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Severity of Poverty and Status of Public Services in North-Eastern States

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INTRODUCTION

Poverty reduction has been noticed as a significant phenomenon during the past two decades in India. The proportion of people Below Poverty Line (BPL) remained stagnant, around 50 per cent, during plan periods till late 1970s. But this witnessed a declining trend, thereafter. This reduction was noticeable during 1980–90, that is, from 51 per cent in 1977 to 39 per cent in 1987–88, and further to 26 per cent in 1999–2000 (GoI 2001–02). Credit for this trend is mainly given to higher economic growth, improvements in real wages, and impact of poverty alleviation programmes. In the literature on poverty, the issues of relative welfare and levels, extent, and severity of poverty has been discussed with some regularity. Most of these studies are, either available at an all India level, or at best for a few selected larger Indian states. The north-eastern states are outside the purview of many such studies.

In this chapter the focus is on analysing the poverty status and process of poverty reduction in the North-East. The three conventional poverty measures, viz., Head Count Ratio (HCR), Poverty Gap Eatio (PGR), and Foster-Greer-Thorbecke (FGT) are used to quantify the level of poverty. A series of such measures were used to analyse poverty reduction during 1993–2000. In order to highlight the dispersal of poverty levels among the poor, the three sub-groups under BPL, namely, extremely poor, very poor, and moderately poor,

are categorized and identified. This treatment helps in investigating the trend of poverty reduction.

Next, this chapter focuses on poverty and status of public services. Various studies suggest that a two-way relationship may exist between poverty and quality of public services such as drinking water, health care, public distribution system, public transport, and primary education. This study attempts to deal with the following research questions:

1. What is the prevalence of the extent and severity of poverty in north-eastern states?
2. What are the trends in poverty reduction in urban and rural areas?
3. What is the relationship between poverty reduction and status of quality of public services?

The rest of the chapter is organized as follows. First, we discuss the data and methodological issues. Then we deal with the poverty status in the North-East. This is followed by an analysis of dispersal of poverty between rural and urban areas along with temporal changes. After this, the status of access to public services is discussed leading to a conclusion and policy implications.

DATA AND METHODOLOGICAL ISSUES

In this chapter we use data from the socio-economic survey conducted by the National Sample Survey Organisation (NSSO) for two quinquennial 50th and 55th rounds. The reference years are 1993–94 and 1999–2000. During these two rounds of survey, the NSSO collected data on household level consumption expenditure for the agriculture year, that is, from July to June. The socio-economic survey data of NSSO has its reputation for reliability and suitability for the type of study at hand. This data set has two major advantages; firstly, this is in the form of unit record for household level. Secondly, this is the only detailed data that covers the states of north-eastern India.

The official poverty incidence in India is reported at the state level, divided into rural and urban sectors, in a number of studies, for example, GoI (1993, 1997, and 2001). But, in the situation where there exists substantial inter- and intra-state differences in the level of development and incidence of poverty, the state-level analysis does not provide enough insight into the process leading to change in poverty

incidence. As pointed above, we wanted to carry out the analysis at a more disaggregated level. Therefore, we used sub-state (NSSO region) level poverty incidence in the rural and urban sector. This enabled us to do the regional disparity analysis at a fairly disaggregated level.

Level of Living and Poverty Line

For measuring welfare of the population, traditionally, per person income or expenditure has been used. The consumption expenditure is the preferred indicator of standard of living and in turn it indicates the welfare at the household level. To capture this, Average Per Capita Consumption Expenditure (APCTE) is estimated, for the entire population disaggregated by states and NSSO regions, for rural and urban sectors separately.

The poverty norm z, which we use in this chapter, is the Official Poverty Line (OPL) based on the official norm that was derived by a task force in 1979 (GoI 1979). The all India poverty norm for rural and urban sector was derived using the food energy intake method. The task force estimated that, on an average, a representative Indian needs 2435 kilocalories in the rural sector and 2095 kilocalories in the urban sector per day. The cost of these calories worked out to be Rs 49.07 and Rs 56.64 per person at 1973–74 prices for the rural and urban sector, respectively, assuming that education and health care will be provided by the state. The Expert Group (GoI 1993) recommended that the all India poverty norm is to be deflated using state-wise price indices, keeping the average calorie requirement fixed. We have used the state-wise poverty lines that were derived by the Expert Group (1993), and reported in GoI (1997).

It is to be noted that the GoI (1997) recommended that for smaller states and union territories (UTs), the poverty ratios of neighbouring larger states be adopted, as the price data for these states and UTs are not available. For example, the poverty ratios of Assam have been assigned to remaining six north-eastern states and Sikkim. The modification that we introduced in this chapter is that we used the poverty line of the neighbouring larger states in place of poverty ratios as suggested in GoI (1997), and expenditure distribution of the concerned states to calculate the poverty incidence.

Poverty Measures

The simplest index of poverty is HCR, which is defined as:

$$HCR = \frac{q}{n} \times 100 \tag{13.1}$$

where the population consists of n individuals with per capita total expenditure (PCTE), y_i, ranked in ascending order; q is the number of persons below the poverty line z. HCR gives the proportion of the population that has PCTE below the poverty line. One of the main shortcomings of HCR is that it is insensitive to the depth of poverty of the poor person, thus violating what Sen (1976), defined as the monotonicity axiom. This axiom ensures that any poverty index should increase if there is a drop in the income of any poor individually, *ceteris paribus*.

The weighted Poverty Gap Index (PGI) satisfies the above axiom, which is defined as:

$$PGI = \frac{1}{q.z} \sum_{i=1}^{q} (z - y_i) \tag{13.2}$$

where n, q, y_i and z are as defined above. But this measure is insensitive to income transfer against the poor, thus violating Sen's Weak Transfer Axiom—the requirement that any transfer of income from a poor person to any one richer should increase poverty, so long as no one crosses the poverty line as a result. There are several such measures described in literature, which satisfy the transfer axioms.

Foster, Greer, and Thorbecke (1984) developed an index (commonly known as FGT index) which has almost become standard in literature for its simplicity and useful properties, besides satisfying various poverty axioms and being population sub-group consistent. Recall that we are computing aggregate poverty measures as a weighted sum of population sub-groups, state, and NSSO region. FGT (α), a generalized index, is a normalized weighted sum of the poverty gaps of the poor, with weights given by those poverty gaps themselves raised to an appropriate power. The FGT index is defined as:

$$FGT(\alpha) = \frac{1}{n.z^{\alpha}} \sum_{i=1}^{q} (z - y_i)^{\alpha}, \alpha \geq 0 \tag{13.3}$$

where n, q, y_i and z are same as defined above. For α=0, the FGT (α) equals HCR, for α=1, the index equals PGI. For greater values of α, it satisfies the criteria of diminishing transfer sensitivity. In case of α=2, FGT index is defined as:

$$FGT(2) = \frac{1}{n.z^{2}} \sum_{i=1}^{q} (z - y_i)^{2} \tag{13.4}$$

The advantage of using weights independent of position in the distribution ensures decomposability of the index across different household types.

In this chapter we have estimated poverty using all the three poverty indices discussed above. Recall that for $\alpha=0$, from equation 13.3 we get HCR; for $\alpha=1$, it yields PGI and for $\alpha=2$, it is FGT as shown in equation 13.4. The persons living below poverty line were further divided in three sub-groups, namely, moderately poor, very poor, and extremely poor, as per specifications shown in Box 13.1.

Box 13.1

Category	*Persons whose per-capita expenditure is in the following range of state specific poverty line*
Extremely poor	Less than 50 per cent
Very poor	Greater than 50 per cent and less than 75 per cent
Moderately poor	Greater than 75 per cent and below poverty line (BPL)
Total	Total number of persons below BPL

Data on status of public services is based on an all India level survey conducted by a civil society organization, namely Public Affairs Centre, which prepared state-level report cards for rural and urban regions for the year 2001 (Samuel *et al.* 2004). The five basic public services covered are: drinking water, health care, road transport, public distribution system, and primary school. The data on access, use, reliability, and full satisfaction revealed by the households were made available in this survey.

Poverty Status in North-Eastern States

Recall that unit record data is being used from the last two quinquennial rounds of household survey to calculate the incidence of poverty and other poverty indices. Thus, poverty ratios for all the states of the north-eastern region for rural and urban areas along with all India level are reported in Tables 13.1 and 13.2. It is observed from Table 13.1 that poverty in rural areas in the region was only marginally higher in 1993–94, although in 1999–2000, the all India figure (26.5 per cent) is much lower than region (33.31 per cent). While the all India figure shows a steady and continuous fall in poverty incidence, the region has shown an uneven variation over time.

The state-wise breakup of poverty indices in the region highlights the intra-state variations. Table 13.3 clearly shows that there is indeed

Table 13.1: Incidence of Poverty in North-Eastern States in 1993–94

State/ All India	Extremely Poor	Very Poor	Moderately Poor	Poor (BPL)
Rural Poverty (in per cent)				
ARP	2.5	16.1	25.3	48.4
ASS	0.7	12.3	33.0	45.3
MAN	0.1	2.3	16.9	19.2
MEG	0.2	2.9	21.4	24.3
MIZ	0.0	1.3	4.9	6.2
NAG	0.0	0.0	1.9	1.9
SIK	0.0	8.1	23.2	31.3
TRI	0.9	8.7	14.6	23.3
India	2.0	14.7	22.1	36.8
Urban Poverty (in per cent)				
ARP	0.4	1.9	3.9	5.8
ASS	0.2	1.2	6.8	8.0
MAN	0.2	0.4	6.5	6.9
MEG	0.0	0.1	1.7	1.8
MIZ	0.0	0.0	0.0	0.0
NAG	0.0	0.0	0.0	0.0
SIK	0.0	0.0	0.1	0.1
TRI	0.1	1.8	4.2	6.0
India	2.9	15.1	17.7	32.8

Source: Computed from NSSO 50th and 55th round Consumer Expenditure data.

a differential incidence of poverty among the states in the region. This supports the hypothesis that poverty indices, that is, HCR, PGI, and FGT would vary from state to state. The temporal change from 1993–94 to 1999–2000 is not uniform. There is a marked improvement for the majority of states. In both the periods, Assam registers the highest figures as compared to the rest of the sates. A very low level of poverty index (2.85 per cent in the year 1999–2000) could be explained by favourable socio-economic characteristics prevailing in the 1990s, like very high level of literacy rates. The finding that Nagaland has a very low poverty index (0.21 per cent in the year 1999–2000) is not reliable because it was estimated out of limited data due to the known reason that major areas of the state were inaccessible.

As shown in Table 13.3, the poverty status in urban sector among the states is quite low compared to the all India level. Actually, poverty is declining over time, for both the region and the country as a whole. However, the gap between these two has been very glaring. The region has a HCR value less than 5 per cent in 1999–2000 compared to the

Table 13.2: Incidence of Poverty in North-Eastern States in 1999–2000

State/ All India	Extremely Poor	Very Poor	Moderately Poor	Poor (BPL)
Rural Poverty (in per cent)				
ARP	0.0	6.3	17.1	23.4
ASS	1.9	14.8	25.4	40.2
MAN	0.0	2.4	11.7	14.1
MEG	0.0	0.2	5.8	6.0
MIZ	0.0	0.1	2.7	2.8
NAG	0.0	0.0	0.2	0.2
SIK	0.2	3.2	18.5	21.7
TRI	0.2	3.2	13.5	16.7
India	0.8	8.2	18.3	26.5
Urban Poverty (in per cent)				
ARP	2.2	4.1	0.9	5.0
ASS	0.2	2.1	5.1	7.2
MAN	0.0	0.0	0.5	0.5
MEG	0.0	0.0	0.0	0.0
MIZ	0.0	0.0	0.0	0.0
NAG	0.0	0.0	0.0	0.0
SIK	0.0	1.2	3.6	4.8
TRI	0.0	0.4	1.0	1.4
India	1.2	9.2	14.8	24.0

Source: Computed from NSSO 50th and 55th round Consumer Expenditure data.

all India level (23.98 per cent). This clearly suggests that poverty in the region is concentrated in the rural sectors.

Table 13.2 reveals state-wise incidence of rural and urban poverty categorized into moderately poor, very poor, and extremely poor for 1999–2000. It can be seen that magnitude of poverty in all the three categories are higher in Assam as compared to the all India average. Dispersal of poverty is relatively lower in all other states. One trend, which is emerging, is that the proportion of moderately poor is highest among the poor BPL people, both at national and regional level and for urban and rural areas. Assam has the highest concentration of poor people in the rural region followed by Arunachal Pradesh, Sikkim, and Tripura.

In the urban areas, all the north-eastern states including Assam are depicting lower poverty dispersal than all India level. This reveals that the extent of poverty dispersal is concentrated in rural areas. In order to capture the changes in the poverty status, the incidence of poverty dispersal among the three categories of the poor BPL for the

Table 13.3: Poverty Incidence in North-Eastern Region

State*/ All India	HCR		PGI		FGT	
	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000
Rural Poverty						
ARP	41.29	22.50	0.0907	0.0390	0.0302	0.0101
ASS	45.26	40.18	0.0830	0.0844	0.0222	0.0269
MAN	18.94	14.11	0.0230	0.0182	0.0047	0.0041
MEG	24.35	5.96	0.0334	0.0054	0.0073	0.0008
MIZ	6.22	2.85	0.0086	0.0023	0.0018	0.0003
NAG	2.30	0.21	0.0021	0.0003	0.0002	0.0001
TRI	23.64	16.67	0.0532	0.0257	0.0171	0.0064
NER	37.67	33.31	0.0856	0.0680	0.0272	0.0213
India	37.28	26.50	0.0845	0.0518	0.0281	0.0152
Urban Poverty						
ARP	6.05	5.06	0.0136	0.0279	0.0046	0.0204
ASS	7.93	7.23	0.0092	0.0148	0.0023	0.0041
MAN	6.89	0.53	0.0059	0.0002	0.0013	0.0000
MEG	1.81	NA	0.0019	0.0000	0.0003	0.0000
MIZ	1.81	NA	NA	0.0000	0.0000	0.0000
NAG	NA	NA	NA	0.0000	0.0000	0.0000
TRI	NA	2.16	0.0117	0.0029	0.0035	0.0006
NER	6.04	4.63	0.0119	0.0095	0.0038	0.0028
India	31.70	23.98	0.0798	0.0522	0.0291	0.0168

Note: * No statistics is available for Sikkim.
Source: Computed from NSSO 50th and 55th round Consumer Expenditure data.

year 1993–94 are shown in Table 13.1. The change in the incidence of extremely poor, very poor, and moderately poor within the BPL is revealed in Table 13.4. The significant reduction in poverty (10.3 per cent) is noticed along with reduction in the proportion of moderately poor and very poor people. But the real cause of concern is the rise in proportion of extremely poor people by 1.2 per cent in the rural region at the all India level.

Assam shows lower poverty decline along with increase in the proportion of extremely poor people and very poor people in the rural region. Tripura also revealed the increase in the proportion of extremely poor people. This highlights the fact that the process of economic development and state-sponsored poverty alleviation programmes are not working efficiently in these states to tackle the economic problems of extremely poor people. This scenario is differ-

Table 13.4: Change in Incidence of Poverty from 1993–94 to 1999–2000 in North-Eastern States

State/ All India	Extremely Poor	Very Poor	Moderately Poor	Poor (BPL)
Rural Poverty (in %)				
ARP	–2.5	–9.8	–8.2	–25.0
ASS	+1.2	+2.5	–7.6	–5.1
MAN	–0.1	+0.1	–5.2	–5.1
MEG	–0.2	–2.7	–15.6	–18.3
MIZ	0.0	–1.2	–2.2	–3.4
NAG	0.0	0.0	–1.7	–1.7
SIK	0.0	–4.9	–4.7	–9.6
TRI	+0.7	–5.56	–1.1	–6.6
India	+1.2	–6.5	–3.8	–10.3
Urban Poverty (in %)				
ARP	+1.8	+2.2	–3.0	–0.8
ASS	0.0	+0.9	–1.7	–0.8
MAN	–0.2	–0.4	–6.0	–6.4
MEG	0.0	–0.16	–1.7	–1.8
MIZ	0.0	0.0	0.0	0.0
NAG	0.0	0.0	0.0	0.0
SIK	0.0	0.0	+3.5	+4.7
TRI	–0.1	–1.4	–3.2	–4.6
India	–1.7	–5.9	–2.9	–8.8

Note: Positive (+) and negative (–) signs show increase and decrease of poverty respectively.
Source: Computed from NSSO 50th and 55th round Consumer Expenditure data.

ent in the urban regions. The proportions of extremely poor and very poor people have increased in Arunachal Pradesh, while moderately poor people have increased in Sikkim.

It would be of interest to see the profile of these three types of poor people. The comparative picture highlighting this change is shown in Tables 13.5 and 13.6 for rural and urban regions, respectively.

It is clearly shown that the proportion of very poor and moderately poor people has increased both in rural and urban areas. The extent of poverty has increased among rural labour. Almost half of very poor people (47.8 per cent) belong to the class of landless labour in rural regions and other half (47.9 per cent) belong to persons having land-holding up to one hectare. The proportion of 'go-hungry' people has declined slightly, both in the rural and urban areas during this period. In the urban areas, the extent of poverty among the very poor has

Table 13.5: Profile of Very Poor and Moderately Poor in Rural Areas (in per cent)

	SC+ST		Labour (Ag+Non-Ag)		Landless		Land-holding up to 1.0 Ha		Not Got Enough to Eat*		Female Headed Households
	1993–94	1999–2K	1993–94	1999–2K	1993–94	1999–2K	1993–94	1999–2K	1993–94	1999–2K	1993–94
Very Poor	47.2	50.7	56.5	61.3	47.0	47.8	36.7	47.9	12.0	11.0	6.6
Mod. Poor	39.1	42.1	44.2	51	38.7	42.4	38.5	51.5	7.3	5.4	5.9

Note: * Inadequate food either throughout the year or in some months.

Table 13.6: Profile of Very Poor and Moderately Poor in Urban Areas (in per cent)

	SC+ST		Casual Labour		Not Got Enough to Eat*		Female Headed Households
	1993–94	1999–2K	1993–94	1999–2K	1993–94	1999–2K	1993–94
Very Poor	29.0	32.0	30.9	40.3	5.4	4.9	9.5
Mod. Poor	22.8	26.6	20.1	26.0	2.5	2.4	8.2

Note: * Inadequate food either throughout the year or in some months.

increased significantly. A larger proportion of female-headed households belong to very poor and moderately poor classes in urban areas than in rural areas.

Access to Public Services in North-Eastern States

Meghalaya, Mizoram, and Sikkim belong to that category of north-eastern states which have better services than all India in terms of access to public drinking water, health care, and distribution system (Table 13.7).

Table 13.7: Access to Public Services in North-Eastern States

(per cent of households)

State/ All India*	*Drinking Water Facilities*	*Health Care*	*Road Transport*	*Distribution System*	*Primary School*
Rural Areas					
ARP	81	36	23	40	23
ASS	09	38	22	72	74
MEG	69	23	15	54	73
MIZ	68	82	83	89	62
NAG	19	12	48	12	82
SIK	90	45	51	98	17
TRI	49	53	15	47	41
India	55	40	50	60	76
Urban Areas					
ARP	87	49	12	97	37
ASS	10	72	34	89	38
MEG	77	15	10	57	13
MIZ	72	64	80	98	39
NAG	20	23	78	68	09
SIK	90	45	51	98	17
TRI	63	34	39	97	24
India	62	41	60	85	42

Note: * No statistics are available for Manipur.
Source: Derived from Samuel *et al.* (2004)

Mizoram is the only state which has better road transportation facilities than India as a whole. As mentioned earlier, Assam is the only state in the region, which has highest proportion of poor people along with inadequate (public) drinking water facilities (access to 9 per cent population only), health care and road transportation facilities, distribution system, and government aided primary schools. It was expected that access to public services may be better in the urban areas, but the

scenario is not very much different from that of the rural areas. Access to various types of public services in Assam is lower than the national average. Thus, it can be concluded that the states in which extent of poverty is high, the access to public services is also poor. This establishes the fact that there is a positive and strong relationship between poverty levels and access to public services. This study supports the findings of Rao (2007) that strong and effective implementation of social and economic safety nets are very much essential for poverty alleviation.

CONCLUSION AND POLICY IMPLICATIONS

The major findings of the study are:

(1) The extent of poverty varies from state to state in the north-eastern region according to the socio-economic and demographic characteristics;
(2) Poverty declined for most of the states in the region;
(3) This declination was more in urban than in rural areas and, again, more in hill states than in the plains states;
(4) The quality of public services on the basis of access, use, reliability, and satisfaction were worst in poverty stricken states;
(5) The extremely poor households needed up-front intervention if these were to be taken out of long standing poverty; and
(6) The incidence of poor, very poor, and extremely poor exhibited substantial reduction across all the states with the exception in Assam during 1993–94 and 1999–2000.

The findings of this study have important implications in identifying the poor regions and call for target-oriented and region-specific poverty reduction programmes. More importantly, by way of policy implications, it also calls for good governance of the delivery system and strong political commitment. Furthermore, this also helps in identifying the areas/states where poverty still exists significantly and reduction in poverty is not as much as in other better performing regions.

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