

# Chapter IV

## Different Indicators Of Development : The Structure Of The States of India And The Districts Of West Bengal

### 4.1: Introduction

To prepare, present and analyse the HDI of the States of India we shall consider 16 major States of India. The States are Andhra Pradesh ( AP ), Assam, Bihar, Gujrat, Haryana, Himachal Pradesh ( HP ), Karnataka, Kerala, Madhya Pradesh ( MP ), Maharashtra, Orissa, Rajasthan, Tami Nadu ( TN ), Punjab, Uttar Pradesh ( UP ), and West Bengal ( WB ). It should be noted that in 1991, the 16 major States constituted about 95% of Indian population. Thus the exclusion of some very few States and Union Territories will not vitiate seriously our analysis of human development in India.

In this chapter we shall study the growth of per capita net State Domestic Product (SDP), the health and education related indicators of States of India. In this analysis the main focus will be on the nature and trend of the distribution of health and educational facilities in the 16 major States in the year 1981 and 1991. The main idea is to examine whether the distribution is biased against the low per capita income States and whether there exists a clear trend in the pattern of distribution over time.

We consider the per capita net SDP of 1991-92 at current prices as the basis of grouping the States of India. The all India per capita net domestic product for 1991-92 at current prices was Rs. 5630.00 and this figure is considered as the cut off point . In Table 4.1 it is clear that there were six States with higher per capita net SDP than the national average and the other States had a lower figure than this national average. Hence we form two groups in our study, the first group consisting of six States and the second group of 10 States. The first group is more developed and the second group is less developed from the point of view of this per capita net SDP . We start with this division to consider the health and education related indicators.

**Table 4.1**

Per capita Net State Domestic Product (at current Prices) in the States of India, 1991-92

( New Series ) ( Rs. )

States	1991-92	Rank of the States.
1. Punjab	9973	1
2. Haryana	8746	2
3. Maharashtra	8063	3
4. Gujrat	5994	4
5. Tamil Nadu	5878	5
6. Karnataka	5833	6
7. Himachal Pradesh	5578	7
8. Andhra Pradesh	5556	8
9. West Bengal	5227	9
10. Kerala	5140	10
11. Assam	4594	11
12. Rajasthan	4511	12
13. Madhya Pradesh	4377	13
14. Uttar Pradesh	3979	14
15. Orissa	3907	15
16. Bihar	2871	16
India	5603	-

**Source:** *Government of India, Economic Survey, 1995-96*

## 4.2: Health Related Indicators

The Government of India became a signatory of the Alma-Ata Declaration in 1978 on 'Health For All by 2000 A.D.' Primary health care was visualised as the nucleus of the health system of the country to make essential health care universally accessible.

### 4.2.1: Life Expectancy at birth (LE) :

Table 4.2 (a) illustrates the distribution of LE for 1981-88 and 1988-91 for male, female and total population for all the major States of India. It can be observed that in 1981-88 LE figures varied from 68.4 years in Kerala to 51.6 in M.P. This maximum figure increased to 70.76 in Kerala in 1988-91 and the minimum figure for the same year became 52.03 for U.P. Actually UP showed a falling rate of LE over the year 1981-88 to 1988-91.

By comparing the mean values of the variables of the two groups of States the idea of the distribution of the variables over the groups can be observed. The intra-group disparity in the distribution is obtained from the coefficient of variation (CV) of each group which are denoted by CV<sub>1</sub>, and CV<sub>2</sub> for the groups respectively. The mean values and the standard deviation of the two groups are denoted by  $\bar{x}_1$ ,  $\bar{x}_2$  and  $s_1$ ,  $s_2$  respectively.

From Table 4.2 (a) and 4.2 (b) it is clear that the average LE in the Indian States in the period 1988-91 increased over that in the period 1981-88 for male, female and for all the population. However the average LE is higher in both groups over the second group of States in both the periods for both the sexes and for all the population. It is also observed that the average female LE is higher in both groups over the male LE in both the periods. However the LE of male population is higher than the female population in 1981-88 in Haryana, Orissa and Bihar. Surprisingly the LE of male population becomes higher than the female population in Haryana, TN, WB, Assam, UP, MP and Bihar in 1988-91. But the average figure in both the groups could not alter the result of higher LE for female population over the male population in the period 1988-91.

The t-test shows that the calculated values of t are less than the expected values at 5% and 1% level of significance. Hence the mean differences are insignificant in both the periods for male, female and aggregate population.

**Table 4.2 (a)**

## Life Expectancy at birth of the States of India

States	1981-88			1988-91		
	Male	Female	Total	Male	Female	Total
1. Punjab	63	64.7	63.1	65.61	65.36	65.46
2. Haryana	61.5	59.5	60.3	63.41	61.97	62.74
3. Maharashtra	66.1	62.8	60.6	62.00	64.30	63.11
4. Gujrat	55.9	57.9	57.6	58.34	61.49	59.86
5. Tamil Nadu	57.4	58.5	56.9	60.85	60.80	60.83
6. Karnataka	59.8	62.4	60.6	62.15	63.31	62.72
7. H.P.	58.5	62.9	60.4	--	--	--
8. A.P.	57.3	60.3	58.4	59.1	62.23	60.64
9. W.B.	57.9	59.1	57.4	67.6	73.80	70.76
10. Kerala	65.9	72.2	68.4	67.6	73.8	70.76
11. Assam	52.4	52.5	51.9	55.74	55.23	55.47
12. Rajasthan	53.5	54.3	53.5	57.8	58.69	58.22
13. M.P.	50.6	51.8	51.6	56.24	54.71	55.5
14. U.P.	60.1	62.8	60.6	54.14	49.64	52.03
15. Orissa	53.6	53.1	53.0	57.13	55.15	56.15
16. Bihar	54.9	52.3	52.8	58.21	57.00	57.63

**Source:** Registrar General and Census Commission, Census of India, Paper 2 of 1992, Final Population totals Brief Analysis of Primary Census Abstract

(As ref. by EPW Research Foundation : EPW, vol 29 No- 21 May 1994)

## 4.2(b)

## Distribution of LE over the States of India

Variables	1981-88			1988-91		
	Male	Female	Total	Male	Female	Total
$\bar{x}_1$	59.616	60.96	59.85	62.06	62.86	62.45
$\bar{x}_2$	57.07	58.13	56.8	58.43	58.44	58.46
$s_1$	2.38	2.49	2.06	2.23	1.59	1.78
$s_2$	3.76	6.27	5.07	3.64	6.38	4.97
C.V. <sub>1</sub>	3.99	4.07	3.45	3.58	2.53	2.85
C.V. <sub>2</sub>	6.59	10.79	8.92	6.23	10.91	8.51
Calculated						
t value	.762	.346	.566	1.138	.550	.683

The S.D. had declined over the periods for the first group of States for both the sexes and for the aggregate population. But the S.D. increased in the case of female and had declined for the male population and aggregate population over the years in case of the second group of States. The intra-group disparity is explained by the values of the C.V. The values of the CV had declined for all the sexes and for the aggregate population over the years in the first group of States. But the intra-group disparity had increased in the second group of States in its female population, although it had declined in the case of male population.

#### 4.2.2: Birth rate and Death rate in the States of India

The birth and death rates of the States of India in 1981-83 shows that the national average were 33.8 and 12.1 respectively. These figures declined to 29.5 and 9.8 respectively for birth rate and death rate in India for 1990-92. The State with highest birth rate (38.9) was U.P. in 1981-83 and the State with the lowest rate (25.6) was Kerala. In 1990-92 the State with highest birth rate was still U.P. (35.8) and the State with the lowest birth rate (18.5) was again Kerala. So far as death rate is concerned Kerala registered the lowest (6.6) in 1981 and U.P. the highest (15.7) for the same year. In 1990-92, M.P. became the State with the highest death rate (13.0) and the State Kerala again had the lowest figure (6.1)

**Table 4.3 (a)**

## Death Rates and Birth Rates of the States India

States	Birth Rates		Death Rates	
	1981-83	1990-92	1981-83	1990-92
1. Punjab	30.3	27.5	9.1	7.9
2. Haryana	36.4	32.3	9.8	8.4
3. Maharashtra	29.3	26.3	9.2	7.8
4. Gujrat	34.3	28.3	11.8	8.8
5. Tamil Nadu	27.9	21.0	11.6	8.6
6. Karnataka	28.3	27.0	9.2	8.5
7. H.P.	-	27.9	-	8.7
8. A.P.	31.2	25.6	10.7	9.3
9. W.B.	32.5	26.6	10.6	8.3
10. Kerala	25.6	18.5	6.6	6.1
11. Assam	34.0	30.4	12.4	10.8
12. Rajasthan	38.5	34.4	13.3	10.1
13. M.P.	38.2	35.7	15.4	13.0
14. U.P.	38.9	35.8	15.7	12.1
15. Orissa	31.5	28.9	12.5	12.1
16. Bihar	37.9	31.9	13.6	10.4

Source : *Sample Registration Bulletin, 1994, Vol XXVIII, No. 12*

**Table 4.3 (b)**

## Distribution of Birth Rates and death rates in the States of India

Variables	Birth Rates		Death Rates	
	1981-83	1990-92	1981-83	1990-92
$\bar{x}_1$	31.08	27.06	10.11	8.33
$\bar{x}_2$	34.47	29.57	12.32	10.09
$s_1$	3.17	3.33	1.14	0.36
$s_2$	4.16	5.06	2.63	1.97
$Cv_1$	10.19	12.29	11.30	4.36
$Cv_2$	12.07	17.12	21.32	19.53

Table 4.3 (a) and 4.3 (b) show that the average birth rate and death rate in both the groups had reduced over the period 1981-83 and 1990-92. The values of S.D. increased in the case of birth rate for the first and second group over the periods 1981-83 and 1990-92. Thus the disparity in the distribution within the group had increased over time. In case of death rate this disparity had reduced in both the groups of States over time.

The intra-group disparity is analysed by the value of the C.V. In the birth rate the intra-group disparity had increased over time in the first group of States. In case of death rate it has reduced over period for the same group. But for the second group of States this disparity in birth rate had increased while this disparity in death rate had reduced over 1981-83 and 1990-92.

#### **4.2.3: Infant Mortality Rate (IMR) and its distribution in the States of India:**

Table 4.4 (a) and 4.4 (b) shows that the IMR per thousand had reduced from 107 in 1981-83 to 96 in 1990-92 for India as a whole. In 1981-83 the lowest number of infant death rates (34/1000) came from Kerala and the largest number was (151/1000) in U.P. in the same year. The number of infant deaths has reduced to 17 per 1000 in Kerala in 1990-92 to be the lowest among States and the highest figure was 120 per thousand for the State of Orissa.

A disaggregation of the IMR of the States between urban and rural areas over the same period shows that in all the States the urban people are more concerned about infant health over their rural counterpart. In 1981-83 the IMR of India in rural and urban areas were 116 and 65 respectively. These figures declined to 86 and 52 for rural and urban areas respectively in 1990-92. As expected, both the urban and the rural IMR were the lowest in Kerala (35 and 25 respectively) in 1981-83. The highest IMR (159) was recorded in rural U.P. and also in urban U.P. (99) in 1981-83. The rural and urban IMR declined to 17 and 15 per thousand in Kerala- the lowest figures among States of India in 1990-92. The highest number of IMR was recorded at 124 per thousand in rural Orissa and 73 per thousand in urban Orissa and U.P. in 1990-92.

Table 4.4 (b) shows the distributional features of the IMR in States of India for the two groups of States over 1981-83 and 1990-92. The mean value of IMR was 84.83 for the first group of States in 1981-83 which had declined to 64.5 in 1990-92. Similarly for the second group of States the mean value had decreased from 104.22 to 78.5 over the same period. The calculated and expected t value comparisons show that for the two periods the differences in mean value is insignificant at 1% and 5% level of significance.

**Table 4.4(a)**  
Infant Mortality Rates of the States of India

States	Rural		Urban		Combined	
	1981-83	1990-92	1981-83	1990-92	1981-83	1990-92
1. Punjab	85	61	58	42	79	57
2. Haryana	162	75	60	52	95	71
3. Maharashtra	86	67	53	41	76	59
4. Gujrat	121	74	82	55	111	69
5. Tamil Nadu	100	67	55	40	87	58
6. Karnataka	76	83	45	42	16	73
7. H.P.	-	72	-	37	-	-
8. A.P.	87	76	52	52	81	71
9. W.B.	95	71	50	42	87	66
10. Kerala	35	17	25	15	34	17
11. Assam	102	79	73	44	105	76
12. Rajasthan	113	88	66	58	105	84
13. M.P.	114	118	78	70	134	111
14. U.P.	159	103	99	73	151	98
15. Orissa	136	124	68	73	131	120
16. Bihar	114	74	61	47	110	72
All India	116	86	65	52	107	96

Source : Sample Registration Bulletin, 1994, Vol XXVIII, No. 12

**Table 4.4 (b )**

Distribution of IMR in the States of India

Variables	1981-83	1990-92
$\bar{x}_1$	84.83	64.50
$\bar{x}_2$	104.22	78.50
$s_1$	15.66	6.620
$s_2$	32.64	27.03
C.V. <sub>1</sub>	18.45	10.27
C.V. <sub>2</sub>	31.32	34.42
Calculated t value	-1.35	-0.99

The S.D. of the first and second group of States show a downward trend indicating that the dispersions within both the groups of States had reduced over the period. The intra-group disparity value (indicated by the C.V.) has reduced for first the group of State and increased for the second group over the periods we consider.

### **4.3: Literacy and Other Education Related Indicators:**

The Directive Principles of the Constitution of India (Article 45) stated in 1950 that the State should endeavour to provide, within a period of ten years from the commencement of the Constitution, for free and compulsory education for all children until they complete the age of 14 years. The National Policy of Education, 1968 has also emphasised that strenuous efforts should be made for the early fulfillment of the Directive Principles under Article 45 of the Constitution seeking to provide free and compulsory education for all children upto the age of 14 years. The National Policy of Education 1986 also reiterated the resolve that by 1995 all children upto 14 years age will be provided free and compulsory education.

The Constitution directives has received further boost with increasing research evidences which established the fact that the contribution of primary education in development is very significant and essential. Primary education has its own intrinsic value, enhancing human capabilities to enjoy life including better approach to life and thereby enriching the quality of life (Tilak, 1996).

For this reason literacy and enrolment ratios in school education have become an integral part of measurement of human development in the different HDRs of the UNDP. In this section we shall analyse the trend and distribution of literacy rates and enrolment ratios of the students of Indian States during 1981 and 1991.

#### **4.3.1: Literacy Rates:**

From table 4.5 (a) we see that the overall literacy rate of India increased from 43.47% in 1981 to 52.19% in 1991. The corresponding figures of literacy for male and female were 56.5% and 29.85% in 1981 and 64.2% and 39.19% in 1991. Therefore over the ten years period from 1981 to 1991 there is a clear improvement in the literacy rate of male, female and as a result, of the combined population in India.

For 1981 the figure of literacy in the State of Assam is not available. But among the remaining major 15 States the literacy rates of male and female population were highest in Kerala, they were 87.73% for male and 75.65% for female population. Next to Kerala was the State of Maharashtra where the figures of male and female literacy were 69.65% and

**Table 4.5(a)**  
Literacy Rates of the States of India

States	1981			1991		
	Male(%)	Female(%)	Combined(%)	Male(%)	Female(%)	Combined(%)
1. Punjab	55.56	39.70	48.17	65.66	50.41	58.13
2. Haryana	58.51	26.93	43.88	69.1	40.47	55.85
3. Maharashtra	69.65	41.01	55.83	76.56	52.32	64.87
4. Gujrat	65.14	38.46	52.21	73.13	48.64	61.29
5. Tamil Nadu	68.05	40.43	54.39	73.75	51.33	62.66
6. Karnataka	65.14	33.17	46.12	67.26	44.34	56.04
7. H.P.	64.27	37.72	51.18	75.36	52.13	63.86
8. A.P.	48.83	24.16	35.66	55.13	37.72	44.09
9. W.B.	59.93	36.07	48.65	67.81	46.56	57.70
10. Kerala	87.73	75.65	81.56	93.62	86.13	89.79
11. Assam	-	-	-	61.90	43.00	52.90
12. Rajasthan	44.77	14.00	30.11	54.99	20.44	38.55
13. M.P.	48.12	19.00	34.23	58.42	28.85	44.20
14. U.P.	47.45	17.19	33.35	55.73	25.39	41.60
15. Orissa	56.45	25.14	40.97	63.09	34.68	49.09
16. Bihar	46.60	16.52	32.05	52.49	22.89	38.48
All India	56.50	29.85	43.67	64.20	39.19	52.19

Source : 1. C.S.O.- selected socio-economic indicators

2. As Table 4.2(a)

**Table 4.5 (b)**

Distribution of Literacy Rates in the States of India

Variables	1981			1991		
	Male	Female	Combined	Male	Female	Combined
$\bar{x}_1$	62.60	36.61	50.10	70.91	47.91	59.80
$\bar{x}_2$	56.01	29.49	43.08	63.85	39.77	52.02
$s_1$	5.27	5.04	4.35	3.85	4.20	3.38
$s_2$	12.87	18.13	15.27	11.90	18.37	14.85
C.V. <sub>1</sub>	8.43	13.76	8.69	5.43	8.77	5.65
C.V. <sub>2</sub>	22.98	61.41	35.45	18.64	46.19	28.55
Calculated t value	1.107	1.346	1.021	1.327	0.999	1.18

41.01% respectively . The literacy rate for male population of Rajasthan (44.77%) was the lowest among the 15 States. The female literacy rate of Rajasthan (14%) was also the lowest in 1981.

In 1991 the highest figures of male and female literacy were registered in the State of Kerala. The figures were 93.62% and 86.13% for male and female literacy rate respectively. In 1991, Bihar recorded the lowest percentage of male literacy (52.49%) . The lowest female literacy rate (20.44%) was recorded in Rajasthan again in 1991.

It is interesting to note that in 1981 the percentage figure of literacy of male population of Punjab was even lower than the national average, though it had the highest per capita net SDP in that year among the major States of India. Similarly, the female literacy figure for Haryana was lower than the national average in 1981. Again in the per capita net SDP rank, Haryana's position was the third among the 16 States of our study.

The average literacy rate of the first group of States was 50% in 1981 and it increased to 59.80% in 1991 for all the population combined. The average literacy of male population increased from 62.60% in 1981 to 70.91% in 1991 and that of female population it increased from 36.61% to 47.91% over 1981 and 1991 for the first group. The combined literacy of the second group of States increased from 43.08% in 1981 to 52.02% in 1991. The figures of average male and female population in 1981 was 56.01% and 29.49% respectively. These figures increased to 63.85% and 39.77% in 1991 for the female population of the second group.

From the table value and calculated t values it is observed that the mean difference is insignificant in 1981 and 1991 for male, female and combined population. The S. D. of male literacy in 1981 was 5.27 for the first of group of States and this reduced to 3.85 in 1991. This reveals a reduction in the intra State disparity within the group. This reduction in S.D. value is also true for the female literacy and the combined literacy in the first group of States. For the second group of States the S.D. value of combined population and male population had reduced but it had increased slightly for female population.

The value of C.V. gives the inter group disparity figures. Table 4.5 (b) shows that as compared to the first group of States the value of C.V. is very high for the second group of States in both 1981 and 1991 for male, female and combined population. However, the corresponding value of C.V. for male, female and combined population decreased over 1981 and 1991 showing a reducing trend of the disparity between the groups for the two groups of States.

### 4.3.2. Students Enrolment Ratio :

The UNFP has used mean year of schooling for the construction of educational index upto 1994 and gross students enrolment ration at primary, secondary and tertiary level in 1995 to construct the HDI of different countries. Table 4.6 (a) and 4.6 (b) present the gross enrolment ratio and their distribution in States of India over 1983-84 and 1992-93. The gross students enrolment ratio figures are disaggregated between class I to V (age 6-11 years) and class VI-VIII (11-14 years). The gross enrolment of students in India had increased from 93.4 in 1983-84 to 104.5 in 1992-93 for class I-V. The enrolment figure had improved from 48.9 in 1983-84 to 67.7 in 1992-93 for class VI-VIII.

Table 4.6 (b) shows that the average enrolment ratio had increased from 107.77 to 116.13 for the first group of States between 1983-84 for class I to V and also from 59.8 to 75.9 over the same year for class VI to VIII. For the Second group of States the average figure had also increased over two period of times of both class I - V and for class VI - VIII. The S.D. value of both group of States had increased between the two period in two group of classes revealing an increase in the intra-group disparity over 1983-84 and 1992-93. The inter group disparity figure provided by the C.V. shows declining the trend for the both set of classes in the second group of States. In the first group of States disparity was reduced for the students for class I - V but it had increased for the students for class VI - VIII between 1983-84 and 1992-93.

### 4.4 Income and Related Indicators

The primary objective of this study is to construct and compare the HDI of major States of India and their movement over 1981 and 1991. For this purpose the data on per capita net SDP is essential. We, therefore, take the per capita net SDP for 1980-81 and 1991-92 at current prices. The year 1991-92 is chosen as it is the latest available actual figure published by the C.S.O. so far and used in the Economic Survey of the Government of India (1995-96). It will also be helpful to convert Indian Rupee into the international PPP dollars and be used for international comparison of HDI with the States of India based on HDR 1995, where this year is the base for income of different countries. This year's income was also accepted by Shiva Kumar (1996). Our study of HDI will easily be comparable with the previous one. The choice of 1980-81 has been dictated by the non-availability of data for 1981-82 from a reliable source.

**Table 4.6(a)**  
Students Enrolment ratio of the States of India

States	1983-84		1992-93	
	Class I-V	Class VI-VIII	Class I-V	Class VI-VIII
	(6-11 years)	(11-14 years)	(6-11 years)	(11-14 years)
1. Punjab	103.7	63.5	90.6	67.8
2. Haryana	88.9	54.9	102.8	70.9
3. Maharashtra	125.9	59.9	119.4	80.7
4. Gujrat	111.7	55.3	119.4	79.6
5. Tamil Nadu	129.8	65.3	145.0	101.4
6. Karnataka	86.9	59.9	119.9	65.0
7. H.P.	126.2	87.0	118.0	111.8
8. A.P.	97.3	39.4	108.4	63.7
9. W.B.	96.0	54.5	123.9	93.8
10. Kerala	96.8	90.2	102.8	107.0
11. Assam	62.9	47.6	130.0	77.7
12. Rajasthan	74.8	36.4	91.0	53.9
13. M.P.	80.3	35.0	104.5	68.0
14. U.P.	80.2	42.3	89.3	55.0
15. Orissa	89.5	36.5	96.8	57.0
16. Bihar	82.3	30.5	76.1	34.7
All India	93.4	48.9	104.5	67.7

Source : 1. For 1981-83-- Report of Education Commission, Govt. of W.B., August 1992

2. For 192-93-- Economic Survey, Govt. of India, 1994-95

**Table 4.6 (b)**

Distribution of Students Enrolment Ratios in the States of India

Variables	1983-84		1992-93	
	Class I-V	Class VI-VIII	Class I-V	Class VI-VIII
$\bar{x}_1$	107.76	59.8	116.13	75.90
$\bar{x}_2$	88.25	49.91	102.64	71.51
$s_1$	16.62	3.83	16.81	12.39
$s_2$	15.54	19.40	15.72	22.56
$C.V._1$	15.42	6.41	14.47	16.33
$C.V._2$	17.61	38.88	15.31	31.55

From Table 4.7 we see that in 1981-82 the per capita net national product at current prices for India was Rs. 1630.00 and there were five States in that period where the per capita net SDP had a higher value than the national average. The States, according to their ranking, were Punjab, Maharashtra, Haryana, Gujrat and H.P. Punjab had the highest per capita net SDP at Rs. 2674.00. Among the other eleven States W.B. was with the highest per capita net SDP (Rs. 1612.00) and was ranked 6th among the all 16th States. The lower figure of per capita net SDP (Rs. 917.00) was reported for Bihar.

For 1991-92 the per capita net national product at current prices for India increased to Rs. 5603.00 about 3.5 times higher than the 1980-81 figure. At this point there were six States which had higher per capita net SDP at current prices the highest figure (Rs. 9973.00) was for Punjab. In our studies these six States, Punjab, Haryana, Maharashtra, Gujrat, T.N. and Karnataka constitute the first group on the basis of per capita income higher than the national average. Among all the 16 major States of India the lowest per capita net SDP was reported for Bihar (Rs. 2871.00).

Between 1980-81 and 1991-92 the States of Haryana, T.N., Karnataka, A.P., Assam improved their ranking. T.N's improvement was the highest from the rank of 9th in 1980-81 to the rank of 5th in 1991-92. Between the two period Maharashtra, H.P., Kerala, M.P. and Orissa experienced deterioration in their ranking position. The States of Punjab, Gujrat, U.P. and Bihar had no change in ranking between the two periods.

It should be noted in this connection that in 1991-92 Delhi's per net SDP at current prices was the highest at Rs. 12389.00 among all the States of India. In our analysis for the construction of HDI of the States of India this value will be considered as the targeted highest limit for the States of our study.

#### *Poverty and Inequality in the States of India*

The Planing Commission of India estimated the percentage of people below poverty line of 1983-84 by using the poverty line of Rs. 108.8 per capita per month for rural areas and Rs. 117.5 per capita per month for urban areas at 1983-84 prices. The corresponding rural and urban poverty levels for 1973-74 were Rs. 49.1 and 56.6 respectively. The figure of 1983-84 revealed that there were 37.4% of Indian people living below the poverty line. Bihar accounted for the largest percentage of population (49.5%) living below poverty line in the same year and H.P. accounted for the minimum percentage of people (13.5%) living below poverty line in the same year (Table 4.8).

**Table 4.7**  
**Per Capita Net SDP for the States of India (Current Prices)**  
**1980-81 & 1991-92**  
**(New Series)**

States	1980-81 (Rs.)	Rank	1991-92 (Rs.)	Rank
1. Punjab	2674	1	9973	1
2. Haryana	2370	3	8740	2
3. Maharashtra	2435	2	8063	3
4. Gujrat	1946	4	5994	4
5. Tamil Nadu	1498	9	5878	5
6. Karnataka	1527	7	5833	6
7. H.P.	1704	5	5578	7
8. A.P.	1380	10	5556	8
9. W.B.	1612	6	5527	9
10. Kerala	1508	8	5140	10
11. Assam	1317	12	4594	11
12. Rajasthan	1222	15	4511	12
13. M.P.	1358	11	4377	13
14. U.P.	1278	14	3979	14
15. Orissa	1314	13	3907	15
16. Bihar	917	16	2871	16
All India	1630	-	5603	-

Source : *Economic Survey, Govt. of India, 1995-96*

**Table 4.8**  
Poverty and Inequality in the States of India

States	Percentate of Population below poverty line		Gini-Coefficient of per capita consumption Expenditure (1987-88)	
	1983-84	1987-88	Rural	Urban
1. Punjab	13.8	7.2	.30	.28
2. Haryana	15.6	11.6	.29	.28
3. Maharashtra	34.9	29.2	.32	.34
4. Gujrat	24.3	18.4	.26	.28
5. Tamil Nadu	39.6	32.8	.33	.36
6. Karnataka	35.0	30.1	.30	.34
7. H.P.	13.5	9.2	.28	.28
8. A.P.	36.4	31.7	.31	.36
9. W.B.	39.2	27.6	.26	.35
10. Kerala	20.6	17.0	.32	.36
11. Assam	23.5	22.8	.23	.31
12. Rajasthan	33.3	24.4	.32	.35
13. M.P.	46.2	36.7	.29	.33
14. U.P.	45.3	35.1	.29	.33
15. Orissa	42.8	44.7	.27	.31
16. Bihar	49.5	40.5	.26	.31
All India	37.4	29.9	-	-

**Source :**

1. *Economic Survey, Govt. of India, 1994-95*

2. *Dreze and Sen (1995), India- Economic Development and Social Oportunity, OUP, Delhi*

The estimates of people below poverty line for 1987-88 were derived by using the poverty line of Rs. 131.8 per capita per month for rural areas and Rs. 150.1 per capita per month for urban areas at 1987-88 prices. The estimate shows that the percentage of people below poverty line in India decreased from 37.4% in 1983-84 to 29.9% in 1987-88. In 1987-88 the highest population below poverty line lived in Orissa (44.7%) in the same year the lowest percentage of population (7.2%) living below poverty line were Punjab.

One of the available measures of inequality of the States of India is the Gini-coefficient of per capita consumption expenditure in rural and urban for 1987-88 (Dreze and Sen, 1995). The coefficient values varied from 0.26 to 0.33 in the rural areas of the States of India. In case of urban areas this figure lies between 0.36 and 0.28 for 1987-88. It clearly indicates that inequality per capita consumption expenditure is higher in urban areas of the States than the rural areas.

#### **4.5: Some Earlier Studies On The Construction of HDI For The States of India :**

Shiva Kumar (1991) attempted to construct the HDI of 17 major States of India for 1987 and ranked these States among the countries for which HDI has been constructed in HDR 1990. It has used the per capita net SDP of 1986-87 at a constant price with base 1970-71, projected adult literacy rate for 1987 and LE for the year 1981-86. In this calculation Kerala occupied the highest value of HDI (0.651) and U.P. the lowest value (0.292). It was observed that four States viz; Haryana, Punjab, Maharashtra and Kerala had a HDI value more than 0.5, implying that they were among the medium human developed category countries. The other thirteen States were within the low human developed category countries with a value of HDI less than 0.5. In this study Shiva Kumar converted the per capita net SDP in the real PPP dollars by a very simple arithmetic process. If  $K_0$  is the ratio of per capita net SDP to national per capita income at constant prices in 1987 then India's real per capita GDP in PPP \$ estimated at PPP \$ 1053 for 1987 has been multiplied by  $K_0$  for each State to arrive at an estimate of the level of State's per capita real SDP.

Tilak (1991) applied the UNDP (1990) methodology to Indian data and estimated the HDI for 17 major States of India. Tilak used the logarithm of per capita net SDP at current prices for 1988-89, life expectancy at birth estimated for 1986-91 and literacy rate of 1991 in the construction of HDI of States. Tilak argued that as the study attempted for only one country and for one point of time it was not necessary to make any adjustment for prices or for real purchasing power as was done by the UNDP. In this study the values of HDI ranged from 0.109 in Jammu & Kashmir to 0.775 in Kerala. The level of human development was low in

ten States and it was medium in seven States. Tilak also observed while there was a high correlation between human development and economic growth, poverty and human development were not so correlated.

Dutta *et al.* (1994) constructed the HDI of 17 States of India for four sub periods from 1970-71 to 1990-91. They also constructed the achievement and improvement indices for the Indian States over the same four sub periods with the help of the methodology developed by Kakwani (1993). They have used the State Gross Domestic product and converted all values into 1970-71 prices. The study used literacy rate, Gross Enrolment ratio at various stages of school education, life expectancy at birth, IMR and child mortality rates for its purpose. The study has pointed out the problems in using linear deprivation or achievement indices for health. It has argued in favour of using non-linear measures such that an increase in the indicator, translated into a larger improvement, if it was nearer to the maximum value. The study pointed out increasing trend in the achievement level of health and education for most of the States between 1970's and 1980's. The relative position of various States revealed almost a stagnant pattern of human development. Kerala occupied the predominant position in health and education achievement and poorer in terms of income. The correlation between per capita income and achievement in education or health was low. The study also considered gender bias in education and health, and found that it was falling over time. All States revealed substantial urban bias in infant and child mortality rates but this bias was falling over time. It was also observed that neither anti- female nor anti-rural bias in social sectors in India was highly correlated with income.

Shiva Kumar (1996) computed the HDI and gender-related development index (GDI), for 16 States of India for the period 1991-92. It has emphasised on GDI construction which was based on the methodology provided in HDR 1995. For the conversion of the per capita net SDP of 1991-92 at current prices into the PPP \$ it used its old HDR methodology (1991). The study used LE for 1990-92 and percentage of adult literacy rate for the year 1991. It has not used the gross enrolment ratios due to its misleading and non-satisfactory character. It has used the maximum and minimum values of all the indicators as provided in the HDR 1995.

In its computation of GDI, it was found that there were only 13 countries in the world which had a lower value of GDI than Bihar and U.P. - the two States having lowest GDI values among the Indian States. The low value of GDI in almost all the States in India reflected serious problems of Gender-inequality in India.

#### 4.6: Education, Health and Income Related Indicators in the Districts of West Bengal:

This section attempts to present and analyse the district level data for the State of W.B. relating to education, health and income related variable for the construction of HDI at the district level.

##### *Education:*

In the late 1970's (1977) the Left Front Government took over the legislative and administrative power in the State of W.B. Since then the LF Government has given special emphasis on the eradication of illiteracy, introduction of free compulsory education for all upto higher secondary level, supply of books and papers to the students upto class VIII, developing facilities for non-formal and adult education with the aim of wiping out illiteracy (Chakraborty *et al.* 1993)

Table 4.9 explains the trend of literacy rate in the districts of W.B. over 1981 and 1991. The overall literacy rate for the State of W.B. increased from 48.65% to 57.70% between 1981 and 1991. During the same period the male literacy rate increased from 59.93% to 67.81% and female literacy increased from 36.07% to 46.57% (Table 4.5 (a)). This indicates that the overall performance of female literacy was better than that of the male literacy over the 10 year period.

In our analysis of the districts of W.B. we rank them on the basis of the per capita district SDP at current prices for 1988-89. Thus Calcutta had the highest per capita income and Cooch Behar had the lowest in 1988-89 period. In terms of literacy Calcutta had the highest percentage of literate people in both 1981 and 1991 among the districts of W.B. The percentages of literates increased from 75.33% to 77.61% in Calcutta between 1981 and 1991. The lowest percentage of literate people (28.23%) lived in Malda in 1981.

**Table 4.9**

## Literacy Rates in the districts of West Bengal

Districts	1981 (per cent)	1991 (per cent)
1. Calcutta	75.33	77.61
2. Howrah	60.21	62.62
3. 24 Parganas	54.75	66.81*
4. Burdwan	50.11	61.89
5. Hooghly	57.15	66.78
6. Darjeeling	49.59	57.94
7. Birbhum	40.57	58.56
8. Murshidabad	30.67	38.28
9. Purulia	35.32	43.28
10. Bankura	45.13	52.04
11. Nadia	44.21	52.53
12. Jalpaiguri	35.12	45.09
13. Midnapore	51.47	69.34
14. W. Dinajpur	33.02	39.32
15. Malda	28.23	35.62
16. Cooch Bihar	36.97	45.79
West Bengal	48.65	57.70

**Source :** *Census of India , Table c-2, part IV A*

\* North 24 Parganas.

*The district level figures on literacy pertaining to 1991 are approximations and have been computed by the Education Commission, Govt. of West Bengal, (August 1992)*

In 1991, again Malda recorded the lowest percentage of literate people (35.62%). It is interesting to note that although Midnapore has the rank 13 according to the per capita income it occupies the second position in literacy rate, only next to Calcutta with a figure of 69.34%. Midnapore improved its rank from 5th in terms of literacy in 1981 to 2nd in 1991.

### *Health*

In the sphere of health the State Government emphasised on both preventive and curative sides of health service. Intensification of programmes and activities in the health sector continued by the State Government with the aim at "Health For All by 2000 A.D."

Although there are different health related data like LE and IMR at aggregate State level, it is very difficult to get LE data at the district levels for W.B. However upto 1996, the IMR data for 1991 has not been published officially. Due to this limitation it is impossible to compare the IMR over 1981 to 1991. We are here concerning ourselves with the under 5 year child mortality rate in the districts of West Bengal for 1981 only.

Table 4.10 shows that under 5 years mortality rate in W.B. the best figure (57/1000) of male child mortality was found in Calcutta and the worst value (184) in the district of Cooch Behar. It is interesting to note that in the case of under 5 mortality, although Cooch Behar had the worst value, the probability of survival of a girl child was equal to that of a boy here. The districts in which under 5 mortality rate for girls was better than that of the boys are Darjeeling, Jalpaiguri, Nadia, Purulia and Hooghly. In the other districts as well as for the State as a whole the under 5 mortality rate of boys was lower than the girls per 1000 lives born.

### *Income and Related Indicators*

Table 4.11 shows the share of districts in the per capita SDP at current prices for 1980-81 and 1988-89. The per capita SDP in W.B. at current prices increased from Rs. 1612.00 to Rs. 3423.00 between 1980-81 and 1988-89, indicating almost two fold increase in eight years. Between the two periods rural per capita income increased from Rs. 1179.00 to Rs. 2528.00 and urban income from Rs. 3197.00 to Rs. 5827.00. In the year 1980-81 the best performance in per capita income was shown by Calcutta (Rs. 3156.00) and the worst by Murshidabad (Rs. 983.00). In 1980-81, there were six districts viz. Calcutta, Darjeeling, Howrah, Burdwan, Hooghly and 24 Parganas which had a per capita income higher than the State level. In rural income the best and worst districts respectively were Burdwan (Rs. 1754.00) and West Dinajpur (Rs. 787.00). The best and worst urban per capita income districts respectively were Darjeeling (Rs. 4501.00) and Nadia (Rs. 2289.00).

**Table 4.10**  
**District Wise Under Five Years Child**  
**Mortality Rates for 1981**

Districts	Male	Female	Combined
1. Calcutta	57	66	61
2. Howrah	73	74	74
3. 24 Parganas	81	79	80
4. Burdwan	49	51	50
5. Hooghly	69	62	66
6. Darjeeling	62	50	56
7. Birbhum	90	103	96
8. Murshidabad	107	106	107
9. Purulia	56	52	54
10. Bankura	65	72	68
11. Nadia	103	98	101
12. Jalpaiguri	95	88	92
13. Midnapore	84	89	86
14. W. Dinajpur	90	90	90
15. Malda	85	78	82
16. Cooch Behar	101	101	101
West Bengal	73	74	73

**Source :** *Census of India (1981), Fertility and Child Mortality Estimates of W.B.*  
*Occasional Paper No. 9 of W.B.*

**Table 4.11**  
Per Capita S.D.P. in the District of W.B. (Current Prices)  
Over 1980-81 & 1988-89 (New Series) in Rupee

Districts	1980-81			1988-89		
	Rural	Urban	Total	Rural	Urban	Total
1. Calcutta	-	3156	3156	-	5450	5450
2. Howrah	1425	3355	2219	2874	5919	4307
3. 24 Parganas	1127	3065	1789	2408	5585	4126
4. Burdwan	1754	3224	2114	3627	4296	3985
5. Hooghly	1354	3751	1988	2729	6447	3945
6. Darjeeling	1557	4501	2235	2468	5323	3412
7. Birbhum	1358	2982	1456	3185	5445	3348
8. Murshidabad	821	2909	983	1995	6241	3162
9. Purulia	1187	3465	1363	2629	7178	3003
10. Bankura	1255	2544	1322	2823	5869	2994
11. Nadia	850	2289	1111	2116	4457	2799
12. Jalpaiguri	1036	2593	1197	2364	3989	2776
13. Midnapore	986	2851	1093	2221	5650	2515
14. W. Dinajpur	787	3952	1091	1704	6916	2435
15. Malda	941	2565	986	2078	4980	2254
16. Cooch Behar	871	3202	1000	1811	6644	2154
West Bengal	1179	3197	1612	2528	5827	3423

*Source : Statistical Abstract, W.B., 1978-89 (Combined), Govt. of W.B., Bureau of Applied Economics and Statistics*

**Table 4.12**  
Poverty and Inequality  
In W.B.

Area	Gini Coefficient	FGT Index
Rural	0.29	0.0170
Urban	0.54	0.0105

*Source : Sarvekshana (1991), Issue 48, Vol. XV No. 1*

In 1988-89 the best and worst performers in per capita income were Calcutta and Cooch Behar respectively. In case of rural income Burdwan's performance was the best (Rs. 3627.00) and West Dinajpur's performance was the worst (Rs. 1704.00). Including Calcutta the urban per capita income was the best for Purulia (Rs. 7178.00) and the worst for Jalpaiguri (Rs. 3989.00). In 1988-89 there were six districts viz. Calcutta, Howrah, 24 Parganas, Burdwan, Hooghly and Darjeeling which had a per capita income higher than the State level.

To tackle the problem of inequality and poverty the Government of W.B. adopted and followed an economic policy based on land reforms and decentralisation of administration through the Panchayats (village level local self Government) since the late 1970's.

The achievement in land reforms in the name of "Operative Barga" is noteworthy. According to the 32nd 43rd rounds of the NSS, in W.B. 60% of the total cultivable land is owned by small and marginal farmers while the corresponding all India average is 29%. The figure of W.B. will increase by another 15% if the holdings of the share-croppers are also added. W.B. holds 3.5% of the total cultivable land in India but 48% of the beneficiaries due to land reforms are in this State (Chakraborty *et al.* 1993). Along with the policy of land redistribution the Government has distributed agricultural inputs to the farmers. As a result of the policy of decentralisation and involvement of masses in the process of development, agricultural production increased. Daily wage rate of agricultural workers also increased from Rs. 5.60 in 1976-77 to Rs. 21.50 in 1990-91 (Chakraborty *et al.* 1993).

The estimated value of Gini-Coefficient of consumer expenditure for 1991 in rural and urban areas (Table 4.12) shows to be 0.29 and 0.54 respectively, implying less inequality in rural areas. Similarly the Foster *et al.* (1984) measure of FGI index also gives higher inequality in urban area than in rural area.

#### 4.7: Conclusion

From the review of early literature on the construction of HDI of Indian States some problems and limitations may be observed. In our study we shall try to overcome these limitations in the following manner;

a) The HDR 1990 used the log values of real GDP per capita for the countries on the assumption of diminishing marginal utility of income on the basis of poverty line. This concept was used in HDRs to compare the purchasing power of the standard of living. As it was observed that the per capita income in India in terms of PPP\$ was much less than the international poverty line, the adjustment of income of States of India on the basis of poverty

line has not been done in any earlier study. But the concept of poverty is very useful when we compare the HDI within the States of India. In our study we shall use the concept of diminishing marginal utility on the basis of poverty line in the Indian context in terms of Indian Rupees.

b) The study of Dutta *et al.* (1994) is the only one which compared the change in the value of HDI over a period of time while other studies were concerned only with a particular point of time. In the study of Dutta *et al.* the whole period from 1970's to 1990's was subdivided into four periods. In our study we shall construct the HDI of the States of India over 1981 and 1991 separately and compare and analyse the trend of the HDI values of States of India.

c) All the earlier studies constructed the HDI of States of India with the help of the three variables used in the UNDP's HDRs. New indicators have not yet been used in any study. In our study we shall construct the modified HDI of States with two new variables namely political participation and environmental indicator separately. For the former we use the percentage of votes polled in the State Assembly election and for the latter we shall use the total forest area to total area of the respective States as a proxy of environmental indicator.

d) So far different studies were made to construct only the PQLI at district level. But in our study we shall try to construct the HDI at the district level for the State of West Bengal.