

Well-being, Inequality, Poverty and Pathways Out of Poverty in India

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This paper first makes a comprehensive assessment of the performance of states in the post-reform period in terms of growth as well as reduction of income poverty and multiple deprivations. It then investigates whether there is any systematic relationship between growth and poverty and also between growth and inequality for the period 1993–94—2011–12. This analysis helps in understanding the proximate and structural factors underlying poverty and inequality. Based on the empirical analysis and review of approaches adopted by some of the Asian countries which have experienced a rapid reduction in poverty, the paper discusses pathways for India to hasten the process of poverty reduction.

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1 Introduction

This paper provides a comprehensive analysis of changes in the economic well-being of overall as well as subgroups of population of India based on the real per capita expenditure and the Atkinson Social Welfare Function. The analysis enables us to understand whether there has been any significant improvement in the economic welfare of all the subgroups of the population in rural and urban areas in the post-reform period and, also whether the gains of welfare are equally shared. The analysis is commodity centric and is driven by the National Sample Survey (NSS) data on consumer expenditure.

There has been a recent welcome development in terms of shifting from commodity-centric to people-centric measures of economic well-being. The *World Happiness Report*, for instance, ranks countries on the basis of subjective well-being based on people's own feelings. The Social Progress Index (SPI) is another measure of well-being developed by the Joseph Stiglitz Commission on Measurement of Economic Performance and Social Progress. Inspired by it, an SPI has been compiled for a large number of countries. This paper makes a comparative assessment of India's progress on subjective well-being and on social progress among comparable countries.

We begin with a comprehensive assessment of the performance of states in the post-reform period in terms of growth as well as reduction of income poverty and multiple deprivations. Using interstate data for 1993–94, 2004–05, 2009–10 and 2011–12, we investigate whether there is any systematic relationship between growth and poverty and also between growth and inequality. We also analyse relative poverty among different social groups. The analysis will help us in understanding the proximate and structural factors underlying poverty and inequality. Based on our empirical analysis and review of approaches adopted by some of the Asian countries which experienced a rapid reduction in poverty, we discuss pathways for India for hastening the process of poverty reduction.

2 Changes in Economic Welfare and Inequality

2.1 Trends in Economic Welfare: The growth rate of real monthly per capita consumption expenditure (MPCE) accelerated in the post-reform period. In rural areas, the annual growth rate of real MPCE accelerated from 1% during 1983–97 to 1.6% during 1993/94–2009/10, and in urban areas it

inversed to 2.8% from 1.73% during the same period (Table 1). It is evident that the growth rate picked up in the post-reform period and the urban areas gained the most from it. The

Table 1: Annual Growth Rates of Monthly Per Capita Consumption Expenditure by Broad Expenditure Groups (%)

Period	Bottom 30%	Middle 40%	Top 30%	All classes
Rural				
1983–97(URP)	1.22***	0.93***	0.96***	0.99***
1993/94–2009/10(MRP)	1.32***	1.32***	1.92***	1.62***
Urban				
1983–97(URP)	1.36***	1.41***	2.00***	1.73***
1993/94–2009/10(MRP)	1.71***	2.25***	3.32***	2.77***

The growth rates derived from weighted regression estimated with square root of the number of households canvassed in NSS rounds as weights. While estimating the trend equation, an intercept dummy has been included to distinguish between annual and quinquennial NSS rounds. URP: Uniform Reference Period; MRP: Mixed Reference Period.

*** Significant at 1% level.

Source: R Radhakrishna, C Ravi and B Sambi Reddy (2013).

growth rate of MPCE was higher in the second period for all expenditure groups. However, the difference between the two periods was modest for the bottom groups, and strikingly very high for the top groups. While the improvement in the growth rate was 0.10 percentage points per annum for the rural bottom group and 0.35 for the urban bottom group, it was as high as 0.96 percentage points for the rural top group and 1.32 percentage points for the urban top group. It is evident that the growth in the post-reform period was pro-rich and urban groups had higher growth in both the periods.

2.2 Trends in Social Welfare: The Social Welfare (sw) measure shows an improvement in economic welfare over the last two and a half decades and both MPCE and sw reveal the same pattern. Depending on the value given to the inequality aversion parameter, during 1983–97, the sw increased at an annual rate of 1.01% to 1.24% in rural areas and 1.34% to 1.57% in urban areas (Table 2). The sw growth rate tends to increase, though marginally, with an increase in the value of the inequality aversion parameter in rural areas, suggesting a decline in rural inequality during 1983–97, and, in contrast, it tends to decrease with an increase in the inequality aversion parameter in urban areas suggesting worsening of urban inequality in the later period.

During 1993/94–2009/10, sw grew at a rate of 1.36% to 1.53% per annum in rural, and 1.79% to 2.54% per annum in urban areas. Clearly, the growth rate of sw was higher in the post-reform

Table 2: Annual Growth Rates of Social Welfare

Period	ε =					
	0.5	1.5	2.0	2.5	3.0	3.5
Rural						
1983–97 (URP)	1.01***	1.06***	1.10***	1.15***	1.20***	1.24***
1993/94–2009/10 (MRP)	1.53***	1.48***	1.39***	1.37***	1.36***	1.36***
Urban						
1983–97 (URP)	1.57***	1.45***	1.41***	1.38***	1.35***	1.34***
1993/94–2009/10 (MRP)	2.54***	2.17***	2.03***	1.93***	1.85***	1.79***

*** Significant at 1% level.

Social Welfare is evaluated by using the Atkinson Social Welfare Function given by

$$SW_{\epsilon} = \left[\frac{1}{n} \sum_{i=1}^n y_i^{1-\epsilon} \right]^{1/(1-\epsilon)}$$

where

y_i ($i=1,2,3,\dots,n$) is total expenditure of the i_{th} individual and

ϵ is the inequality aversion parameter.

Source: Same as Table 1.

period. As expected, since the inequality trend was positive in both rural and urban areas, the sw growth rate was lower particularly at higher values of the inequality aversion parameter. It is worth observing that at a very high value of the inequality aversion parameter, that is, as the sw approaches the John Rawls Social Welfare Function, the growth rate of sw would be closer to that of the MPCE of the bottom classes. On the whole, in the evaluation of sw if more weight is given to the welfare of the poor, undoubtedly the progress made by India in welfare improvement was modest and as will be seen later, it could have been better had inequality not worsened.

On the whole, it is rising inequality in both the periods, particularly in the post-reform period, that reduced the potential growth in economic welfare.¹ Had inequality remained constant, during the post-reform period, sw would have increased at an annual rate of 1.6% instead of 1.4% in rural areas and 2.8% instead of 2.3% in urban areas. It should also be recognised that growth of MPCE compensated for the adverse effect on welfare caused by rising inequality in MPCE. There are two possibilities for enhancing overall welfare. As we will be seen later, uniform MPCE growth rate across the states would have a positive effect on welfare. It should be noted that the MPCE growth rate lagged behind the per capita GDP growth rate which lowered the growth effect on welfare. It could be argued that it would have affected growth of the saving rate and hence the growth rate. This is a valid argument if there is no inefficiency in capital use and higher MPCE does not improve the productivity of the economy.

2.3 Trends in Inequality: Table 3 shows that during 1983–97 the rural inequality trend was negative but statistically not significant; during 1993/94–2009/10 it was positive and statistically significant. Urban inequality registered a significant positive trend in both the periods, and its growth rate was markedly higher during 1993/94–2009/10. It is also worth noting that the rural–urban gap in MPCE progressively widened during 1993/94–2009/10. Quite clearly, worsening of intra rural/urban inequality and widening rural/urban disparity should be a cause of concern for India from the perspective of enhancing overall economic welfare.

2.4 Food Inflation and Welfare: Some of our studies show that welfare effects of food prices have been found to be significant (Radhakrishna and Sarma 1975; Radhakrishna and Ravi 2004a, b). An increase in cereal price would hurt

Table 3: Annual Growth Rates of Atkinson Inequality (A_{ϵ})

Period	ε =					
	0.5	1.5	2.0	2.5	3.0	3.5
Rural						
1983–97 (URP)	-0.17	-0.19	-0.39	-0.44	-0.50	-0.51
1993/94–2009/10(MRP)	1.39***	1.09***	0.95***	0.83***	0.74***	0.65***
Urban						
1983–97(URP)	1.07*	0.84**	0.75**	0.67**	0.60**	0.55**
1993/94–2009/10(MRP)	2.17***	1.86***	1.71***	1.58***	1.47***	1.57***

Atkinson Inequality A_{ϵ} is given by

$$A_{\epsilon} = 1 - SW_{\epsilon} / \mu$$

*** Significant at 1% level, ** significant at 5% level, * significant at 10% level.

Source: Same as Table 1.

the poor the most and, further, it would aggravate income inequality (Table 4). The welfare effect of a cereal price rise was found to be larger in rural areas than in urban areas.

The welfare effect of non-cereal food price was marginally larger than that of cereal price in rural areas and substantially larger in urban areas (Table 4). This does imply that from a welfare point of view, stabilisation of non-cereal food prices is as important as cereal prices. The larger magnitude of the welfare effect of food prices provides ample justification for maintaining food price stability.²

Table 4: Effect of 10% Increase in Commodity Prices on Social Welfare and Inequality (Percentage change)

c	Price of							
	Rural				Urban			
	Cereals	Non-Cereal Food	Food	Non-Food	Cereals	Non-Cereal Food	Food	Non-Food
Inequality								
0.5	3.34	0.09	3.35	-3.02	1.99	1.35	3.36	-3.34
1.5	3.18	-0.12	2.96	-2.66	1.88	0.99	2.87	-2.87
2	3.08	-0.22	2.77	-2.49	1.82	0.83	2.64	-2.63
2.5	2.98	-0.30	2.59	-2.33	1.74	0.69	2.42	-2.42
3	2.88	-0.36	2.43	-2.19	1.67	0.57	2.23	-2.23
Social Welfare								
0	-2.16	-3.48	-5.55	-3.74	-1.23	-3.46	-4.65	-4.56
0.5	-2.33	-3.48	-5.72	-3.59	-1.42	-3.59	-4.96	-4.26
1.5	-2.66	-3.46	-6.00	-3.33	-1.78	-3.74	-5.46	-3.75
2	-2.80	-3.43	-6.11	-3.23	-1.93	-3.77	-5.64	-3.58
2.5	-2.93	-3.40	-6.19	-3.15	-2.06	-3.78	-5.77	-3.44
3	-3.04	-3.37	-6.27	-3.08	-2.17	-3.78	-5.87	-3.35

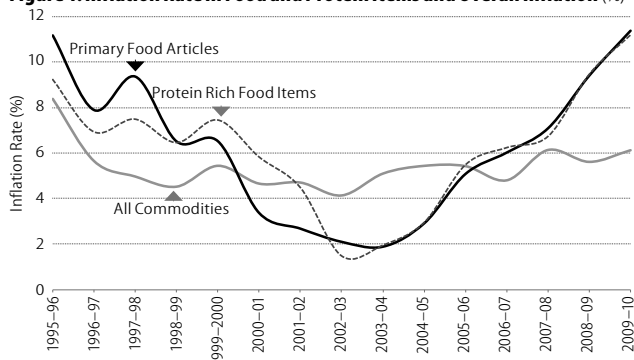
(1) Social welfare and inequality measures are estimated from Atkinson's Social Welfare Function with individual money metric utilities as arguments. The price effects are estimated by re-evaluating money metric utility levels by increasing each price separately and computing the social welfare and inequality. The nominal incomes are assumed to be constant.

(2) The price effects are estimated using the money metric utility measures. The nominal incomes are assumed to be unaffected by commodity price change.

Source: Radhakrishna and Ravi (2004a).

Figure 1 shows that between 2005–06 and 2009–10, food inflation rate as well as protein food inflation rate was higher than that of all commodities. Average food inflation since 2008–09 was higher than food inflation during each of the six preceding decades (Subbarao 2011). This trend would hurt the

Figure 1: Inflation Rate in Food and Protein Items and Overall Inflation (%)



The inflation rates shown in the Figure 1 are three-year moving averages. Source: Author's Computations.

poor both in rural and urban areas. The informal workers whose incomes are not indexed for price rise and whose nominal incomes do not adjust to the price rise would be hurt the most. It is likely that the non-poor closer to the poverty line will be pushed below the poverty line.

3 India's Ranking on Well-being among Countries

UN Sustainable Development Solutions Network, a Global Initiative of the United Nations (UN) brings out the *World Happiness Report*.³ It ensures international comparability of well-being across countries. Table 5 presents the ranking of selected countries based on the Happiness Index. Another index for international comparability of well-being is the SPI.⁴

It is clear from the well-being indices that social democratic countries which follow welfare policies such as Denmark, Norway, Switzerland, Netherland and Sweden performed better than neo-liberal countries such as the us, Japan and Australia. The ranking of the above social democratic countries on happiness is better than their ranking on per capita gross domestic product (GDP). As expected, India ranked below the developed countries. As a matter of fact, none of the less developed counties fared better than developed counties on the basis of either ranking on happiness index or social progress.

Among the developing countries, India fared badly compared to Indonesia, Malaysia, China and Bangladesh. Sri Lanka though ranked higher than Bangladesh and India on a per capita GDP and SPI, ranked lower on the Happiness Index. This could be due to its internal conflicts. During the period of economic crisis, that is, between 2005–07 and 2010–12, the Happiness Index showed a decline for India, Sri Lanka, Pakistan and Malaysia and showed no decline for China, Bangladesh and Thailand. It is to be noted that Bangladesh with half the per capita GDP of India could achieve a higher level of well-being.

Table 5: Measures of Happiness for Selected Countries

S.No	Country	Happiness Index 2010–12			Social Progress Index 2013		Per Capita GDP 2012	
		Value	Rank	Change Compared to 2005–07	Value	Rank	in \$	Rank
1	Denmark	7.69	1	Declined (-0.23)	86.9	9	42,775	17
2	Norway	7.66	2	Increased (+0.26)	87.1	5	66,141	6
3	Switzerland	7.65	3	Increased (+0.30)	88.2	2	53,191	8
4	Netherlands	7.51	4	Increased (+0.05)	87.4	4	43,339	15
5	Sweden	7.48	5	Increased (+0.17)	87.1	5	42,866	16
6	Canada	7.47	6	Increased (+0.03)	86.9	6	41,298	20
7	Australia	7.35	10	Increased (+0.04)	86.1	10	43,818	14
8	United States	7.08	17	Declined (-0.28)	82.8	16	51,749	9
9	United Kingdom	6.88	22	Declined (-0.003)	84.6	13	35,722	26
10	Singapore	6.56	29	Declined (-0.09)	NA	NA	72,724	4
11	Thailand	6.37	36	Increased (+0.53)	65.1	59	13,824	76
12	Japan	6.06	43	Declined (-0.30)	84.2	14	35,618	27
13	Malaysia	5.76	56	Declined (-0.38)	70.0	45	22,280	48
14	Russia	5.46	68	Increased (+0.35)	60.8	80	23,589	43
15	Indonesia	5.35	76	Increased (+0.33)	59.0	88	9,011	100
16	Pakistan	5.29	81	Declined (-0.21)	42.4	124	4,437	129
17	China	4.98	93	Increased (+0.26)	58.7	90	10,960	89
18	Bangladesh	4.80	108	Increased (+0.33)	52.0	99	2,405	148
19	India	4.77	111	Declined (-0.38)	50.2	102	5,138	123
20	Sri Lanka	4.15	137	Declined (-0.23)	59.7	85	9,017	99

(i) The Happiness Index ranges between zero and 10 points. Denmark achieved the highest Happiness Index with 7.69 points out of 10 and ranked 1 and the country Togo with 2.93 points ranked the least, 156. The figures in the parentheses indicate the magnitude of increase/decline in Happiness Index when compared to 2005–07.

(ii) Social Progress Index is measured in percentages and the ranks are assigned for 132 countries. For Singapore the data was not available.

(iii) GDP estimates are at purchasing parity power (\$), and the ranks are assigned for 182 countries, World Bank.

Sources: *World Happiness Report 2013*, *Social Progress Report 2014*, *World Bank Report 2014*.

4 Interstate Growth Disparities and Poverty Reduction

4.1 Per Capita Gross State Domestic Product: There are substantial interstate variations in per capita GDP as well as in growth rates (Table 6). It can be observed from Table 6 that in 2011–12, the per capita GDP of Kerala and Gujarat, respectively, were 5.3 times and 4.6 times that of Bihar. A disquieting characteristic of the growth process in the post-reform

Table 6: Per Capita GDP and Its Annual Growth Rates across the States During 1993–94 and 2011–12 (at 1993–94 Prices)

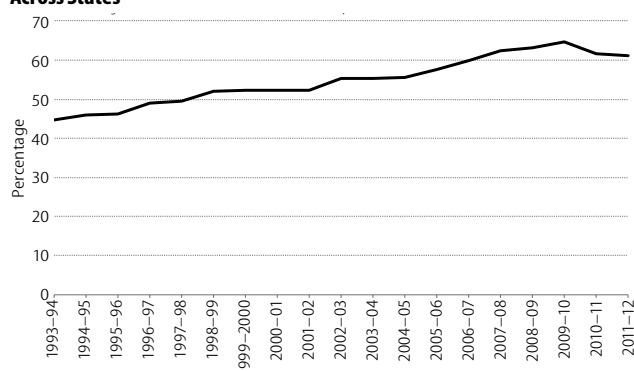
State	1993–94 (Rs)	2011–12 (Rs)	Annual Growth Rate (%)	State	1993–94 (Rs)	2011–12 (Rs)	Annual Growth Rate (%)
Goa	19,824	63,743	6.4	Arunachal Pradesh	9,603	19,692	4.4
Delhi	20,105	59,889	5.9	Tripura	6,074	19,051	6.6
Puducherry	11,574	41,061	7.8	West Bengal	7,458	18,784	5.1
Kerala	8,761	40,490	8.4	Meghalaya	7,957	18,042	4.3
Maharashtra	13,566	35,008	5.3	Rajasthan	7,034	16,837	4.2
Gujarat	11,323	34,702	5.9	Chhattisgarh	7,619	15,726	4.4
Haryana	12,625	33,857	5.8	Madhya Pradesh	7,366	13,881	3.2
Sikkim	8,457	29,567	7.0	Odisha	5,608	13,516	5.3
Tamil Nadu	9,979	28,500	5.2	Jammu and Kashmir	7,545	12,483	2.7
Punjab	14,203	28,292	3.7	Manipur	6,693	11,813	3.3
Himachal Pradesh	8,857	25,038	5.8	Jharkhand	7,125	11,077	2.6
Uttarakhand	7,535	23,627	6.0	Assam	6,422	10,186	2.5
Andhra Pradesh*	8,308	23,252	6.0	Uttar Pradesh	5,745	10,143	2.9
Karnataka	8,706	22,953	5.4	Bihar	3,333	7,612	4.4
Nagaland	10,033	21,230	3.9				

* In this paper AP refers to the undivided state of Andhra Pradesh. Annual growth rates are computed from estimated semi-log trend equation. States are arranged according to ascending order of ranking of GDP 2011–12. Source: Ongoing CESS Study.

period is the widening regional inequality. This may act as a barrier to inclusive growth. The interstate inequality in per capita state domestic product had worsened. The coefficient of variation in the per capita GDP across states showed an increasing trend in the post-reform period till 2009–10 and a decline between 2009–10 and 2011–12 (Figure 2). The factors underlying the decline in coefficient of variation need to be analysed.

An analysis of ranking of states on the basis of per capita GDP and growth during the post-reform period reveals: (i) among major states, Assam, Jharkhand, Jammu and Kashmir, Uttar Pradesh, and Madhya Pradesh, lagged far behind both on per capita GDP as well as growth in the post-reform period, and, on the other hand, though Odisha, Bihar and Chhattisgarh had somewhat better growth performance, their per capita GDP levels were still low; (ii) north-eastern states, other than Sikkim and Tripura, ranked low on current level of per capita GDP as well as on growth performance; (iii) growth performance of Punjab was sluggish, consequently its ranking among major states slipped from 1 in 1993–94 to 5 in 2011–12; (iv) Kerala, Puducherry, Sikkim, Goa, Andhra Pradesh, Uttarakhand, Delhi,

Figure 2: Trends in Coefficient of Variation (%) in Per Capita GDP Across States



Source: Ongoing CESS Study.

Gujarat, Haryana and Himachal Pradesh, in that order, witnessed impressive growth, and, among them, Goa, Delhi, Puducherry, Kerala, Maharashtra, Gujarat and Haryana, ranked higher on per capita GDP in 2011–12. On the whole, poorer states gained less from economic reforms and remained poor in 2011–12 and, on the other hand, the developed states other than Punjab gained the most. The states' experiences demonstrate a lack of inclusiveness in the growth process.

4.2 Interstate Variations in Poverty Reduction: There are substantial interstate variations in the performance in poverty reduction. States such as Goa, Kerala, Himachal Pradesh, Andhra Pradesh, Sikkim, Tamil Nadu, Punjab, Haryana, Meghalaya and Uttarakhand performed better (Table 7). They also had lower incidence of poverty in 2011–12. At the other extreme, Mizoram, Nagaland, Chhattisgarh, Madhya Pradesh, Arunachal Pradesh, Assam, Jharkhand, Uttar Pradesh, Manipur and Bihar performed worst in poverty reduction. These states, except Nagaland and Mizoram, also had high incidence of poverty in 2011–12. It is worth noting that the incidence of poverty worsened between 1993–94 and 2011–12 in Mizoram and remained at the same level in Nagaland. The states with the highest incidence of poverty, namely, Bihar, Chhattisgarh, Madhya Pradesh, Jharkhand, Uttar Pradesh and Assam had witnessed the slowest reduction of poverty in the post-reform

Table 7: Incidence and Performance of States in Poverty Reduction between 1993–94 and 2011–12

State	Best Performing States		Moderate Performing States		Worst Performing States			
	1993–94	2011–12	1993–94	2011–12	1993–94	2011–12		
Goa	20.7	5.1	Puducherry	24.7	9.7	Bihar	60.4	33.7
Kerala	31.3	7.1	Jammu and Kashmir	26.3	10.4	Manipur	65.2	36.9
Himachal Pradesh	34.7	8.1	Maharashtra	47.7	17.4	Uttar Pradesh	48.4	29.4
Andhra Pradesh	44.6	9.2	Rajasthan	38.3	14.7	Jharkhand	60.7	37.0
Sikkim	31.8	8.2	Tripura	32.9	14.1	Assam	51.8	32.0
Tamil Nadu	44.5	11.3	Gujarat	37.8	16.6	Arunachal Pradesh	54.5	34.7
Punjab	22.4	8.3	Karnataka	49.5	20.9	Madhya Pradesh	44.0	31.7
Haryana	35.9	11.2	West Bengal	39.4	20.0	Chhattisgarh	50.9	39.9
Meghalaya	35.2	11.9	Delhi	15.7	9.9	Nagaland	20.4	18.9
Uttarakhand	32.1	11.3	Odisha	59.1	32.6	Mizoram	11.8	20.4
All India	45.1	21.9	Note: Performance of the states in poverty reduction is arranged from the best performed to the least performed.					

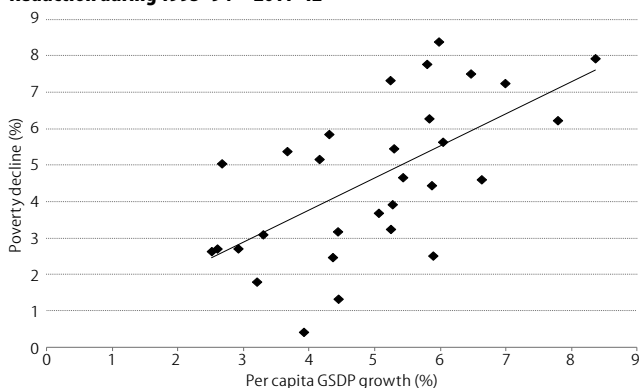
Figures are the percentage of poor in respective states/union territories based on the official poverty line. Performance as suggested by Kakwani (1993) is measured by computing Performance Index: $\{\ln(P_{1993-94} - P_{2011-12}) - \ln(P_{2011-12} - P_{min})\} / \ln(P_{max} - P_{min})$. The maximum and minimum values of poverty considered are: 66% and 5%, respectively.

Source: Ongoing CESS Study.

period. It is evident that poverty was increasingly getting concentrated in Jharkhand, Bihar, Odisha, Chhattisgarh, Madhya Pradesh and Uttar Pradesh. While in 1993–94, 41% of India's poor (rural + urban) lived in these poorer states, this proportion increased to 57% in 2011–12. Their share in poor was much more than their share in population (39% in 2011–12).

4.3 Growth and Poverty Reduction: Figure 3 demonstrates that growth would tend to reduce poverty. However, there are some outliers. Cross classification of states on the basis of their ranking on growth and poverty reduction shows that 15 of the 29 states fall on the diagonal cells (Table 8). The positive outliers on poverty reduction, namely, Punjab, Himachal Pradesh, Tamil Nadu, Haryana and Meghalaya performed better in poverty reduction compared to their growth. The negative outliers, namely, Bihar, Arunachal Pradesh and Chhattisgarh, performed worst in poverty reduction though their growth was moderate. They also had a high incidence of poverty in 2011–12. Clearly, in these three states, growth did not trickle down to the poor.

Figure 3: Scatter Diagram of States by Per Capita GSDP Growth and Poverty Reduction during 1993–94–2011–12



Source: Ongoing CESS Study.

Table 8: Classification of States by Growth and Poverty Reduction, 1993/94–2011/12

Growth Rate of Per Capita GSDP (1993/94–2011/12)	Performance in Poverty Reduction (1993/94–2011/12)		
	Best	Moderate	Worst
Best	Goa, Kerala, AP, Sikkim, Uttarakhand	Puducherry, Tripura, Gujarat, Delhi	Nil
Moderate	HP, TN, Haryana, Meghalaya	Maharashtra, Karnataka, West Bengal, Odisha	Bihar, Arunachal Pradesh, Chhattisgarh
Worst	Punjab	Jammu and Kashmir, Rajasthan	Manipur, UP, Jharkhand, Assam, MP, Nagaland

Source: Ongoing CESS Study.

Among the north-eastern states, Sikkim and Meghalaya achieved substantial reduction in the incidence of poverty, the former with high and the latter with moderate per capita GSDP growth. Tripura had high growth but moderate reduction in the incidence of poverty. The above three states achieved a low incidence of poverty in 2011–12. The other north-eastern states had experienced the worst poverty reduction as well as worst growth performance with the exception of Arunachal Pradesh with moderate growth.

4.4 Can Growth Explain Well-being and Inequality? Radhakrishna et al (2012) examined interstate variations in real MPCE, social welfare, inequality and poverty by estimating a fixed effects model using the price adjusted unit level data of the NSS consumer expenditure for the years 1993–94, 2004–05 and 2009–10 (Table 9). They regressed $\log \text{MPCE}/\text{sw}/\text{Inequality} (A_{2,0})/\text{HCR}$ on \log per capita GSDP.⁵ The results showed that (i) per capita GSDP explained interstate variations in MPCE, sw, Inequality ($A_{2,0}$) and HCR, (ii) the growth elasticity of MPCE as well as sw was positive and significant, and (iii) growth elasticity of sw was found to be less than that of MPCE which is expected since inequality was found to increase with growth.

The growth elasticity of inequality was positive implying that growth would aggravate inequality and growth elasticity poverty was negative, implying that growth would reduce poverty by compensating the negative effect of inequality. The growth elasticity of poverty as shown by the coefficient of per capita GSDP was found to be -0.33.

MPCE was found to be a better predictor of poverty (Table 10, p 64). The poverty elasticity with respect to MPCE was high at -3.49 and with respect of inequality was positive and high at 0.93. Despite the high value of poverty elasticity with respect to MPCE, its value with respect to GSDP was found to be low which can be attributed to the low value of elasticity of MPCE with respect to GSDP. The GSDP is not a good predictor of poverty since it shows what is originated in a state, not what accrues to it. The regression results of $\log A_{2,0}$ presented in the last column of Table 10 show that inequality was positively associated with MPCE.

4.5 Loss in Poverty Reduction due to Interstate Differences in Growth of MPCE: Radhakrishna et al (2013) examined some of the factors which contributed to the decline in poverty between 1993–94 and 2009–10. The simulations carried out by assuming uniform growth of MPCE across all states as well as between rural and urban areas at all-India growth rate (rural+urban) and inequalities in population distribution remained at 1993–94 levels, had shown that the headcount ratio would have declined by 18.9 percentage points instead of the realised rate of decline of 14.3 percentage points between

Table 9: Effect of GSDP on MPCE, SW and Inequality ($A_{2,0}$) and Poverty (HCR) across Regions and over Time—Results of Regression

Independent Variables	Dependent Variables			
	Log MPCE	Log SW	Log $A_{2,0}$	Log HCR
Log GSDP	0.19***	0.12***	0.27***	-0.33**
Dummy: North ^a	0.04	0.08**	-0.17***	-0.27*
Dummy: Central ^a	-0.12**	-0.11**	-0.02	0.28
Dummy: East ^a	-0.14***	-0.11**	-0.11*	0.27
Dummy: West ^a	-0.12**	-0.07*	-0.16***	0.20
Dummy: North-East ^a	-0.15***	-0.03	-0.56***	-0.03
Dummy: Special Category ^a	0.12**	0.16***	-0.17**	-0.58***
Dummy: 2004–05 ^b	0.05	0.05*	-0.02	-0.12
Dummy: 2009–10 ^b	0.10**	0.12***	-0.06	-0.37
Intercept	4.77***	4.98***	1.33***	5.83***
R ²	0.81	0.79	0.57	0.63

*** Significant at 1% level, ** significant at 5% level, * significant at 10% level.

a: reference region is South, b: reference period is 1993–94.

Number of observations in each regression is 87.

Source: Radhakrishna et al (2013).

1993–94 and 2009–10 (Table 11). Hence the gain in poverty reduction under uniform growth would have been 4.6 percentage points. In the simulations, the aggregate MPCE (rural + urban) of all-India was assumed to remain at the same level, hence some states whose MPCE growth was higher than that of all-India had lower poverty reduction under uniform growth scenario than their observed poverty reduction between 1993–94 and 2009–10. The all-India poverty reduction under uniform growth scenario was found to be higher than the observed one, even though its MPCE remains the same. This may be due to the fact that the states with low growth were found to have low MPCE and low inequality in 1993–94 (Radhakrishna et al 2013). States with higher incidence of poverty such as Bihar, Chhattisgarh, Madhya Pradesh, Rajasthan and Uttar Pradesh were found to have a higher reduction in poverty under uniform growth compared to their actual reduction between 1993–94 and 2009–10. States such as Haryana, Punjab and Kerala were the losers in poverty reduction under uniform growth. The loss is due to both reductions in their MPCE as well as their high inequality in 1993–94.

All-India poverty reduction in 2009–10 would have been higher by about 2 percentage points had the inequalities of the states been at 1993–94 levels (Table 11). This could be attributed to a substantial worsening of inequality between 1993–94 and 2009–10 in all states except Jammu and Kashmir, and the north-eastern states; and inequality worsened, more significantly in Kerala, Punjab and Haryana (Radhakrishna et al 2013).

It could be inferred from the preceding analysis that the pathway out of poverty lie, apart from high growth of MPCE, in

Table 11: Simulation Results for Poverty Reduction between 1993–94 and 2009–10: All India and Selected States (%)

Sl No	Simulations	All India
1	MPCE grows at a uniform All-India rate across states and between rural and urban areas with inequalities and population distribution at the 1993–94 levels.	18.9
2	MPCE of states grows at observed rates between 1993–94 and 2009–10 but at a uniform All-India rate between rural and urban areas within a state with inequalities and population distribution at the 1993–94 levels.	17.6
3	MPCE of states as well as rural and urban areas within a state grow at the observed rates between 1993–94 and 2009–10 with inequalities and population distribution at the 1993–94 levels.	16.0
4	Observed reduction of MPCE between 1993–94 and 2009–10	14.3

@ For all-India, growth rate of MPCE is assumed to be uniform across the states and between rural and urban areas and for the states it is assumed to be same between rural and urban areas at the observed (rural + urban) poverty of the state. Source: Radhakrishna et al (2013).

Table 10: Effects of MPCE on Poverty and Inequality A_{2,0}: Results of Regression

Independent Variable	Dependent Variables	
	Log HCR	Log A _{2,0}
Log MPCE	-3.49***	1.19***
Log A _{2,0}	0.93***	
Dummy: North ^a	0.02	-0.22***
Dummy: Central ^a	-0.17	0.10
Dummy: East ^a	-0.19	0.03
Dummy: West ^a	-0.06	-0.02
Dummy: North-East ^a	-0.03	-0.40***
Dummy: Special Category ^a	0.05	-0.28***
Dummy: 2004–05 ^b	0.11**	-0.06
Dummy: 2009–10 ^b	0.11**	-0.15**
Intercept	21.8	-4.09
R ²	0.90	0.68

*** Significant at 1% level, ** significant at 5% level.

a: Reference region is South, b: reference period is 1993–94.

Number of observations in each regression is 87.

Source: Radhakrishna et al (2013).

less developed states such as Bihar, Chhattisgarh, Madhya Pradesh, Rajasthan and Uttar Pradesh, and in a reduction of inequalities in developed states such as Kerala, Punjab and Haryana where inequalities are structural in nature.

5 Poverty among Social Groups

Table 12 provides estimates of incidence of poverty for social groups for 1993–94 and 2011–12. It shows a substantial variation across social groups both in rural and urban areas. The progress made in poverty reduction between 1993–94 and 2011–12 was comparatively better for all social groups in urban areas compared to their counterparts in rural areas (Table 12). Among social groups, the rate of poverty reduction was lower for Scheduled Tribe (st) households. The performance of Scheduled Caste (sc) households was almost the same as that of all groups. The poverty reduction rate of “others” group was much higher than those of all other social groups.

Table 12: Incidence of Poverty and Its Rate of Decline during 1993–94, 2004–05–2011–12, All-India

Social Group	Poverty Ratio (%)		% Change/ Decline (-) Per Annum 1993–2012	% Compound Growth Rate/ Decline (-) Per Annum 1993–2012	Performance Index (%) 2011–12/ 1993–94
	1993–94	2011–2012			
Rural					
ST	65.1	45.3	-1.7	-2	9.7
SC	62.2	31.5	-2.7	-3.7	18.7
OBC	44	22.7	-2.7	-3.6	19.2
Others	44	15.5	-3.6	-5.6	31.9
All	50.1	25.7	-2.7	-3.6	18.9
Urban					
ST	39.9	24.1	-2.2	-2.8	14.7
SC	51	21.7	-3.2	-4.6	24.6
OBC	44	15.4	-3.6	-5.7	32.2
Others	27.8	8.1	-3.9	-6.6	48.5
All	31.4	13.7	-3.1	-4.5	27
R+U					
ST	62.6	43	-1.7	-2.1	10.1
SC	60.1	29.4	-2.8	-3.9	19.8
OBC	39	20.7	-2.6	-3.5	18.8
Others	39	12.5	-3.8	-6.1	36.8
All	45.1	21.9	-2.9	-3.9	21

Performance Index is based on the Kakwani measure of progress.

The first thing to note is that the incidence of poverty was higher for the scheduled groups in all household occupations. Table 13 (p 65) shows the incidence of poverty among social groups and household occupations. The higher incidence of poverty among rural agricultural labour households and among urban casual labour households is likely due to a discrimination in the labour markets since these involve unskilled work.

Distribution of the poor and population by social groups shows that for all-India, the st households accounted for 17.4% of the poor against 8.9% of their share in the population; sc households accounted for 25.4% of the poor against 19% of their population, and Other Backward Class (obc) households accounted for 41.4% of the poor against 44.1% of the population. In Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh, Gujarat and Rajasthan, the share of sts among the poor was higher than that of scs and other social groups. sc households

Table 13: Incidence of Poverty among Social Groups by Type of Households, 2011–12 (in %)

Sector	Social Group			
	ST	SC	OBC	Others
Rural				
SE in agriculture	42.2	28.9	20.3	13.4
SE in non-agriculture	28.3	23.4	19.1	12.5
Regular wage/salary earnings	20.8	12.9	10.3	7.7
CL in agriculture	59.7	41.3	34.8	31
CL in non-agriculture	54.5	32.7	29.7	23
Others	44.3	27.6	16.5	8.2
Total	45.3	31.5	22.7	15.5
Urban				
Self-employed	25.9	23	17.3	9.4
Regular wage/salary earnings	9.1	12.1	7.1	4.8
Casual labour	55.7	37.6	29.5	28.1
Others	12.9	17.9	9.3	4.5
Total	24.1	21.7	15.4	8.1

Source: Estimated using NSS 68th Round unit-level data and Planning Commission's poverty lines.

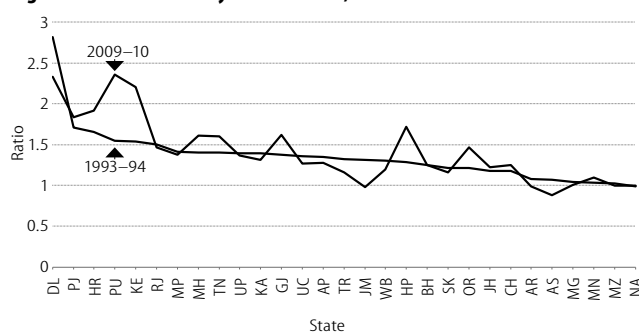
accounted for a bulk of the poor in some states. In 2011–12, SCs accounted for 73% of the poor in Punjab, about 50% in Haryana, and more than 45% in Himachal Pradesh, much higher than their share in the population (Table 14).

Figure 4 shows the relative poverty ratio defined as the ratio of incidence of poverty among the social group (SCs and STs together) to the incidence of poverty among the population. It can be seen that the relative poverty ratio among the SC and ST

Table 14: Percentage Distribution of Poor and Persons by Social Group at State Level, 2011–12

State/UT	% Share of Poor to Total Poor					% Share of Persons to Total Persons				
	ST	SC	OBC	Others	All	ST	SC	OBC	Others	All
Andhra Pradesh	16.1	25.4	43.2	15.3	100	6.5	18.5	49.8	25.2	100
Arunachal Pradesh	65.5	0.5	13.8	20.2	100	69.3	1.3	6.5	22.9	100
Assam	15.4	8.5	28.0	48.0	100	15.5	9.7	27.7	47.1	100
Bihar	2.7	26.8	58.6	11.9	100	1.7	17.9	62.6	17.8	100
Chhattisgarh	42.2	17.7	38.2	1.8	100	33.4	15.3	43.6	7.6	100
Delhi	0.0*	39.6	17.6	42.8	100	2.8	21.0	19.3	56.9	100
Goa	0.0*	25.4*	31.7	42.9	100	6.4	4.2	16.4	73.0	100
Gujarat	38.3	7.2	43.8	10.8	100	18.1	6.6	41.8	33.5	100
Haryana	0.5*	49.4	33.4	16.7	100	0.6	23.0	28.2	48.1	100
Himachal Pradesh	8.3	45.5	6.6	39.7	100	7.2	23.0	18.9	50.8	100
Jammu and Kashmir	13.7*	20.5	8.3	57.6	100	9.5	11.6	12.3	66.7	100
Jharkhand	32.9	16.2	41.7	9.3	100	24.8	15.0	45.1	15.1	100
Karnataka	8.7	26.2	47.2	18.0	100	5.8	16.7	53.1	24.4	100
Kerala	6.6*	18.5	58.3	16.6	100	1.4	9.3	66.1	23.2	100
Madhya Pradesh	38.3	21.4	31.0	9.3	100	23.0	17.3	41.9	17.8	100
Maharashtra	28.2	17.5	28.6	25.7	100	9.0	15.4	34.1	41.6	100
Manipur	39.5	4.6	46.1	9.8	100	34.2	3.8	53.9	8.1	100
Meghalaya	96.0	0.0	0.1	3.9	100	90.9	0.3	0.8	8.0	100
Mizoram	87.3	0.0	10.2	2.4	100	94.3	0.3	3.4	2.0	100
Nagaland	94.1	1.5	1.9	2.4	100	94.7	1.8	0.9	2.6	100
Odisha	40.5	26.0	25.9	7.6	100	21.3	22.0	35.6	21.2	100
Puducherry	2.3	25.2	65.4	7.1	100	0.7	13.0	76.4	9.9	100
Punjab	0.3	72.8	13.6	13.3	100	0.4	38.5	13.8	47.3	100
Rajasthan	41.4	24.5	29.6	4.5	100	15.2	19.3	47.4	18.1	100
Sikkim	36.4	10.6*	49.3	3.7	100	42.3	5.3	45.6	6.8	100
Tamil Nadu	2.7	33.8	63.2	0.4	100	1.2	20.8	75.3	2.6	100
Tripura	62.1	15.0	5.6	17.3	100	37.4	19.6	16.4	26.6	100
Uttar Pradesh	1.0	33.0	57.2	8.8	100	1.2	23.8	54.4	20.7	100
Uttarakhand	4.7	28.2	26.3	40.8	100	4.0	21.6	18.6	55.8	100
West Bengal	12.1	28.7	8.2	51.1	100	5.0	27.2	9.2	58.6	100
All India	17.4	25.4	41.4	15.8	100	8.9	19.0	44.1	28.0	100

*Due to small sample size of NSS the reliability of the estimates of these groups is less. Source: Ongoing CESS Study.

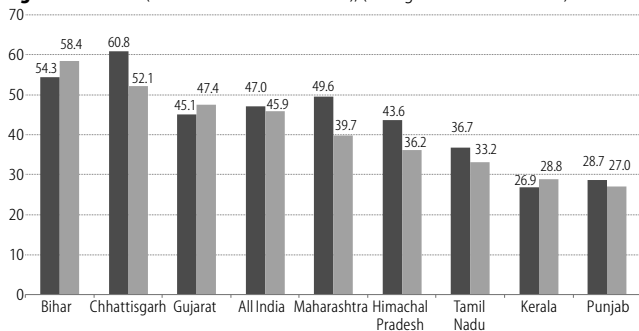
Figure 4: Relative Poverty of SC/ST to All, 1993–94 and 2009–10

households was together found to be more than one (the norm). The relative poverty ratio for SC and ST households together in 2009–10 was about 2.3 in Delhi, Puducherry and Kerala and a little less than 2 in Punjab and Haryana. These are all very highly developed states in terms of per capita GDP. It is also evident from Figure 4 that the relative poverty ratio increased between 1993–94 and 2009–10 in a number of states, particularly in the developed states such as Punjab, Kerala and Haryana.

6 Child Malnutrition

Nearly half of the children of India suffered from malnutrition in 2005–06. This means that about half of the children might not have reached their physical or mental potential and a sizeable proportion of them may be functionally impaired. Since the incidence of malnutrition is higher among the poor communities, it is likely to aggravate inter-generational inequalities. There were significant variations in the incidence of child malnutrition across the states (Figure 5, p 66). In 2005–06, the incidence of child malnutrition varied among the major states from 27% in Punjab, 29% in Kerala and Jammu and Kashmir to 60% in Madhya Pradesh (National Family Health Survey-3 (NFHS-3)). It is to be noted that nutritional status of children and adults in some of the middle-income states such as Kerala and Tamil Nadu was better than that of higher-income states such as Maharashtra and Gujarat. The latter performed badly on social development as reflected in the infant mortality rate, low literacy, and other indicators associated with malnutrition (Figure 6, p 66). More than 80% of households did not have a toilet facility in Bihar and Chhattisgarh. It is worth observing that in Tamil Nadu which had better development indicators, a high percentage of households did not have toilet facility (Figure 6), and in Kerala, a high percentage of households did not have a safe drinking water facility. It

Figure 5: Incidence of Malnutrition (underweight) among Children under Age Three Years (All-India and Selected States), (during 1992–93—2005–06)



looks as if some of the contributory factors of malnutrition are state specific.

The north-eastern states, other than Assam, had better nutritional outcomes and some of them had even outperformed Kerala. Access to forest food, fruits and vegetables from households, better access to communal property and common property, good natural environment and better gender equality, etc, could be some of the factors that might have contributed to their better nutritional outcomes. Despite low per capita GDP, these states performed better on human development indicators also.

While India has been somewhat successful in income poverty reduction, it has not been very successful in reducing malnutrition. Malnutrition is seriously retarding improvements in human development and a further reduction of child mortality. The economic costs of the current scale of malnutrition are high. Improvement of incomes of the poor and supply of environmental and health services are long-term solutions to the eradication of malnutrition. However, in the short run, direct

nutrition interventions should be the priority. Hopefully, lessons can be drawn in the efforts to reduce malnutrition from the success stories of Kerala and Tamil Nadu where severe forms of malnutrition in rural areas declined by half in the past 25 years (Radhakrishna and Ravi 2004b). The factors underlying the better performance of north-eastern states may also give us important clues.

7 Multidimensional Poverty

Radhakrishna et al (2010) attempted to estimate multidimensional poverty by considering three types of deprivations in a household: income poverty, child malnutrition and female chronic energy deficiency in the income and nutrition spaces by integrating two different sets of unit level data—NSS 61st round consumer expenditure data and the NFHS-3 data, adopting the following procedure.

The NFHS data did not collect information on income/expenditure. However, it provided information on a household’s

possession of consumer durables and ownership of assets. Using this information a standard of living index (SLI) was computed for each sample household. A correspondence between the poverty line and SLI poverty line was established by equating the percentage of poor households below the poverty line computed from the NSS unit level data with the percentage of households below the SLI. Since the NFHS covered only households with a woman aged between 15–49 years with at least one child aged below five years, they considered the same group in the NSS unit level data.⁶

The proportion of poor households among the total rural/urban households with a woman aged 15–49 years with at least one child aged below five years was estimated from the NSS household consumer expenditure unit level data. Assuming that these poverty ratios are valid for NFHS households, a new poverty line in terms of the SLI of NFHS-3 was estimated from the distribution of NFHS households for all states with the rural and urban break-ups. All those households, whose SLI was less than the SLI poverty line, were considered as poor.

Table 15 presents two types of multidimensional poverty measures, namely, union and intersection for India with rural and urban break-up. Multidimensional poverty, measured as the proportion of households that was either poor or had at least a stunted child (union of income poverty and child malnutrition) was 75.1% for rural India and 54.0% for urban India, was much higher than that of one-dimensional poverty (either in the income or the nutrition space).

Radhakrishna et al (2010) also considered adult female malnutrition along with income poverty and child malnutrition, multidimensional poverty measured as the proportion of households that is either poor or had a stunted child or a

Figure 6: Multiple Deprivations in Selected States

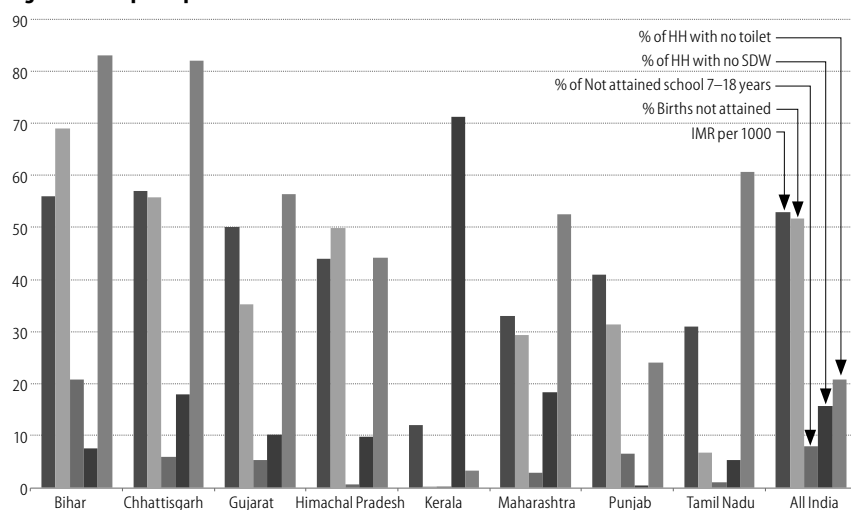


Table 15: Multidimensional Poverty in India

	Poor HH among the HH with a Woman and a Child below 5 Years Age	HH with Stunted Child below 5 Years	Chronic Energy Deficiency (CED) Females	Union of Households with Poverty and Child Malnutrition	Poverty, Child Malnutrition and CED Females	Intersection of Households with Poverty and Child Malnutrition	Poverty, Child Malnutrition and CED Females
Rural	53.4	53.3	43.7	75.1	83.3	31.6	16.3
Urban	33.8	38.1	27.6	54.0	64.2	17.9	7.7
All India (R+U)	48.1	49.2	39.2	69.4	78.4	28	14.1

Source: Radhakrishna R, Ravi C and Sambhi Reddy B (2010).

women suffering from chronic energy deficiency (CED) was still higher at 83.3% for rural India and 64.2% for urban India. Undoubtedly, overcoming income poverty does not ensure freedom from other forms of deprivation. The intersection measure of multidimensional poverty which was the proportion of households that was poor as well as had a stunted child estimated was 31.6% for rural India and 17.9% for urban India, and those having in addition a chronic energy deficient women estimated was 16.3% for rural areas and 7.7% in urban areas. These figures show the approximate size of the hardcore poor in the multidimensional space, which requires priority attention in public intervention programmes. It is worth observing that all the poverty measures show that poverty in the multidimensional space is much higher in rural as compared to urban areas.

8 Multiple Deprivations

Recent household surveys show the worst forms of deprivation. Data from the NFHS-3 of 2005–06, and District Level Household Survey on Reproductive Health (DLHS) of 2002–04 provide useful information on basic deprivations. As many as 45% of children under three years of age suffered from malnutrition (stunted) and 79% of children (aged 6–35 months) suffered from anaemia (NFHS-3). These unfavourable child health outcomes could be, inter alia, attributable to failures in health-care. For instance, 56% of children were not fully immunised and 79% did not receive a vitamin A dose in the last six months prior to the NFHS. The position was equally dismal for women and adolescent girls (10–19 years): 33% of ever-married women (aged 15–49 years) suffered from CED, 58% suffered from anaemia, 59% deliveries were not in institutional agencies (NFHS-3), and 76%

adolescent girls suffered from severe and moderate anaemia (DLHS).

Households' access to basic amenities was equally bad. According to NFHS-3, 32% of households did not have electricity, 58% did not have access to piped drinking water, 55% did not have a toilet facility and 59% of households did not live in pucca houses. These data suggest that the incidence of non-income poverty is much more alarming than the incidence of income poverty.

Most of the health and education indicators for India were worse than in China and Sri Lanka (UNDP 2010). For instance, the infant mortality rate in India at 50 was three times more than that of China and four times more than that of Sri Lanka, the maternal mortality rate at 450 was about 10 times that of China and Sri Lanka. Life expectation at birth at 64 years was about 10 years less than that in China and Sri Lanka. The mean year of schooling of adults at 4.4 years was merely half of that in China and Sri Lanka. What is worse, India fared badly on health and education indicators, even when compared to some of the less developed countries. For instance, Bangladesh with less than half of the per capita income of India improved its position on some of the development indicators and reported better outcomes. It had higher life expectancy at birth, higher mean years of schooling and lower gender inequality.

9 Comparative Assessment of Well-being across Indian States

Table 16 ranks the states on inverse of deprivation index, inverse of income poverty, and per capita GDP. It is evident that all the three indicators showed more or less similar ranking across states. However there are some outliers. It is observed that Gujarat, Haryana and Maharashtra though ranked high on per capita GDP, had a middle position in the ranking on inverse of incidence of poverty and inverse of deprivation; and Jammu and Kashmir with very low ranking on per capita GDP had a low incidence of poverty and placed middle in the ranking on inverse of overall deprivation. Goa, Kerala, Delhi, Sikkim and Himachal Pradesh, in that order, fared better in terms of a low incidence of deprivations as well as poverty followed by Punjab, Jammu and Kashmir, Tamil Nadu, and Haryana. On the other hand, Bihar, Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh, Uttar Pradesh, Rajasthan and Assam fared worse. It is observed that the north-eastern states other than Assam though ranked low on per capita GDP were better placed in terms of a low incidence of poverty and deprivation.

Table 17 (p 68) provides the ranking of the states on progress made in reducing income poverty, deprivations in terms of child malnutrition and illiteracy in the post-reform period, a combined ranking of the three. The following observations can be made. First, in reducing malnutrition, Mizoram, Manipur, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and Maharashtra performed better; and Arunachal Pradesh, Assam, Bihar, Haryana, Madhya Pradesh and Bihar performed badly. Second, in reducing educational deprivation, Uttarakhand, Meghalaya, Nagaland, Kerala, Maharashtra and Tamil Nadu performed better; and Bihar, Jammu and Kashmir,

Table 16: Ranking of States Based on Inverse of Deprivations, Inverse of Incidence of Poverty and Real Per capita GDP

State/UT	Average Per Capita SGP (2009–12) Rank	Inverse of Incidence of Poverty 2011–12 Rank	Inverse of Deprivation Index Rank	Borda Rank
Goa	1	1	2	1
Delhi	2	8	1	3
Puducherry	3	7	NA	4
Kerala	4	2	4	2
Maharashtra	5	17	12	11
Gujarat	6	16	15	12
Haryana	7	10	9	8
Punjab	8	5	6	6
Sikkim	9	4	3	5
Tamil Nadu	10	12	5	9
Himachal Pradesh	11	3	7	7
Andhra Pradesh	12	6	14	10
Karnataka	13	20	16	15
Uttar Pradesh	14	21	24	22
Arunachal Pradesh	15	26	17	20
West Bengal	16	19	18	18
Tripura	17	14	10	13
Meghalaya	18	13	19	16
Rajasthan	19	15	23	19
Chhattisgarh	20	29	21	26
Nagaland	21	18	NA	21
Madhya Pradesh	22	22	25	24
Odisha	23	24	22	24
Jammu and Kashmir	24	9	11	14
Jharkhand	25	28	27	28
Uttarakhand	26	11	13	16
Assam	27	23	20	26
Manipur	28	27	8	23
Bihar	29	25	26	28

Deprivation Index is based on malnutrition; IMR, births not attended by trained functionaries; children not attending schools in the age group 6–14 years; prevalence of child labour; girls married below 18 years; households without access to safe drinking water; households without own toilet facility; households without electricity facility and households without a pucca house.

Source: Radhakrishna (2014).

Andhra Pradesh, Rajasthan and Arunachal Pradesh performed badly. Third, in reducing income poverty, Himachal Pradesh, Jammu and Kashmir, Kerala, Tamil Nadu, Goa and Sikkim showed a better performance; and Mizoram, Nagaland, Chhattisgarh, Delhi, Bihar, Madhya Pradesh and Uttar Pradesh had a poor performance. Finally, on the overall ranking, the performance of Himachal Pradesh was the best followed by Kerala, Tamil Nadu, Uttarakhand and Maharashtra; and the performance of Bihar was the worst, followed by Madhya Pradesh, Jharkhand, Uttar Pradesh, Assam and Arunachal Pradesh. By and large, states with a higher incidence of multiple deprivations in the beginning of the reform period performed badly in the reduction of deprivations.

10 Challenges

The preceding analysis brings out both positive and negative features of poverty reduction in the post-reform period. There are a few major challenges involved in rapid reduction of poverty.

First, it is a challenge to sustain higher growth and macro-economic stability which are necessary for reducing poverty. There are severe constraints in sustaining the high growth witnessed in the last decade of the post-reform period. The growth has come mainly from raising the domestic savings rate to a very high level and to some extent from foreign capital flows and not from productivity improvement. There are limits to a further increase in the savings rate and it may be increasingly difficult to attract more foreign investment flows. Moreover, a dependency on foreign investment flows would expose India to vulnerabilities which affect the poor most. Studies show that the capital stock in the recent past has increased faster than output in some major sectors such as agriculture implying declined productivity of capital.

Second, it is a challenge to reverse the growing income inequality. The private corporate-led growth has aggravated interstate inequality and worsened rural/urban disparity and deepened intra-urban inequality. This has weakened the trickle-down process. Poverty would have declined much faster, if the inequality were contained at least at the pre-reform period. The current concern about a slowing of economic growth and inflation should not obliterate our concern for reversing the growing inequality. For rapid poverty reduction, it is equally important to address (1) worsening inequality, (2) eliminating the worst forms of deprivation in education, health and malnutrition, and (3) poor performance of the public delivery systems. Public health and education should be considered as public goods and central and state governments should not abdicate their responsibility to private agencies.

Third, even with much said about the success in reducing poverty, there are still more than 269 million poor people in India (Planning Commission, Press Release, 23 July 2013). About one-fourth of the households are both poor and malnourished. These households suffer from severe poverty. At present, a majority of the poor including severely poor are getting concentrated in less developed central and eastern states,

that is, Bihar, Jharkhand, Assam, Chhattisgarh, Madhya Pradesh and Uttar Pradesh. These states witnessed the slowest reduction of poverty attributable to their sluggish growth experienced in the post-reform period. Even the high growth of Bihar was not inclusive enough to bring about a commensurate reduction in poverty. It is imperative for sustainable poverty reduction, that India makes continuous efforts to accelerate inclusive growth in these states. What is of concern is the very low flow of private investment and foreign investment to these states due to their low levels of physical and social infrastructure. What is of more concern is the regressive nature of the flow of formal credit to these states. It is a daunting task since their agrarian systems are oppressive and public delivery systems are weak.

Fourth, the north-eastern states had a low incidence of poverty and inequality in the beginning of the post-reform period attributable to high levels of social development which contributed to a high association between growth and poverty. Their per capita expenditure on the social sector in 2011–12 was about double that of general category states (Goswami 2014).

Table 17: Ranking of States on Performance in—Reduction in Income Poverty, Decline in Malnutrition, and Improvement in Education in the Post-Reform Period

State	Income Poverty Decline 1993–2010	Decline in Child Malnutrition			Increase in Literacy			Overall
		Under-weight	CED Women	Com-bined	NSS 1997–2008	Census 1991/2011	Com-bined	
Himachal Pradesh	1	5	13	4	24	5	12	1
Jammu and Kashmir	2	6	10	3	21	30	28	9
Kerala	3	22	2	11	14	3	4	2
Tamil Nadu	4	9	12	9	5	14	5	2
Goa	5	18	8	13	29	6	18	10
Sikkim	6	25	9	19	16	4	7	8
Andhra Pradesh	7	17	15	18	22	28	27	17
Arunachal Pradesh	8	29	29	29	15	27	24	24
Karnataka	9	15	14	15	10	22	16	12
Meghalaya	10	26	1	14	1	11	1	6
Maharashtra	11	2	16	4	12	7	5	5
Tripura	12	12	23	20	20	1	8	12
Haryana	13	27	25	27	17	18	18	21
Uttarakhand	14	11	7	4	3	9	1	4
Gujarat	15	19	20	22	19	15	17	19
Odisha	16	4	17	9	6	19	11	10
Rajasthan	17	8	21	15	25	23	26	21
Jharkhand	18	21	24	24	11	26	21	27
West Bengal	19	10	19	15	26	20	25	23
Punjab	20	14	6	8	13	24	21	15
Manipur	21	3	5	2	8	13	8	7
Assam	22	24	28	27	4	25	12	24
Uttar Pradesh	23	13	22	20	18	17	18	24
Madhya Pradesh	24	23	27	26	9	21	15	28
Bihar	25	20	26	25	23	29	29	29
Delhi	26	16	3	7	28	10	23	20
Chhattisgarh	27	7	18	12	7	16	10	15
Nagaland	28	28	11	22	2	12	3	18
Mizoram	29	1	4	1	27	2	12	14

The state with rank 1 had the highest and the state with rank 29 had the lowest performance in the ranking on reduction of deprivations. The overall ranking was arrived at by combining the ranks on the three indices relating to income poverty, malnutrition and education using Borda Rule. In the overall Ranking of states/UTs, best performed state (Himachal Pradesh) had rank 1 and worst performed state (Bihar) had rank 27. Source: Radhakrishna et al (2013).

However, due to their low growth in the post-reform period, the incidence of income poverty either increased or stagnated. Accelerating growth in the North East is a major challenge.

Fifth, the increasing concentration of poor among SC and ST households who suffer from multiple deprivations is a matter of concern. In the developed states of Punjab, Haryana and Himachal Pradesh, SC households represent a highly disproportionate share of poor. In these developed states, absolute and relative poverty are becoming more a sociological phenomenon making the economic instruments weak in the reduction of poverty. Since governments of these states have adequate fiscal resources they can eliminate poverty provided that they overcome sociological barriers. In Chhattisgarh, Rajasthan and Odisha, ST households account for more than 40% of the poor. These states are facing a double burden, that is, low growth and high incidence of multidimensional poverty. The per capita development expenditure as well as per capita social expenditure are low in these states.

Sixth, while India succeeded in income poverty reduction, it has not been very successful in reducing malnutrition.⁷ The rate of reduction of the incidence of malnutrition has been slow. About half of the population, especially children and women belonging to the vulnerable groups suffer from various forms of malnutrition, including micronutrient deficiency, and a quarter of them suffer from severe malnutrition. Malnutrition is seriously retarding improvements in human development and further reduction of child mortality. The economic costs of the current scale of malnutrition are high. The improvement of incomes of the poor and supply of environmental and health services are the long-term solutions to the eradication of malnutrition.

Seventh, the farming community is often exposed to periodic shocks pushing small and marginal farmers into the debt-trap. Rising health and education expenses also contribute to farmers' distress. According to a recent survey, about 40% of farm households of Punjab stated that health problems were the biggest cause of financial distress. Because of various structural barriers, the flow of formal credit to tenant farmers leaves much to be desired.⁸ Farmers' distress may persist because yield-improving technological progress has levelled off. Hence agriculture will become unviable unless there is a significant cost-reducing technological progress and also creation of opportunities in the labour-intensive rural non-farm sector.

Eighth, in India, informal workers constitute 92.3% of the total workforce and the informal sector's share in the gross value added is about 50%. It is a fact that in India, high growth in the post-liberalisation period has been accompanied by increased informalisation and de-unionisation. A sizeable portion of workforce is engaged in subsistence production. This segment is at the bottom of the production ladder, providing cheap labour. Economically and socially deprived sections of the society are mostly employed as casual labour. Informality is linked with poverty. Women are particularly involved in the informal economy. However, there is some degree of dynamism in some segments of the informal sector which have interlinkages with the formal sector. These sunrise enterprises have positive productivity

growth as well as positive employment growth. It is a moot question whether these will expand to cover the rest of the informal segments. It is also a moot question whether the employment in the sunrise enterprises is of a decent type.

11 Ways Ahead

What should be done to accelerate the process of poverty reduction? While, growth is necessary for poverty reduction, it may not trickle down to the bottom groups unless some pre-conditions are met. There is a need to go beyond the establishment of social safety nets to protect the vulnerable groups from the risks, and focus on providing decent employment and raising incomes of the poor through explicit policy interventions. The experience, by and large, is that countries which are most successful in reducing poverty are the ones which have combined rapid growth with equity in promoting the growth. In such a strategy, public policies influence both the distribution of income and the process of income generation. It needs to be emphasised, however, that the importance of growth cannot be ignored. A strategy which focuses primarily on reducing inequality through redistribution of income but ignores growth is unlikely to lead to a sustained process of poverty reduction. It may undermine the incentive system, and also impose serious constraints on finding the resources necessary to finance the targeted anti-poverty programmes in the absence of growth. Therefore, growth needs to be rapid enough to significantly improve the absolute conditions of the poor. And to have the maximum impact of growth, there should also be an improvement in the relative position of the poor in incremental income and this should be more than their share in the average income. The increase in the income share of the poor is bound to induce better and sustainable growth by generating adequate demand and incentives for more investment.

The routes followed by some of the developing countries in Asia which experienced rapid reduction of poverty and improvement in human development are not unique (ESCAP 1966). They could achieve speedy reduction in income poverty and multiple deprivations and eliminate childhood poverty in a short span of time.⁹ Rao (1996) argues that, the initial conditions for growth and poverty reduction in East Asian countries such as China and South Korea were more favourable for rapid growth and speedy poverty reduction than in India. Implementation of radical land reforms, mobilisation of adequate resources by the state for investment in physical infrastructure as well as human development were common elements in their efforts to achieve poverty reduction, though their ideologies and sociopolitical systems were differed (Rao 1996 and 1998). In China, in addition to radical land and other structural reforms, peoples' capabilities were significantly improved through expanded health and education facilities, the development orientation of the ruling elite, and the strength of the public institutions (Malik 2012). George (1996) noted that decentralisation, with devolution of control over economic issues, resources and revenues, was a major factor behind economic growth and trade expansion in the 1980s. In China's development policy, focus on small and medium enterprises

played an important role in growth and employment (Pasha and Palanivel 2003).

Though many components of reforms such as radical land reforms, de-bureaucratisation, and decentralisation of development figured in Indian plans, they could not make much headway because of resistance from pressure groups (Rao 1998). Had radical land reforms been implemented soon after independence and the required investments were made in human development and infrastructure, India could have achieved a sharp sustained reduction in poverty. Though many radical reforms are not politically feasible in India, there are some positive developments due to the electoral processes such as implementation of nationwide rights-based programmes such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), food security, Right to Education, etc, and income improvement programmes such as the National Rural Livelihood Mission. If they are properly implemented, marginalised groups may emerge as pressure groups and this may lead to a socially just economy. What seems to be feasible in India is an incremental approach rather than a radical one to improve the living conditions of the vulnerable groups. This should be complemented by a labour-intensive process of development and needed institution building.

Since a large number of poor depend on agriculture for their livelihood, achieving the goal of poverty reduction as well as inclusive growth depends on improvement of agricultural productivity and processes that facilitate migration of agricultural workers to expand and diversify the rural non-farm sector. These will contribute to the diversification of employment opportunities as well as household income. This has been the process of transition towards an industrial economy in many East and South Asian countries which experienced a sharp reduction in poverty (Barker and Dawe 2001).

Institution building and technological innovations are necessary to promote broad-based agricultural growth. Starting at the ground level, there is a need to develop collective institutions such as, self-help group (SHG) federations to bring together farmers particularly tenants, small and marginal farmers to act collectively. This would improve their access to development

agencies as well as strengthen their bargaining power in local transactions. They may be organised into producer cooperatives to reap the advantages of scale. Though there have been institutions like farmers' producer companies and joint liability groups of small farmers and tenants, the progress in their expansion is very tardy. Special efforts are to be made to accelerate the growth of these institutions. Another category of institutions relating to governance are panchayati raj institutions (PRIs) which can be entrusted the task of local level planning and implementation of programmes for infrastructure as being done in Kerala. Collective institutions and PRIs could motivate the poor farmers to shed their passivity and to play an active role in the local-level institutions of governance. Mainstream institutions through which the economy operates would need to be made pro-poor and bring a balance between the rural and urban, between regions and social groups. The most important issues related to farming communities are reducing regional inequalities, maintaining livelihood security, and improving the well-being of women and children. Along with these, issues such as the educational and health status of farmers should be addressed.

Moreover, small enterprise clusters have emerged as hubs of economic activities in East and Southeast Asian countries. It is necessary to learn about the role of the state, local institutions and industrial organisations in the formation of some successful industrial clusters in India such as the Tiruppur knitwear cluster. With necessary policy and infrastructure support, they can emerge as engines of industrial growth in peripheral areas. The education levels of farm workers are far behind those of their urban workers. This restricts decent employment opportunities to the rural workers. Migrant labourers from rural areas are normally employed as casual workers in the lower rungs of the informal sector. Education and skill development are essential to facilitate migration for more productive and regular off-farm employment for the rural workforce. Since education gives the highest returns to both rural economic growth and poverty alleviation, it should be considered as a public good and should be accorded priority in public investment. It should be noted that private investment cannot be a

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substitute for public investment especially in strengthening access to public goods.

Poverty alleviation programmes are top down in nature and the poor are normally passive in them. They are not very effective since they do not take into consideration the needs of the people. For effective poverty alleviation, social mobilisation and empowerment of the poor is the first basic step. This has been very successfully done through the formation of SHGs, particularly those of the poor women. The earlier assumption about poverty alleviation is that the poor could be assisted to enable them to raise their income which, in turn, would address all the multiple deprivations at one go, is proving wrong.

Income rise and its sustenance is a slow process. Hence, basic deprivations of the poor need to be addressed directly through public support systems. Some of the other important steps needed are to improve capabilities by providing skill training to the poor; use science and technology in the process of poverty reduction as being done in MGNREGA in Andhra Pradesh; make poverty alleviation programmes development-oriented as being done by Bharatiya Agro Industries Foundation (BAIF), intensify social auditing and monitoring of poverty funds use; give more powers to local PRIs as in Kerala, and above all, there should be political commitments to the cause of inclusive growth.

NOTES

- The social welfare function can also be expressed as $SW_e = \mu (1 - A_e)$ where, μ is the mean income and A_e is the Atkinson inequality. In the extreme case of perfect equality $SW_e = \mu$ that is, mean of y . μA_e may be considered as the welfare loss due to inequality.
- We have a recent study based on panel data on children shows that an increase in food price adversely affected nutrition status of children. See Galab, S and Reddy (2013).
- In its framework, well-being has three distinct components: (i) life evaluation, that is, the cognitive judgment by a person about their life as a whole, (ii) positive effect, that is, the experience of positive feeling and emotions by the person at a particular point of time, and (iii) negative effect that is, the experience of negative feelings and emotions by a person at a particular point of time. Countries were ranked on the basis of happiness during 2010–12 and the world happiness report 2013 was put on in public domain.
- Social Progress Index is based on three distinct dimensions of a society: (i) Basic Human Needs (adequate nutrition; water and sanitation; shelter; personal safety), (ii) Foundations of well-being (basic education; access to information and communications; health care; and environmental sustainability), and (iii) opportunity (personal rights; personal freedom and choice; access to higher education, and environment tolerance and inclusion) has been compiled for a number of countries. Each of the dimensions is disaggregated into four components and each component covers three to six indicators. A large number of individual indicators have been considered for each element and simple methodologies for aggregation have been suggested.
- More appropriate variables would have been mean and inequality in household incomes. However, relevant data on these variables do not exist. Omission of income inequality among the regressors may give rise to the endogeneity problem. It may result in downward bias in the estimates of the growth effects of MPCE and SW since income inequality may have a negative on MPCE and SW and is positively correlated with per capita GSDP. On the other hand it may result in under estimation of the growth elasticity of poverty since income inequality worsens poverty. Data does not permit the use of more sophisticated econometric methods to address the problem of endogeneity.
- Households with a woman and a child below five years age constituted about a third of the NSS sample households. The incidence of poverty among these households was higher as compared to all households.
- However, Rapid Survey on Children conducted by Ministry of Women and Child Development

- and UNICEF has shown that the proportion of children under age of five as falling from 42.5% in 2005–06 to 29.4% in 2013–14, the number of breast fed and the age of six months from as short of from 46.4% to 64.9% during the same period. These are undoubtedly positive development and need to be sustained.
- A recent study on agricultural credit in India revealed Bihar, Jharkand, Odisha and West Bengal in the eastern region and Madhya Pradesh and Chhattisgarh in the central region and north-eastern region fared badly in institutional credit disbursement and what is of more concern, there had not been any improvement in the credit shares during 1995–2011 (EPWRF 2014).
 - Fan et al (2000) report, "In 1978, 260 million residents in rural China or 33% of the total rural population, lived under the poverty line and had inadequate food and income to maintain a healthy and productive life. But this changed dramatically after the rural reforms began. Immediately after the reform, farmers' income soared.....The income gains were shared widely enough to cut the number of rural poor, hence, the rate of rural poverty, by more than half. By 1984, only 11% of population lived below the poverty line." Clearly, in a span of six years China could achieve what India could not achieve in two decades in the post-reform period. However, income inequality which increased moderately in this period, rose rapidly in the subsequent period and has become a cause of concern for Chinese political economy. Economic growth also could not reach extreme people lived in remote areas. Recognising this, China started nationwide poverty alleviation in 1986 to improve the basic production conditions and basic infrastructure in poor areas as well as human quality in poor areas by comprehensive skill training.

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