieving total literacy. Consequently, gender disparity in these states is also low. In the area of health, however, their situation is not all that good. In many crucial areas they are lagging behind the country in general. When we keep in mind that the levels achieved in the latter are far from satisfactory, the grimness of the situation in the Himalayan region becomes apparent.

## **5.4 Natural Resources and Environment**

Development in the Himalayan region has an immediate and direct relation to the environment, much more so than in other parts of the country, especially the vast area of plains lying immediately to the south of the Himalayas. In fact the state of natural resource management in the Himalayas has a clear impact on the environment and well-being of the Indo-Gangetic plain. It is by now well known that deforestation and soil loss in the Himalayas have been major factors behind the increasing havoc caused by floods every year in the downstream areas of Uttar Pradesh, Bihar, Assam, and Bangladesh (Vergheese 1999). Both the intensity and the extent of the area affected by floods have been on the rise in recent years. Deforestation also has an impact on the micro-climate in the Himalayas, promoting further deterioration of the already fragile resource base. For instance, a phenomenon in evidence in the Central Himalayas during the recent past has been a prolonged period of dry heat during the summer. This has resulted in forest fires of increasing frequency and intensity causing, in many cases, irreversible damage to forests.

### **Land-use**

The land-use pattern in the Himalayan region of India has been summarised in Table 5.10. Before commenting on the data we would like to make two preliminary observations. First, the situation in the different Himalayan states/areas is not strictly comparable as the data for various states pertain to different time periods between 1972-73 and 1995-96. Second, although we have provided data on the area under forests from land-use statistics, these data have not been analysed at this stage. A discussion of the situation in regard to forests in somewhat greater detail is contained in a subsequent section.

The first point to note with regard to the land-use pattern in the Himalayan region is that net area sown varies from only 3.37% (Arunachal Pradesh) and 5.22% (Mizoram) at the low end to a maximum of 26.41% (Tripura). Even though most of the people are still dependent on agriculture and allied activities, cultivated area, as a percentage of total area, remains small - hardly exceeding 20%. This only points to the limited scope for agriculture in the economic development of the region. It should hardly come as a surprise then that agriculture is largely a subsistence activity for most of the people engaged in it. At the same time, the pressure on the land is rather heavy since the bulk of the population in much of the Himalayan region lives in rural areas and is dependent on agriculture for a living. This fact is not generally appreciated, given the low levels of overall population density in the region.

Other features of the land-use pattern deserve attention. Land under permanent pastures and grazing lands have a high value in Himachal Pradesh. In fact, at 35%, these occupy the single largest land-use category. There is a high percentage of fallow land (including current fallow) in Meghalaya, Mizoram, and Nagaland. This may be a reflection of the high incidence of shifting cultivation (*jhum*) prevalent in these states. Land under shifting cultivation may have been classified as fallow (Dhar 1996).

Table 5.10: Land-use pattern in the Himalayan region<sup>#</sup>

State	Forest	Land not Available for Cultivation	Permanent Pastures & Grazing Lands	Land under Misc. Tree Crops	Cultivable Wasteland	Fallow Including Current Fallow	(per cent)
							Net Area Sown
Arunachal Pradesh	93.79	0.87	-	0.80	*	1.16	3.37
Himachal Pradesh	30.83	10.23	35.10	1.41	3.47	2.26	16.70
Jammu & Kashmir	60.98	12.90	2.80	1.60	3.12	2.31	16.29
Manipur	27.23	65.35	*	1.09	*	-	6.33
Meghalaya	41.81	10.26	-	7.23	21.20	10.31	9.19
Mizoram	76.53	2.16	-	-	8.33	7.76	5.22
Nagaland	55.82	3.69	-	8.41	4.79	13.65	13.65
Sikkim	36.20	38.03	9.72	0.70	0.14	1.83	13.38
Tripura	57.77	12.68	*	2.57	0.10	0.48	26.41
Uttaranchal	63.91	8.06	*	8.28	5.92	1.33	12.49

# Data pertain to different years between 1972-73 and 1995-96 as follow:

Arunachal Pradesh and Uttaranchal – 1990-91; Himachal Pradesh – 1994-95 Manipur – 1972-73;

Sikkim – 1985-86; Tripura – 1993-94, and others – 1995-96

\* Included in land under miscellaneous tree crops

Source: CSO 1998.

## Forests

We next turn to the data on forest cover in the Himalayan region. Land-use data do not permit us to make any observations about the actual forest cover, as they rely exclusively on the records of the forest departments which classify as forests all land under their control, irrespective of the extent of tree cover on it. Fortunately we have a good body of data on actual forest cover from the Forest Survey of India, and this permits a more detailed examination and analysis of forest area.

Data on forests in the Himalayan region are given in Table 5.11; and it compares the recorded forest area with the actual forest cover as per the 1995 and 1997 assessments of the Forest Survey of India. It also provides information on the state of the forests – whether dense or open – in these states during the same assessments. It should be mentioned here that data for the 1995 assessment were collected between 1991 and 1993 and for the 1997 assessment between 1993 and 1994 in the different states.

An examination of the table shows a considerable difference between the recorded forest area and the actual forest cover. Recorded forest area, it may be pointed out, refers to all lands statutorily notified as forest, irrespective of whether they have any tree cover or not. In all the Northeastern states, except for Tripura, the actual forest cover is more than the recorded area – by as much as one third in Arunachal Pradesh and two thirds in Meghalaya. In Himachal Pradesh and Uttaranchal, on the other

Table 5.11: Forest areas in the Himalayan region: 1995 and 1997

State	Recorded Forest Area 1997	Actual Forest Cover 1995	Actual Forest Cover 1997	(% Distribution)	
				Dense Forest 1997	Open Forest 1997
Arunachal Pradesh	61.54	81.9	81.9	78.9	21.1
Himachal Pradesh	63.60	22.5	22.5	76.4	23.6
Jammu & Kashmir	9.08	9.2	9.2	53.9	46.1
Manipur	67.87	78.3	78.0	28.3	71.7
Meghalaya	42.34	70.1	69.8	25.8	74.2
Mizoram	75.59	88.1	89.1	23.2	76.8
Nagaland	52.04	86.2	85.8	24.5	75.5
Sikkim	37.34	44.1	44.1	77.1	22.6
Tripura	60.01	52.8	52.9	32.8	67.2
Uttaranchal	63.91	-	44.3	77.7	22.3
India	23.28	19.4	19.3	67.5	32.5

Dense forest has a canopy density of 40% and above and open forest between 10 and 40%.

Source: Forest Survey of India 1998.

hand, it is the other way round – actual forest cover is much less than the recorded forest area. In Himachal, in fact, the former is only one-third of the latter while in Uttaranchal it is less by about one-third. Jammu and Kashmir is the only state where the two are about equal.

The second notable feature about the forest cover data is the high proportion of open forest in all Northeastern states except for Arunachal Pradesh and Sikkim. It can be seen that, whereas in the states of Arunachal Pradesh, Himachal Pradesh, Sikkim, and Uttaranchal the ratio between dense and open forest is about 3:1, in Manipur, Meghalaya, Mizoram, and Nagaland it is about 1:3 and in Tripura 1:2. In Jammu and Kashmir this ratio is approximately 1:1. Dense forest is defined as “all lands with a forest cover of trees with a canopy density of 40% and above” and open forest as “all lands with a forest cover of trees with a canopy density between 10 to 40%” (Forest Survey of India 1998). The high incidence of open forests in some of the Northeastern states could perhaps be due to the practice of shifting cultivation. An analysis of the loss/gain in forest cover in the Northeastern states between the 1995 and 1997 assessments by the Forest Survey of India shows that ,during this period, 1,875 sq.km of forest area, concentrated mainly in the states of Manipur, Nagaland, and Mizoram were lost due to shifting cultivation, while 1,700 sq.km of abandoned shifting cultivation came under forest cover as a result of regeneration (Forest Survey of India 1997, 10). Probably both these areas would have been classified as open forests.

The 1997 assessment of the Forest Survey of India also shows that Darjeeling district had a forest cover of 46.2% of which 75.5% was dense forest and 24.5% open forest.

Thus the state of forests in Darjeeling is quite similar to the state of forests in Sikkim and Uttarakhand in terms of the extent of actual forest cover and the ratio between dense and open forest.

## Water

We conclude this examination of natural resources in the Himalayan region of India by taking a look at water resources. Water, like forest, is one of the most important resources in the region. The Himalayas, as is well-known, are home to one of the largest groups of river systems in the world, extending from the Indus system in the west to the Brahmaputra-Barak system in the east, with the Ganges-Yamuna system in the central part. The total volume of water resources contained in these water bodies is truly immense. It has been estimated that the total surface flow of the Ganges basin coming from the Himalayan rivers is about 41 million hectare-metres (including rivers and catchments in Nepal) and of the Brahmaputra-Barak basin at about 60 million hectare-metres out of the total surface flow of 115 million hectare-metres for the entire country (Verghese 1999). This represents a vast potential for irrigation in the plains of north and eastern India. Yet, the benefits of irrigation do not accrue directly to the Himalayan region. On the other hand, the hydropower potential which lies locked up in the Himalayan rivers is also immense and could prove to be a source of great economic gain for the region. This potential has been estimated at almost 3,000 MW in the Yamuna basin in Himachal Pradesh and Uttar Pradesh, about 6,000 MW in the Upper Ganges basin from Hardwar to the glaciers, between 2,000-3,000 MW in Sikkim and North Bengal, about 2,000 MW available to Uttar Pradesh in the Mahakali (which it shares with Nepal), and an immense 40-50,000 MW in the Brahmaputra-Barak basin in the Northeast (Verghese 1999, 186).

There are three main constraints to tapping this vast potential: long gestation period and high capital cost of hydropower projects - problems are compounded by time and cost over-runs, which are all too common; environmental objections; and lack of funds.

The funding constraint has been the most important, although in recent years environmental objections are also acquiring greater credit than ever before. In fact, shortage of funds leading to poor cash flow along with environmental objections have been the main reasons behind time and cost over-runs in projects under construction. To overcome these constraints in order to tap the potential for hydropower in the Himalayan region, a clear policy framework addressing all these dimensions, including the crucial one of environmental concerns, needs to be established. Behind most environmental concerns lies the issue of rehabilitation of people displaced by hydro projects, especially large dams. This issue needs to be addressed with sympathy and concern. Our record in this respect has not been too good. The policy must also address the issue of funding, especially foreign funding, for hydropower development. Any policy to be effective should have clear guidelines and transparent procedures.

## **5.5 Himalayan Development: The Policy Perspective**

National policy on the approach to and strategy of development in the Himalayan region has gradually evolved over the years. In the initial years, especially until the Fifth Five Year Plan (1974-79), the approach to the development of the Himalayan region was no different from the approach to development of the rest of the country. No special problems or development needs of the region were recognised. The Fifth Plan, for the first time, accepted that the development issues, needs, and problems of the hill areas were distinct, necessitating a different set of policies and programmes. This understanding has continued to inform national, and now increasingly state-level, policy perspectives on development of the Himalayan region. In recent years the need to integrate development with environmental concerns has come to be accepted and articulated in policy documents with increasing frequency. This evolution in the approach to the development of Himalayan and other hill areas in the country has been well summarised by the working group constituted for the Eighth Five Year Plan:

“The hill areas of the country are faced with certain peculiar problems inhibiting the process of development. On account of their difficult terrain, variable agro-climatic conditions, distinct sociocultural features, the hill areas have remained backward. The emphasis on the hill area development emerged from growing concern over inter-regional disparities and the disadvantaged hill people. Consequently, the hill areas of the country have been receiving special attention since the Second Five-year Plan. Initially, these consisted of the Himalayan region and, to the extent possible, special allocations were made for them. The quantum of allocation was governed by the needs of the three broad sectors: agriculture, roads and other heads of development. Roads, followed by agricultural programmes, claimed a large share.

“In course of time, it was realised that development of the hilly areas in the country cannot be undertaken in isolation from the adjoining plains, with which their economy is closely interrelated. The hilly areas influence the climate of the plains, (containing) the catchments and the watersheds of several major river systems, which flow to the plains. They abound in forests, plant and mineral wealth as well as hydel energy resource[s]. The experience of development planning during the period before the Fifth Plan has increasingly underlined the realisation that unless adequate programmes are evolved for conservation and proper utilisation of the resources of the hill areas, not only will the problems of these areas continue to remain unsolved, but the economy of the plains may also come to grief. There was, therefore, the paramount need for conceiving an integrated strategy for development of the hill areas based on sound principles of ecology and economics. It was in consideration of this need that[a] special hill area development programme (HADP) was initiated during the Fifth Five Year Plan (1974-79)” (GOI 1992).

Various commissions and working groups constituted by the Government of India and the Planning Commission from time to time to recommend policy measures and programmes for the development of the Himalayas generally concur with the view

that the Indian Himalayan region does not constitute a homogenous region and variations on the basis of terrain, climate, altitude, rainfall, topography, soil conditions, proximity to the plains, and various other factors call for different strategies for different regions, and that the socioeconomic growth, development of infrastructure, and promotion of ecology need to be harmonised. Some of the more important Commissions/Working Groups are noted in the following passages.

- The National Commission on Development of Backward Areas under the Chairmanship of Shri B.S. Sivaraman which devoted one volume of its report to development of backward hill areas
- The Task Force for the Study of Eco-development in the Himalayan region under the chairmanship of Dr. M.S. Swaminathan
- The group for deciding Strategies for Eco-development of the Himalayas, with special reference to the Northwest Himalayas (1987)
- The Expert Group on National Policy for Integrated Development of the Himalayas chaired by Prof. S.Z. Qasim (1993)

A review of the state of policy formulation at the national level related to development of Himalayan and hill areas highlights a few interesting features that merit some comment (Joshi and Shastri 1998). Firstly, it needs to be emphasised that, as yet, no clear policy framework has emerged for integrating environmental concerns with development issues, especially in relation to the Himalayan and hilly areas. The discussion is limited to rhetoric. Various Working Groups, Commissions, and Committees appointed by the Planning Commission to make recommendations on development of hill areas have stressed the urgent need to integrate the two ideas. Many of them have also made useful suggestions to achieve this objective. Unfortunately, the reports of most, if not all, of these bodies have remained on paper and have not been implemented. The reason perhaps could be that the Planning Commission can only suggest and recommend policy in relation to development of hill areas in broad general terms. Its power and clout arise from its control over resources. However, having once provided the resources, the responsibility shifts to the states, which have to provide flesh and blood to the policy and ensure its implementation. The Planning Commission can, at best, prescribe guidelines for implementation of policy and programmes, including ways in which development projects and schemes are to incorporate environmental concerns. There is little evidence that even this has been attempted.

Secondly, the methodology for including environmental costs in cost-benefit analysis has yet not been developed and standardised. This acts as a key constraint in appraising projects while making decisions regarding their funding. This issue is important, because it concerns the manner in which decisions to include or not to include projects in the plan framework are made. A standardised quantitative methodology for incorporating environmental costs and benefits has to be evolved, and then become a regular feature of project appraisal at the Planning Commission level. As long as

environmental concerns continue to be articulated in qualitative and subjective terms, their incorporation into the planning system appears to be unlikely. As the example of the Tehri Dam shows, the absence of a standardised methodology for environmental appraisal can lead to considerable confusion arising out of subjectivity. The inevitable consequence is delay and cost escalation. The Tehri Dam is a particularly good example because ,even after so many years of controversy and discussion, there is little clarity about the environmental parameters for project appraisal.

Thirdly, there has been little effort to involve the state governments, especially those of the Himalayan states, in evolving a policy framework for integrating environmental considerations with development planning and developing suitable methodologies for the same. This is particularly important, as the states are the implementing agencies. Unless they internalise and operationalise the concept, there is little possibility of its coming into practice.

Development policy and practice in the Himalayan region, as indeed in the rest of the country, remain firmly anchored in the dominant paradigm of accelerating economic growth through investment in productive activities and infrastructure. In the Himalayan areas, the people still consider the state to be the principal source of investment in the infrastructure and productive sectors of the economy, as well as in the social sectors. In the field of infrastructural development (roads, power, communications) and social and human development (health, education, women, and child development), in particular, the primacy of state action is widely and unquestionably assumed.

Unfortunately, the capacity of governments to undertake investments in these areas has become severely constrained. Almost all governments, whether at the national or state levels, have been facing a severe resource crunch. A rising fiscal deficit, especially revenue deficit, and an unprecedented increase in establishment costs (salary and pension payments) and public debt have seriously hampered the capacity of state governments to undertake any large investment in the field of development. The prospects for private investment in the Himalayan states also do not appear to be very bright, as opportunities for securing economic returns on investments are rather limited. This leaves foreign investment as the only other option for financing investments in the area of infrastructure and social services. The record of the Himalayan states in attracting foreign investment in these, or any other areas, is not at all encouraging. They have, however, been successful in receiving loans and grants from multilateral and bilateral sources such as the World Bank, European Community, and the Federal Republic of Germany, among others, for specific programmes like watershed management, forestry — especially Joint Forest Management, drinking water supplies, education (District Primary Education Programme), family planning, and so on.

Perhaps one sector that seems to hold some promise of attracting private investment, both foreign and Indian, is hydroelectric power generation. The Himalayan region,

as we have seen, has a huge untapped hydropower potential that can also be a good source of resource generation for these states. By selling energy to energy-deficit states in the northern and eastern parts of the country, they can earn substantial revenues. As pointed out earlier, the main constraints in this respect are environmental objections and the absence of a framework of policies and transparent procedures. Both need to be addressed urgently.

Finally, the Himalayan region in India needs to carry out considerable introspection on the priorities and pathways of development in the current environment of globalisation, liberalisation, and decentralisation, on the one hand, and the rising expectations of the people from the public system and demands for equity and social justice on the other.

## References

- Census of India (1991) *Provisional Population Totals: Workers and Their Distribution.(Paper 3)*. New Delhi: Registrar General and Census Commissioner, India
- CSO (1997) *Statistical Abstract India*. New Delhi: Ministry of Planning and Programme Implementation, Department of Statistics, Government of India
- CSO (1998) *Statistical Abstract India*. New Delhi: Central Statistical Organisation
- Dhar, T.N. (1996) *Himalaya Land-Use: The Peoples' Dimension*. Lucknow: SHERPA
- Dhar, T.N., and Gupta S.P. (1992). *Himalayan States of India – Development Profiles*. Lucknow: SHERPA
- Forest Survey of India, Ministry of Environment and Forests, Government of India (1998) *State of the Forest Report 1997*. Dehradun: GOI, MoEF
- GOI (1992) *The Eighth Five Year Plan (1992-97)*. New Delhi: Planning Commission
- Jodha, N.S.; Shrestha, S. (1994) *Sustainable and More Productive Agriculture: Problems and Prospects*. Proceedings of the Tenth Anniversary Symposium of ICIMOD. Kathmandu: ICIMOD
- Joshi, B.K.; Shastri, C. (1998) 'Integrated Planning for Environmental and Economic Development in Hill Areas – Country Case Study: India'. A study commissioned by ICIMOD. (Mimeo) Dehradun: SIDH
- MoF (1999) *Economic Survey 1998-99*. New Delhi: Ministry of Finance, Government of India
- MoF (2000) *Economic Survey 1999-2000*. New Delhi: Ministry of Finance, Government of India

- Reserve Bank of India (1998) *Report on Currency and Finance, 1997-98*, Vol. I. Bombay: Reserve Bank of India
- Shariff, A.S. (1999) India Human Development Report: A Profile of Indian States in the 1990s. New Delhi: Oxford University Press
- Thukral, R.K. (1998) *Jagran's Uttar Pradesh at a Glance*. Lucknow: Dainik Jagran
- Verghese, B.G. (1999) *Waters of Hope: From Vision to Reality in Himalaya-Ganga Development Cooperation*. New Delhi: Oxford & IBH