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Understanding Poverty in India

Asian Development Bank

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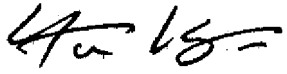
Preface

This publication seeks to develop a comprehensive poverty profile for India in view of the on-going national and global efforts at bringing down poverty levels and in ensuring that growth is inclusive. The studies were conducted by the India Development Foundation (IDF) and National Council of Applied Economic Research (NCAER), both based in New Delhi.

Section I of the volume begins with the definition of poverty in its various manifestations; estimates the incidence of poverty both in its extent and intensity given that public policy derives crucial information from poverty estimates; analyzes the factors that affect poverty levels; and finally, highlights the policies and initiatives that have over the years been specifically designed and implemented to reduce poverty. The poverty profile so created is expected to enable one to reassess and improve on the existing methodologies in estimating poverty rates, evaluate the effectiveness of existing poverty targeting programs, and suggest other alternative/complementary options for strategic intervention based on the lessons drawn from the experiences from program implementation both at the state and national levels.

To understand the strategies of poverty reduction more specifically, Section II examines the policy interventions in three specific areas where there are expectations of significant direct and indirect impact on poverty. The three areas selected for specific assessment are policies and programs in health and education in social infrastructure; financial inclusion in economic infrastructure; and rural roads and rural electrification in physical infrastructure.

ADB as an institution is committed to poverty reduction and inclusive growth. We hope that this volume will help policy makers and academia in further strengthening knowledge solutions for combating poverty.



Hun Kim
Country Director
India Resident Mission

I

Poverty in India: Conceptualization and Methodological Issues

1 The Challenge of Poverty: An Overview

One of the ironies of our rapidly developing and increasingly progressive world is that poverty continues to remain widespread and rampant, and the vulnerable population seems to have grown ever more vulnerable. Even as we continue to talk of expanding opportunities and new sectors of growth, it is equally true that all-pervasive phenomena such as population explosion, colonial exploitation, and governance failures have accentuated the lack of adequate income-earning opportunities and productive investment incentives, and increased the vulnerability of the population to livelihood shocks. While it is true that development efforts for almost six decades since the Second World War led to the the transition of some of the less developed economies in the East Asian and South East Asian regions to developed economies with per capita income levels of over $10,000, many economies in Africa and South Asia continue to have large populations with income levels less than a 'dollar a day'.

Dimensions and Incidence of Poverty

The incidence of poverty in India is a matter of key concern for policy analysts and academic researchers both because of its scope and intensity. National poverty line estimates[1] indicated a poverty incidence of 27.5 percent in 2004–2005, implying that over one quarter of the population in India lives below the poverty line. Also, in absolute numbers, India still has 301.7 million poor persons with a significant percentage of them being substantially or severely poor in terms of the norms identified as being necessary for survival.[2] If one considers the international poverty line of $1 per day (measured at 1993 purchasing power parity exchange rates), then the percentage of poor people in India is even higher, at around 34 percent. This percentage is pushed up to an alarming level of 80 percent if one uses the $2 per day as a poverty threshold[3]. A recent ADB study.[4] defined an Asian Poverty Line of $1.35. On this basis two-thirds of India's population or around 740 million Indian people live in poverty. The significance of

India in the context of world poverty is apparent given the fact that around half of the world's poor live in South Asia and of the 534 million people in South Asia who lived on less than $1 per day in 2003, over 300 million lived in India. The Suresh Tendulkar Committee estimated over 430 million (37.2 percent) below the poverty line based on a bundle of deprivations. The recently introduced multi dimensional deprivation index (MPI)[5] also places about 645 million (55.4 percent) Indians below the poverty line. In terms of non-income dimensions of poverty too, such as infant and maternal mortality rates, literacy levels and gender inequalities, India continues to display 'intense poverty'.[6]

The Growth–Poverty Nexus

The Indian economy has been one of the leading performers globally in recent years. The process of reforms initiated in 1991 has impacted significantly on growth rates in the Indian economy. The long-term trend rate of growth increased from 3.5 percent during the period 1950s–1970s to 5.4 percent in the 1980s, 6 percent in the 1990s, and to above 7.3 percent[7] in recent years. Relative poverty estimates broadly show a decrease in poverty level with growth. National poverty line estimates[8] indicate that there has been a decrease in poverty incidence from 54.9 percent in 1973–74 to 36 percent in 1993–1994 to 27.5 percent in 2004–2005, though poverty numbers remain high. In 2004–05, the rural poverty was 28.3 percent and the urban poverty was 25.7 percent. Chronic hunger, hunger based on seasonal drought and vulnerability and hidden hunger due to nutritional deficiencies has kept around 225 million people under some form of food insecurity.

Inclusive Growth

'Inclusive growth means growth with equal opportunities. Inclusive growth focuses on creating opportunities and making the opportunities accessible to all. Growth is inclusive when it allows all members of a society to participate in and contribute to the growth process on an equal basis regardless of their individual circumstances.'[9]

To take it further, inclusive growth addresses 'bad' inequalities which are an outcome of distortions, geographical, social, human resource, economic, institutional, and political.[10] Good inequalities, on the other hand, arise from innovation, entrepreneurship, and hard work and related market incentive systems.

In order to understand the phenomenon of inclusive growth further, we can look at India's Eleventh Five Year Plan which defines its various facets. These translate into the following broad dimensions:

- To bridge the divide between rural–urban; different states; backward and non-backward districts; those below and above the poverty line; those in productive jobs and the under-employed and unemployed.
- Growth processes that include primitive tribal groups, adolescent girls, women, marginalized groups and others who do not have strong lobbies to ensure that their rights are guaranteed.
- Emphasis on critical programs to support livelihood provision to the poor, including agriculture and the rural non-farm sector.
- Critical role of the private sector (farming, small-scale enterprises, and corporate sector) in creating inclusive growth as it accounts for 71 percent[11] of the total investment.

While economic growth is a powerful tool for poverty reduction, the impact of higher growth on poverty reduction depends significantly on the pattern of growth and levels of inequality. Owing to rapid growth in recent years, the Indian economy has also undergone significant structural changes. Inclusive growth has therefore become a major policy priority and is defined as a process whereby the benefits of growth are shared by a vast proportion of the population.[12]

Patterns of Gowth and Poverty

Structural Changes

Due to structural changes in the Indian economy, the share of the agriculture and allied sector in the GDP reduced to 18 percent in FY2007, compared to the relative increase in the shares of the services and manufacturing sectors to 56 percent and 26 percent respectively in the corresponding period. Given that over 72.2 percent[13] of India's population lives in rural areas and 56 percent of it draws its sustenance from agriculture and allied activities, there is a pressing need to increase productivity in the sectors that sustain the rural economy.

Regional Disparities

Regional disparities in income poverty continue to persist. Regional disparities in human development persist with state-level MPIs ranging from a high of 0.49 in Bihar and 0.46 in Jharkhand to a low of 0.06 in Kerala and 0.12 in Punjab. The MPIs for Scheduled Tribes are as high as 0.48 compared to the overall levels of 0.15 for general categories.[14]

Rural–Urban Divide

The rural–urban divide manifests itself through disparities in several development indicators including per capita income, literacy, infant mortality, access

to education, health care, drinking water, sanitation, among others. Three hundred and thirty-two million people i.e., 73 percent of India's poor live in rural areas.

Gender Dimensions

It is interesting to note that growth has not necessarily led to positive gender outcomes. Maternal deaths account for 15 percent of deaths of women in the reproductive age group, and literacy levels among women are 54.2 percent versus the figure of 75.9 percent for males.[15] The low sex-ratio is another cause for concern. Punjab, for instance, has alarmingly low juvenile female sex-ratios of 798 girls per 1000 boys. Labor force participation rates for women are much lower at 22.7 percent, compared to 51.6 percent for men. Apart from these critical determinants, gender inequalities in terms of nutrition, health, education, work burden, domestic violence, and powerlessness persist in households across the country, and in rural as well as urban areas. On gender development, India has an index value of 0.594 and ranks 114 among 155 countries, again in the lowest quadrant.[16]

Human Development

The human development index, presents a value of 0.612 for India ascribing it a medium human development status. In terms of aspects such as life expectancy, literacy, education enrollment and per capita GDP which are taken into account by this index, India ranks 134 among 182 countries world wide,[17] almost in the bottom most quadrant. Chronic hunger; seasonal drought and vulnerability based hunger reflect the alarming status of the Global Hunger Index 2009 on the food security front.[18]

Poverty and Inequalities

Inequality in India as measured by the Gini coefficient between 1993 and 2004 has not increased sharply. Overall, the Gini coefficient for India was 36.2 percent as against levels of 45 percent for PRC and greater than 50 percent for Latin America.[19] Increase in inequality has been sharp among certain groups in India and needs to be contained to foster more inclusive growth. Low growth rates in agriculture and divergent performance among Indian states are some of the factors contributing to this inequality. Another matter of concern is that moderate levels of income inequality are accompanied by high levels of inequality in well-being indicators of health and education in India. In India, for instance, around 5 percent of children are severely underweight among the richest 10 percent households. In the case of the poorest 1 percent of households, this share is as high as 8 percent. Educational outcomes show a similar pattern.

The Urgency of the Poverty Challenge

As is clear, reduction and the ultimate eradication of poverty has been an enduring concern of the state in India. Since the 1970s, considerable progress has been made in the reduction of poverty, through a host of governmental and non-governmental initiatives. However, this rate of reduction is now considered to be 'modest' and 'no longer acceptable given the minimalist level at which the poverty line is fixed'.[20] One might ask why this is so given that the Indian economy has experienced relatively high rates of growth in recent years. Additionally, alarming disparities persist across the population in terms of health and nutritional status, education and skills, as well as in access to clean water and sanitation.

The fact that poverty reduction has always been a priority is made particularly evident by the targets set in the successive Five Year Plans, as well as those of the Millennium Development Goals (MDGs). The Tenth Five Year Plan, for instance, aimed to reduce poverty ratios by 5 percent by the end of the year 2007 and by 15 percent by 2015; the targets set under the MDGs in 1990 have sought to halve by 2015 the proportion of people living on less than $1 per day and the proportion of people living in hunger. The Eleventh Plan has focused on rapid growth which reduces poverty and creates employment opportunities, access to essential services in health and education especially for the poor, and equality of opportunity inclusive of women's empowerment, environmental sustainability, and good governance.[21]

Achievement of MDGs

While the targets set by our MDGs re-emphasize the commitment to poverty reduction, the country's performance in this respect has shown a divide in terms of income and non-income MDGs. India is one of the few countries which has remained on track with regard to reducing income poverty, and is also likely to achieve targets for enrollment in primary education, combating HIV/AIDS, and access to improved water sources. However, the country is lagging behind in gender parity in education, infant mortality, and maternal mortality rates.[22]

27.5 percent people were below the poverty line in 2004–2005. With growth accelerating in the past few years and the growing focus on inclusive growth, it is expected that the target of 18.75 percent by 2015 will be more than achieved. In the same way, concerted efforts are being made to raise primary school enrollment to 100 percent through national-level integrated initiatives like *Sarva Siksha Abhiyan* (Education for All). In addition,

compared to a figure of 62 percent in 1991, over 85 percent of households had access to improved water sources in 2005.

As far as the non-income MDGs are concerned, while improvement has been recorded, the concern remains that there is a long way to go to reach the targets set for 2015. The female: male proportion in primary education was 78:100 (63:100 in secondary education) in 2000–2001 up from 71:100 (49:100 for secondary) in 1990–1991, but far from the equality mark given the almost equal gender share in the population. Under five mortality rates were 98 per thousand live births around 2002 (down from around 125 in 1992), but this figure too needs to fall to 41 by 2015. Maternal Mortality Rates reduced from 437 per 100,000 live births in 1991 to 407 in 1998, but this too is far higher than the targeted 109 by 2015.

Approaches to Poverty Reduction

Multi-pronged Approach

In India, poverty is a multi-dimensional phenomenon, with a bundle of economic, social, geographical, human, gender, and other deprivations. These diverse features of poverty have led to different strategies of poverty reduction. Interventions to reduce poverty need to take place at three different levels in an integrated manner. At the macro-level there are interventions aimed at income-poverty reduction through capital formation in human and physical resources, and achieving economic growth through fiscal incentives and expenditures; at the community or village level government interventions aim at directly providing basic social services that are the foundation of human capital formation and local infrastructure development. The third type of interventions target good health, nutrition, and education at the individual level.

Decentralization of Service Delivery

Both the design of poverty reduction strategies and their implementation are critical to the success of poverty reduction efforts. A multi-pronged effort is necessary to meet the challenge of multi-dimensional poverty at the implementation level, as much as at the program design level. Indeed, vast experience over the years has pointed to the need for decentralization of development efforts to enhance implementation effectiveness. In a large and diverse country such as India, local understanding of the processes of development is critical in effective implementation of the poverty reduction programs. It is critical that democratic institutions of local governance be strengthened and empowered to enable them to play an effective role in the delivery of services needed for poverty reduction.

Active Involvement of Community-based Organizations (CBOs) and Beneficiaries

Another strategy that heightens the impact of poverty reduction programs is the active involvement of beneficiary groups. This ensures their empowerment and access to the benefits of programs. Indeed, Self-help groups (SHGs) have revolutionized the manner in which formal credit can be made available to the poor and other individuals who cannot access credit from formal institutions such as banks, by making the process of saving and borrowing more transparent than ever before. SHGs point to the possibility of mobilizing social capital to harness the collective strengths of the poor for their development and in the process, providing an important safety net for them.

Public–Private Partnerships

Apart from the clear benefits of involving local communities, it is evident that the public delivery of services suffers from severe limitations both in terms of financial resources and efficiency. It is important to recognize the benefits of public–private partnerships (PPPs). The fiscal capacity of the governments at the Central and sub-national levels to enable more intensive efforts in poverty reduction programs has improved significantly in recent years. That notwithstanding there is still need to augment resources and improve efficiencies. The liberalization of economic policies has expanded the role of the private sector in the delivery of a variety of services including those in physical infrastructure, health, education and finance. In the process, PPPs have demonstrated efficiency gains.

Integrating Approaches into a Strategic Framework for the Future

A strategic framework for poverty reduction in India, while building on the efforts and experiences of the past, has been deeply influenced by the context of a faster growing economy. This is evident in the recent Five Year Plans including the Eleventh Plan. It has also had to respond to the overall economic and policy environment during this period with respect to technology, economic regulations and structure of the economy.

Having said that, it is expected that the emerging poverty reduction initiatives of the more recent period are likely to be of greater relevance in the coming years. In this context, there are three critical emerging areas which the current work seeks to review. In reviewing them, it also assesses how the approaches delineated above (multi-pronged approach, decentralization of service delivery, involvement of CBOs, PPPs) can be effectively integrated into these broad strategies.

The three critical strategies for poverty reduction which have emerged in the recent past are: (i) strategies and policy interventions to enhance availability and access to physical infrastructure (roads, electricity, irrigation); (ii) strategies and policy interventions to enhance availability and access economic infrastructure (financial services) and; (iii) strategies and policy interventions to enhance availability and access social infrastructure (education and health).

This volume estimates the incidence of poverty, evaluates existing programs, and draws lessons for more targeted and strategic interventions for poverty reduction.

Notes

1. Government of India, Press Information Bureau, Planning Commission. 2007. The All India average poverty line of 2004–2005 translates to $0.30 per capita per day in rural areas and $0.45 per capita per day in urban area as per August 2007 dollar equivalent rates.
2. As of 1993–1994, 15.2 percent of the rural population and 14.85 percent of the urban population earned incomes that were less than or equal to three-fourths of the poverty line.
3. *Human Development Report*. 2007–2008. United Nations Development Program. New York. 2007.
4. ADB. 2008. Key Indicators 2008: Inequality in Asia. Manila.
5. Developed by the Oxford Poverty and Human Development Initiative (OPHI) for the United Nations Development Programe (UNDP) 2010 Human Development Report.
6. Srivastava, 2004.
7. Average Annual GDP growth rate of 7.3 percent for 2008 to 2012. World Bank estimate. 'India at a Glance', World Bank. 2009. Source: http://devdata.worldbank.org/AAG/ind_aag.pdf, Accessed: 13/9/2010
8. Government of India, Press Information Bureau, Planning Commission. 2007.
9. Ifzal Ali and Juzhong Zhuang. 2007. Inclusive Growth towards a Prosperous Asia: Policy Implications. ADB ERD Working Paper Series. No. 97. Manila: Asian Development Bank.
10. Chaudhuri and Ravallion. 2007. Pro Poor to Inclusive Growth: Asian Prescriptions. ADB ERD Policy Brief. No. 48. Manila: Asian Development Bank.
11. 'The share of private sector in total investment shot up from 56 percent in 1990H1 to 71 percent by 1990H2', 'Private Sector Assessment-India', Asian Development Bank. Source: http://www.adb.org/Documents/csps/ind/2003/appendix3_private_sector_assessment.pdf (Accessed: 15/9/2010)
12. See for example Montek S. Ahluwalia ('Let Feel-Good Touch All'. *Business Standard*, 13 June 2007): 'For a long time, inclusive growth was taken to be poverty alleviation. Today, more than poverty alleviation, inclusiveness goes beyond to the perception of everyone feeling that they are getting a share of the action and getting upward social and economic mobility.'
13. Government of India. 2001. *Census of India*. Delhi.

14. *Human Development Report*. 2010–2011. United Nations Development Program. 2010.
15. Government of India. 2001. *Census of India*. Delhi.
16. *Human Development Report*. 2010-2011.
17. Ibid.
18. IFPRI, 2010.
19. Higher levels represent higher levels of inequality. Key Indicators. 2007. Asian Development Bank. Manila.
20. Government of India, Planning Commission. 2006. *Towards Faster and More Inclusive Growth: An Approach to the 11th Five Year Plan*. Delhi.
21. Government of India. 2007. *Inclusive Growth 11th Five Year Plan* (2007–2012). Planning Commission, New Delhi.
22. Sources: (i) Government of India, Central Statistical Organization. 2005. *Millennium Development Goals: India Country Report*. Delhi. (ii) Government of India, Press Information Bureau, Planning Commission. 2007. NSSO Poverty Data. Delhi.

2 Conceptualizing Poverty

The first step in analyzing the problem of poverty is to be able to define it conceptually. The minimum standard of living is one criterion used to define the poverty line. This minimum standard includes both food and non-food components. One identifies a consumption basket that may be regarded as essential for an individual for sustenance. Then one finds the set of corresponding prices, which can be used to convert this basket to value terms. The minimum standard of living thus obtained may be regarded as the poverty line. An individual with consumption below this defined poverty line is regarded as poor.

Operational Challenges

The operational problem is to figure out what constitutes a minimum set of commodities, and their amounts. While it may be possible to scientifically determine a minimum food basket based on calorie norms, no such scientific norm is available for non-food items. The measurement of non-food items would depend on the perception and needs of the people in any given area. Further, even for food products, more than one product may provide the consumer with the required minimum nutrition level. Thus minimizing the cost of the food basket is also important. Another problem is determining the price levels that may be used to convert the minimum basket to value terms. Prices of commodities are known to vary according to quality, space and time. Thus only some arbitrary average may be used for the purpose.

Depth and Distribution Issues

As stated earlier, poverty estimates in India, as is the case elsewhere, are an essential element of designing and implementing poverty eradication programs. These estimates can be categorized under two broad heads, the first related to the depth of poverty, and the other related to the distribution of poverty in the population. While estimates on the depth of poverty are affected by the methodology of estimation, estimates regarding the distribution of poverty are influenced by structural differences across regions.

Data Sets for Estimation

The next step is the estimation of people below the poverty line in the country. This requires extensive data on the consumption patterns of people and the prevailing prices of the goods consumed. Also, it is important to collect this data over time to monitor the change in the proportion of people below poverty over a period of time. The reliability and timeliness of the availability of such data is important for any analysis that may be done using this data set. In India, the National Sample Survey Organization (NSSO) provides survey information on consumption patterns of people across different social and economic groups. This data is collected every five years and has been used to estimate poverty levels over years. Another source of estimating poverty levels is the National Accounts Statistics (NAS), which gives aggregate data on GDP and its components, including consumption. Availability of such data sets is important not only for measuring poverty levels, but also for critically examining the performance of policy aimed at fixing the problem.

Use of Alternate Data Sets

Both approaches mentioned above have their shortcomings. While doubts have been raised about the survey methodology used to gather NSS data, NAS gives only the aggregate picture and not much information on the distribution of income. The problem is aggravated by the difference in poverty levels arrived at by the two measures, and the fact that the difference has widened over time. Currently the NSS estimate of consumption is around two-third of that given by the NAS. This difference in estimates has resulted in a debate over the existing situation of poverty and on the measures taken to address the problem. The supporters of the NSS data maintain that survey data is more efficient and reliable for estimating poverty levels, and based on the results obtained criticize the reforms process aimed at addressing the issue. On the other hand, believers in the NAS data point out the discrepancies of survey data and maintain that the reforms process has been successful to a large extent.

Understanding Historical Trends

In order to effectively work towards reducing the levels of poverty, It is also important to understand the historical trends as well as the current situation as far as this phenomenon is concerned. It is intriguing to see how poverty levels have moved at the aggregate and also among different social groups. The problem, however, is to be able to do a comparison over time. Even if we look at the NSS data, it is difficult to compare the estimates over time due to changes in survey data and methodology.

Implementation Relevance

A poverty study should be able to identify some of the causal factors that result in people living below minimum standards. In India, one main factor that results in poverty is unemployment. This is perhaps one reason why most poverty eradication programs in India have targeted employment generation among those below the poverty line. In recent years, the focus has shifted from employment generation to employability of the workforce. The approach is to enhance the skill set of the workforce so that its productivity is increased while it manages to sustain its employment over time without government support. Further, increase in organized and unorganized sectors may have a different impact on poverty levels. While the organized sector witnesses high wage and low employment, the unorganized sector typically has low wage and high employment. Thus, any policy measure has to maintain a balance between the two.

Implementation Strategy

An evaluation of various poverty eradication programs is important in order to examine the relevance of the underlying strategies. The programs introduced by the Government of India mainly comprise employment generation programs and food for work programs. Employment generation programs are of two kinds. The first provide employment in government work while the second facilitate self-employment among the poor. The latest among these is the Employment Guarantee Act which promises to give 100 days of employment at minimum wages to every low-income household.

A critical examination of these programs would focus on two broad aspects. First is their design and targets, and second is their success in meeting those targets. Resource requirement for most of these programs is large given the number of people living in poverty in India. Thus, it is important that these resources are put to efficient and judicious use. However, many of the programs have fallen short of meeting their targets which suggest that either targets have been set too high or that the efforts to achieve these targets have been somewhat lax.

3 Estimation of Poverty

The Poverty Line

Defining and measuring poverty is a complex exercise. This is primarily because any characterization of poverty involves both subjective and objective elements. In its most basic manifestation, poverty can be defined as socially perceived deprivation with respect to basic human needs. Basic human needs include food, clothing, shelter, health facilities and minimal education. These basic needs are deemed necessary for human survival, and are not substitutable by any other resource or service. Poverty also has many other faces, such as the extent of vulnerability of people to adverse events over which they have little control, of relative deprivation, social exclusion and livelihood un-sustainability.

Poverty in India, as is the case in other countries, is measured in terms of the poverty line. This line is defined as the minimum expenditure that an individual has to incur to meet his/her basic needs. In other words, the poverty line reflects the ex-ante capability to fulfill a basket of basic human needs translated into a basket of goods and services evaluated at a given set of prices. The idea of a poverty line was first introduced in India by the Indian Labour Conference in 1957. Subsequently, in 1962, a poverty line was computed in India for the first time by the Working Group of the Planning Commission. This line was defined in terms of a minimum requirement (food and non-food) of individuals—a minimum-needs basket—for healthy living.

India has recently redefined poverty to include access to six basic amenities, in addition to consumption of food. Poverty is now defined more comprehensively as deprivation of access to facilities like education, health, infrastructure, clean environment and benefits for women and children, in addition to food consumption.

'In the new system, poverty would be measured with reference to basic facilities like quality education, good health sectors and clean drinking water availability.'[1] This new index will be used in the next round of the countrywide NSS conducted to gauge poverty. It must be added that an

Asian Poverty Line[2] has been introduced to measure poverty in the Asia and Pacific region. The poverty line stands at a rough figure of $1.25 per day.

Deriving the Poverty Line

There are two possible ways of arriving at the minimum-needs basket. It can either be obtained from the social perception of individual need or it may be scientifically derived. An example of the former could be Participatory Rural Assessment (PRA) which is a procedure used by researchers and non-governmental organizations (NGOs) to find out the number of poor people in villages in order to make poverty relief programs more targeted.[3] The researchers attempt to find out from a local gathering of villagers about people in the locality who are well-off and not so well-off. Another example of a subjective assessment of poverty based on survey data is to ask people to estimate the minimum amount of money needed to 'get along in the community'. While estimates based on such normative assessments are usually 'sensible', one of the problems with subjective measures is that such assessments can often be deliberately inflated by individuals and interest groups to garner additional benefits. Further, social perceptions regarding poverty are known to vary across regions and groups.

Poverty Line Estimation in India

An alternative to using subjective measures to identify a minimum-needs basket, and hence the poverty line, is a scientifically derived norm that can be applied using a clearly defined yardstick across all regions and groups. Scientific poverty lines in their most basic form calculate the cost of a minimum standard of living, in particular food consumption that is required for human sustenance. This approach has been adopted in India as well as in other countries around the world. In India, while in the initial years, the minimum requirement for sustenance that defined the poverty line was set in value terms as a per capita consumption expenditure of INR 20 per month at 1960–1961 prices, the Task Force on Projection of Minimum Needs and Effective Consumption Demand constituted by the Planning Commission in 1979 re-defined the poverty line by anchoring it in calorie norms, rather than in money value terms. The poverty line was accordingly defined in terms of per capita consumption expenditure that meets the average per capita daily calorie requirement of 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas along with a minimum of non-food expenditure. To estimate the average daily per capita requirement for rural and urban areas, the task force used the age-sex-activity-specific calorie allowances recommended by the Nutrition Expert Group (1968). For this

the entire population was divided into 16 groups, based on age, sex, and occupation and a weighted average of food requirements of these groups was estimated. The average food requirement for each group was given by the Nutrition Expert Group in 1968. The weights used were based on the expected demographic share of these groups in the population, as projected for 1982–1983.[4] Finally, using the 28th Round (1973–1974) NSS data on household consumption in quantitative and value terms, the task force computed the monetary equivalent of the calorie norms. NSS provides data regarding household expenditure on various commodities by expenditure classes. The procedure adopted was to calculate the average calorie intake of every expenditure class, identify the lowest expenditure class which satisfied the calorie norm, and use the per capita total expenditure of that class as the poverty line.[5] Thus, the Indian poverty line is anchored on food intake, but does not include the value of food alone. The NSS data was used for two main reasons. First, no other detailed and reliable consumption data are available in India. NAS (National Accounts Statistics) does give estimates of private consumption, but it is at an aggregate level, hence not of much use for disaggregated poverty measures. Second, while income will only indicate the potential consumption, conceptually poverty is more related to the actual consumption.[6]

Based on observed consumer behavior in the NSS data in 1973–1974, it was estimated that in order to meet the calorie requirement of 2400 kcal per capita per day and a minimum of non-food requirements in the rural areas, a consumption expenditure of ₹ 49.09 per capita per month was necessary. The corresponding estimate to meet the calorie requirement of 2100 kcal and minimum non-food requirements in the urban areas was pegged at ₹ 56.64 per capita per month.[7]

The poverty line in subsequent years was derived by updating the 1973–1974 poverty line using the Wholesale Price Index (WPI) as a deflator. However, responding to criticism that the WPI accorded about half of its weight to items that were not used for private consumption, and that retail rather than wholesale prices are more meaningful to determine consumer expenditure, the Study Group on Estimation of Poverty Line, constituted by the Planning Commission during the Seventh Five Year Plan (1985–1990), recommended the use of private consumption deflator of the Central Statistical Organization (CSO) to update the 1973–1974 poverty lines for later years both at the national level as well as for States and Union Territories. For updating the poverty line to current year's prices, the group accepted the use of Consumer Price Index (CPI). CPIAL (CPI for Agricultural Laborers) is used for estimating the poverty line in rural areas. Similarly for urban areas, the Expert Group recommended a weighted average of CPIIW (CPI for Industrial Workers) and CPINM (CPI for non-manual employees). However,

the Planning Commission decided to continue with only the CPIIW as the price index for urban areas. These price indices are estimated annually based on a large variety of goods consumed in different markets. While CPIAL and CPIIW are given by the Labor Bureau, CPINM is released by the CSO. Further, prices of any one commodity vary in different states according to the consumption pattern in that region. Thus, different poverty lines are estimated for all states of India using the state-specific CPI. In deriving the year-wise poverty lines, while adjustments are made for price changes, the minimum calorie content, as well as the composition of the minimum-needs consumption basket has been assumed to be fixed at the 1973–1974 levels. Since more than one food product can meet these requirements, the selection of food products is based on the minimum cost criterion.

For a long time in India, 1960 was used as a base year for computing price-adjusted consumer expenditures. Every year prices were collected from different markets in 50 industrial centers throughout the country. Weights for these centers were allocated based on the average monthly family expenditure derived from a survey of workers conducted in 1958–1959. The center weights were determined as the ratio of the product of average consumption expenditure per family as per the main survey and the number of working class families represented by a center in a State to sum of such products over all the centers.[8] The current base period for CPIAL is 1986–1987. The base period for CPIIW has been revised to 2001 although in 1999–2000, the base period used for CPIIW was 1982. In the process of revision of the base year, some new centers have been added and a few old ones were dropped, resulting in a total of 70 centers (78 in the current series). However, in order to maximize the comparability over time, the specifications of items priced, the units, the shops, the markets and the day and the time of the visits were held fixed throughout the life of the series.

The updated poverty lines for the year 2004–2005 for each state and at the all-India level are presented in Table 3.1. As can be seen from the Table, the poverty line for India as a whole stands at ₹ 356.30 for rural areas and ₹ 538.60 for urban areas.

Estimating Poverty Rates

The estimation of a poverty line enables one to compute several measures of the extent of poverty in the population. Poverty estimates are necessary as these enable policy makers to appropriately design poverty alleviation programs. Of the different types of poverty estimates used to quantify poverty, the three that are more commonly used are the Head Count Ratio (HCR), the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI).

TABLE 3.1 State-specific Poverty Lines for Select States 2004–05 (INR per capita/month)

	INR per capita/month	
States/Union Territories	Rural	Urban
Andhra Pradesh	292.95	542.89
Assam	387.64	378.84
Bihar	354.36	435.00
Chhattisgarh	322.41	560.00
Delhi	410.38	612.91
Goa	362.25	665.90
Gujarat	353.93	541.16
Haryana	414.76	504.49
Himachal Pradesh	394.28	504.49
Jharkhand	366.56	451.24
Karnataka	324.17	599.66
Kerala	430.12	559.39
Madhya Pradesh	327.78	570.15
Maharashtra	362.25	665.90
Orissa	325.79	528.49
Punjab	410.38	466.16
Rajasthan	374.57	559.63
Tamil Nadu	351.86	547.42
Uttar Pradesh	365.84	483.26
Uttarakhand	478.02	637.67
West Bengal	382.82	449.32
Dadra & N. Haveli	362.25	665.90
All India	**356.30**	**538.60**

Note: Poverty lines are estimated using the original state-specific poverty lines identified by the Expert Group and updating them to 2004–2005 prices using the Consumer Price Index of Agricultural Laborers (CPIAL) for rural poverty lines and Consumer Price Index for Industrial Workers (CPIIW) for urban poverty lines.

Source: Government of India. Press Information Bureau.

These three measures successively capture more disaggregated aspects of the poverty situation—the HCR measures the incidence of poverty or how widespread poverty is without differentiating between the levels of poverty, the PGI measures the depth of poverty or how poor the poor are, and the SPGI measures the severity of poverty by giving larger weight to the poorest of the poor.

Head Count Ratio

The Head Count Ratio (HCR)[9] is the most elementary and commonly used poverty measure. The HCR is defined as the proportion of the national population whose expenditure is below the official threshold (or thresholds) set by the national government. By construction therefore, HCR is a useful yardstick which allows for the monitoring of the proportion of the national population that is considered to be poor based on a national standard. In India, given the official poverty lines at the state level, at the national level, and by rural and urban areas, the corresponding HCRs are computed from the NSS data. The all-India estimate is obtained by computing the number of poor aggregated across all states as a percentage of the total population of the country.

While HCR is a simple measure both in terms of conception and application, it suffers from the drawback that it does not take into account the differences in well-being between different poor households and treats all persons below the poverty line alike. Thus, there is little that one can gather about the depth or severity of poverty from computing the HCR. This is evident from the example in Table 3.2(a). Considering Scenario 1 in a country in the Table as the status quo of people below a hypothetical poverty line of INR 125, we see that the HCR for the country as a whole is 50 percent. However, after considering a transfer of resources to the two poorest individuals in the country of INR 24 each, we find that the HCR of the country does not change although the average well-being of the persons below the poverty line may have changed. This example shows that the HCR may remain constant over time even when individuals below the poverty line become better-off or worse-off while still remaining below the line. From a policy perspective then, any transfer to the poor who are significantly below the poverty line, even in substantial amounts, is unlikely to make a difference

TABLE 3.2(a) Computation of the Head Count Ratio (HCR) and the Poverty Gap Index (PGI) with Poverty Line at INR 125 : Illustrative Example of Policy Sensitivity

	Expenditure for each person in country (INR)					
	Person 1	Person 2	Person 3	Person 4	HCR (%)	PGI (%)
SCENARIO 1 (Status quo)	100	100	150	150	50	10
SCENARIO 2 (post-transfer of resources to the poorest)	124	124	150	150	50	0.4

Source: Adapted from Module 4: Measuring Poverty, World Bank: http://info.worldbank.org/etools/docs/library/93518/Hung_0603/Hu_0603/Module4MeasuringPovertyMeasures.pdf

to the HCR although it would reduce the intensity and severity of poverty. In such cases, the success of a poverty policy cannot be reflected by observing the HCR only. At the same time, there is an asymmetry in policy impacts when even marginal transfers to individuals just below the poverty line can improve the HCR by pushing these individuals above the line. Such problems become particularly relevant in the context of examining the relationship between growth and poverty reduction and often finding little association between the two. The question raised is that whether it is the case that there is indeed very little association between the two as is found in India, or are changes in poverty counts 'sufficiently well-measured' to correctly estimate the association between growth and poverty reduction?[10]

While HCRs estimate the prevalence of poverty across states and for the country as a whole by quantifying the proportion of population that is below the poverty line, they reveal little about the severity of poverty among the poor. However, as a growing body of research on poverty has highlighted, there is a substantial degree of differentiation in the well-being and living conditions of people below the poverty line. One way in which the poor can be differentiated, for instance as suggested by Kozel and Parker[11] could be (i) the destitute poor who have experienced idiosyncratic shocks, catastrophes or other major problems that have left them without a livelihood or chronically indebted; (ii) the *structural poor* who not only lack economic resources but whose poverty is strongly linked to social identity (caste was the primary determinate of social identity); and (iii) the *'mobile' poor*, who have more resources than either of the two other groups, are virtually debt-free, and have the greatest potential for upward mobility.

Poverty Gap Index: Among the measures that capture the depth and severity of poverty are the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI). The PGI is defined as the mean distance below the poverty line as a proportion of the poverty line where the mean is taken over the whole population after counting the non-poor as those having zero poverty gap. That is the mean shortfall from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. PGI thus indicates the average extent to which individuals fall below the poverty line (if they do), and is indicative of the intensity of poverty in the sense that it is sensitive to how far people are below the poverty line. Unlike the HCR, PGI is thus not built upon the assumption that all poor are in the same situation. Going back to Table 3.2(a), if we now consider Scenario 2 post-transfer of resources and compute the PGI, we find that the PGI has substantially fallen (0.4 percent) as compared to the status quo level of 10 percent. Thus, the beneficial effect of transfers to the poorest below the poverty line, while not being reflected in the HCR, clearly leads to a reduction in poverty levels when measured by PGI. From the public policy

perspective therefore, given that the PGI captures the average shortfall of poor people relative to the poverty line, this measure is helpful to compute the amount of benefits that needs to be transferred to the poor to bring their expenditure up to the poverty line.

While PGI measures the intensity of poverty and is thus an improvement over the HCR, being an average indicator, it does not take into account the severity of poverty in terms of the inequality that exists below the poverty line. Table 3.2(b) which is a slightly altered version of Table 3.2(a) illustrates this point where the mean poverty in terms of the distance from the line remains the same, but the distribution of well-being across the households has been changed under Scenario 3 through a redistribution of resources amongst the two poorest persons—Person 1 transferring INR 20 to Person 2 which reduces the expenditure of the former to INR 80 and increases that of the latter to INR 120. It can be easily seen that while the levels of poverty in terms of PGI remain the same after re-distribution, the severity of poverty post-transfer in terms of the differences among the conditions of the poor increases under Scenario 3. Again, from a public policy perspective, it is evident that where the PGI is insensitive to policies that transfer resources among the poor, the Squared Poverty Gap Index (SPGI) addresses this lacuna of PGI.

TABLE 3.2(b) Computation of the Head Count Ratio (HCR), the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI) with Poverty Line at Rs. 125 : Illustrative Example of Policy Sensitivity

	Expenditure for each person in country (Rs.)						
	Person 1	Person 2	Person 3	Person 4	HCR (%)	PGI (%)	SPGI
SCENARIO 1 (Status quo)	100	100	150	150	50	10	0.02
SCENARIO 2							
SCENARIO 3 (re-distribution of resources among the poorest)	80	120	150	150	50	10	0.03

Source: Adapted from Module 4: Measuring Poverty, World Bank : http://info.worldbank.org/etools/docs/library/93518/Hung_0603/Hu_0603/Module4MeasuringPovertyMeasures.pdf

Squared Poverty Gap Index (SPGI)

SPGI is defined as a weighted sum of poverty gaps as a proportion of the poverty line, where the weights are the proportionate poverty gaps themselves. By squaring the poverty gap, more weight is assigned to the section

of population that has a higher poverty gap.[12] By construction, the SPGI is sensitive to transfers among the poor in the sense that a transfer from a less poor to a poorer individual will reduce the index. Computing the SPGI with respect to the same data in Table 3.2(b) shows that while the PGI remains the same across the two scenarios, Scenario 3 is worse-off than Scenario 1 in terms of the SPGI. All three measures of poverty discussed so far can be derived from the Foster-Greer-Thorbecke (FGT) class of poverty measures.

The FGT measure can be written as:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z} \right)^{\alpha} \quad (\alpha \geq 0)$$

,

where n = total population, z = poverty line, y_i = consumption/expenditure of household i, y_i,…….. $y_q < z < y_{q+1}$,…….. y_n. The measures are defined for $\alpha \geq 0$, and α is a measure of the sensitivity of the index to poverty. When α = 0, we have HCR; when = 1, we have PGI and when α = 2, we have SPGI.

While the SPGI is the more sensitive poverty measure in terms of its ability to capture the severity of poverty, it is not very easy to interpret and thus is not very popular among policy makers. An index which is closer in conception to the FGT index, has been used in several empirical studies[13] and can be justified at 'both the theoretical level of ethical soundness and the practical level of easy communicability to the general public'[14] is Sen's (1976) poverty index. Sen's poverty index is given by:

$$S = (HCR)*(I) + [q/(q + 1)]\ (1 - I)\ G$$

where 'q' is the number of poor in the population, 'I' is the income gap ratio ,'G' is the Gini coefficient of income inequality among the poor and *HCR* is the Head Count Ratio. Sen's index is formulated to satisfy two 'desirable' properties of poverty indices. One is the monotonicity axiom, which requires that the poverty level should rise if the income of a poor person is reduced; the other is the transfer axiom, which requires that poverty must increase when a pure transfer is made from a poorer person to someone who is less poor.[15] Going by these axioms and the preceding discussion, the HCR does not meet either of the two axioms and the income gap ratio violates the transfer axiom. Like the FGT measure, Sen's index also captures the severity of poverty in a given population.[16]

Tables 3.3(a) and 3.3(b) present for the year 2004–2005, state-wise and national-level poverty estimates as given by HCR, PGI and SPGI. The data is presented separately for rural areas (Table 3(a)) and urban areas [Table 3(b)]. For each type of poverty estimate, the states are arranged in descending order of poverty. As is evident from both Tables, Orissa is the

TABLE 3.3 (a) Estimates of Poverty (%) (URP, official poverty lines): Rural: 2004–2005

Rank	States	HCR	States	PGI	States	SPGI
1	Orissa	46.9	Orissa	12.1	Orissa	4.24
2	Jharkhand	42.9	Chhattisgarh	9.4	Chhattisgarh	3.43
3	Bihar	42.2	Jharkhand	8.9	Jharkhand	2.55
4	Chhattisgarh	42	Bihar	8.3	Madhya Pradesh	2.31
5	Madhya Pradesh	35.8	Madhya Pradesh	7.8	Bihar	2.3
6	Uttar Pradesh	33.9	Uttar Pradesh	6.7	Maharashtra	1.99
7	Maharashtra	30	Maharashtra	6.4	Uttar Pradesh	1.93
8	West Bengal	28.5	West Bengal	5.4	West Bengal	1.42
9	Tamil Nadu	22.7	Tamil Nadu	3.7	Kerala	0.98
10	Assam	21.7	Assam	3.5	Tamil Nadu	0.96
11	Karnataka	20	Gujarat	3.4	Gujarat	0.91
12	Gujarat	19.4	Rajasthan	2.9	Assam	0.9
13	Rajasthan	19	Kerala	2.8	Rajasthan	0.72
14	Uttarakhand	14.9	Karnataka	2.7	Andhra Pradesh	0.65
15	Haryana	13.6	Haryana	2.2	Karnataka	0.63
16	Kerala	13.2	Andhra Pradesh	2	Haryana	0.61
17	Himachal Pradesh	10.9	Uttarakhand	1.9	Uttarakhand	0.42
18	Andhra Pradesh	10.8	Himachal Pradesh	1.5	Himachal Pradesh	0.35
19	Punjab	10	Punjab	1.3	Punjab	0.26
	All India	**28.7**		**5.8**		**1.76**

Note: 2004–2005 estimates are calculated from grouped data from NSSO Report 508.

Source: Himanshu. 2007. 'Recent Trends in Poverty and Inequality: Some Preliminary Results', *Economic and Politicial Weekly*, February, p. 10.

TABLE 3.3(b) Estimates of Poverty (%) (URP, official poverty lines): Urban:2004–2005

Rank	States	HCR	States	PGI	States	SPGI
1	Orissa	43.7	Orissa	14.1	Orissa	5.8
2	Madhya Pradesh	42.3	Chhattisgarh	12.9	Chhattisgarh	5.4
3	Chhattisgarh	40.7	Madhya Pradesh	12.4	Madhya Pradesh	4.8
4	Bihar	38.1	Bihar	9.3	Maharashtra	3.5
5	Karnataka	33.3	Maharashtra	9.2	Karnataka	3.1
6	Maharashtra	32.8	Karnataka	8.9	Bihar	3.0
7	Uttar Pradesh	30.7	Uttar Pradesh	7.2	Uttar Pradesh	2.3
8	Rajasthan	28.5	Rajasthan	6.2	Rajasthan	1.9

Contd

Table 3.3(b) *Contd*

Rank	States	HCR	States	PGI	States	SPGI
9	Andhra Pradesh	27.1	Andhra Pradesh	6.1	Andhra Pradesh	1.9
10	Tamil Nadu	24.1	Tamil Nadu	5.3	Kerala	1.6
11	Jharkhand	20.7	Jharkhand	4.7	Tamil Nadu	1.6
12	Kerala	20.6	Kerala	4.7	Jharkhand	1.5
13	Uttarakhand	17.0	Haryana	3.2	Haryana	1.0
14	Haryana	15.6	Uttarakhand	3.0	Gujarat	0.7
15	West Bengal	15.4	West Bengal	2.6	Uttarakhand	0.7
16	Gujarat	14.2	Gujarat	2.5	West Bengal	0.6
17	Himachal Pradesh	5.0	Himachal Pradesh	1.0	Himachal Pradesh	0.3
18	Punjab	5.0	Punjab	0.6	Punjab	0.1
19	Assam	3.7	Assam	0.5	Assam	0.1
	All India	**25.9**	**All India**	**6.2**	**All India**	**2.0**

Note: 2004–2005 estimates are calculated from grouped data from NSSO Report 508.

Source: Ibid.

poorest state with respect to all three measures of poverty—incidence, depth and severity. This is the case both for urban and rural areas. Rural poverty by all measures is the lowest for Punjab, while Assam has the lowest urban poverty. The convergence of ranking between states with respect to the three measures is much more in urban areas as compared to rural areas. That is, the ranking of a state in terms of one poverty measure, say HCR, is not too much out of line with its ranking with respect to the other measures in the case of urban areas. However, in the case of rural areas, there are several notable exceptions as highlighted in Table 3(a). For instance, while Kerala ranks 16th in terms of the incidence of poverty (i.e., relatively low HCR), it ranks way up in the 8th position in terms of severity of poverty and 13th in terms of depth of poverty.

Measuring Poverty in India: Important Estimation Issues

In this section, we discuss some important issues related to the methodology of poverty estimation in India. The first is with regard to the assumptions underlying the determination of the minimum needs basket that forms the basis of drawing up poverty lines for successive years. The second is the problem of long lags in the revision of CPI base periods. Since biased price measures are expected to affect the accuracy of poverty estimates, researchers

have looked at alternative sources of information on prices. Finally, we consider the continuing debate on the reliability of the NSS data on private consumption and its compatibility with the NAS estimates of consumption expenditure. The difference in the two measures has reportedly widened over time, causing a debate on how to reconcile the different estimates.

The Minimum Needs Basket and the Poverty Line

The anchoring of poverty lines in calorie norms in order to determine the minimum needs basket is based on the observation that food is an important prerequisite for survival for the poor in developing countries; food, therefore, accounts for a high proportion of consumption expenditure of the poor. Further, following calorie norms implies a community of well-nourished individuals, , and hence determining the employment capabilities and efficiency of an individual. Calorie-based poverty measures are also considered to be politically more attractive, as anti-poverty programs that target food needs are considered to be more 'meritorious' and 'compelling' compared to measures that are based on non-food items.[17] However, in recent years, the practice of anchoring poverty lines in calorie norms has come in for some criticism.

Review of the Current Practice

Critics of the current practice maintain that meeting only the calorie needs of an individual is not sufficient for survival. For instance, an individual must also have other nutritional requirements such as proteins, an absence of which can result in disease and disability and hence poverty.[18] A minimum needs basket should therefore take into account other nutrients also. Further, while an important rationale behind calorie-based poverty lines is that poor people spend a large proportion of their income on food, almost three-fourths by some estimates, this proportion is often found to decline over time as poor people become better-off and the composition of the consumption basket in terms of proportion of expenditure on food and non-food items changes even for poor people due to changes in relative prices and in tastes and preferences. For instance, as Deaton cites, while in 1983, the average household in rural India spent around 70 percent of its budget on food, it spent only 62 percent in 1999–2000; 31 percent of these households owned a radio and 19 percent a television set.[19] Thus, poverty need not only be thought of in terms of food requirements and should be broader in conception so as to include measures of vulnerability and exposure to risk factors[20] which are believed to also affect an individual's well-being. It must be said here that the Indian definition of poverty strictly follows the minimum needs basket norm. Keeping in mind the attendant criticism, however, the broader

characterization of poverty is expected to give greater insight into the causes of poverty, and hence in developing tools to overcome it.

A related problem with determining the minimum basket at different points of time is that the relevant consumption basket remains invariant over time and across income classes. The only adjustment that is made to make the baskets and hence the poverty lines comparable over time is to keep them the same in real terms by adjusting for price inflation periodically. This, critics argue, can lead to incorrect estimates of poverty lines across time. A change in consumption pattern over the years requires timely changes in the weights allocated to different commodities and markets while calculating the Consumer Price Index (CPI). Also, while CPI is an average of all commodities consumed in an economy, the goods consumed by the poor may differ significantly from those consumed by the population above the poverty line. Any analysis on poverty should ideally only consider prices of goods consumed by the poor. That poverty lines can be sensitive to the variability and composition of the consumption basket is illustrated in Table 3.3 for India.[21]

The table presents state-wise differences in the incidence of poverty between the official poverty estimates of the Planning Commission based on the 1973–1974 consumption basket and minimum calorie requirement norms, and the poverty estimates derived from consumption baskets as reported in the NSS data of per capita calorie intake by monthly per capita expenditure classes as existing in 1993–1994 that satisfy the minimum calorie requirement norms. As can be seen in the table, while the price-adjusted poverty line estimated by the Planning Commission for 1993–1994 for rural areas is around INR 205, the line based on the NSS nutrition-based computed data for the same year is 56 percent higher at INR 322 per capita per month. The difference in rural poverty lines is particularly high (more than double) in states like Andhra Pradesh, Maharashtra and Tamil Nadu. The only exception where the Planning Commission poverty line is higher is in the case of urban areas for the state of Orissa.

Finally, while calorie-based poverty lines are common across countries, a potential drawback of such a method to estimate poverty is that the line so computed is usually kept constant in real terms (by periodically accounting for price inflation) with calorie norms rarely updated to take into account changing circumstances. For instance, with the advent of technology and easy availability of machinery for most manual work, the nutritional requirements of individuals may change so that people with the same level of living may need fewer calories. However, if one goes by the fixed calorie standard, as in the case of a variable consumption basket discussed above, this would imply that the poverty line has to be revised upward—a change that could be

politically sensitive in any country given that an upward shift of the poverty line will automatically bring more people below the line.[22] This is based on the premise that the occupation structure or the labor efforts have not changed for people around or below the poverty line. Such changes have only occurred for the section of population above the poverty line.[23]

One of the crucial issues in estimating a poverty line is to take account of the non-food products in the minimum needs basket. However, unlike food products, for commodities like clothing and shelter no scientifically derived normative level exists which may be regarded as minimum requirement for human survival. In fact, in the early years of poverty estimation, in fact till 1972–1973, neither education nor health facilities were included as basic needs in estimating the consumption expenditure of an individual since it was believed that it would be the state's responsibility to provide education and health facilities to its populace.

Prices and Poverty Estimates

Biases in price indices are also likely to affect poverty estimates. An inflated price index will result in an inflated poverty line, further resulting in an overestimation of the incidence of poverty. Similarly, poverty will be underestimated if the price index is biased downward. Thus, various researchers have recommended different price indices for estimating the poverty line.

In order to overcome this problem some researchers like Deaton and Tarozzi[24] have used the NSS data to derive the price indices. The NSS data provides expenditure incurred and quantities consumed for various goods at the household level. Dividing the expenditure incurred by the quantities consumed gives us the estimates for the 'unit value' for different commodities. These 'unit values' can be used as a proxy for the prices of commodities. They may differ from prices since the former is like an average price that the household pays for a commodity. The actual price will vary if the household consumes different qualities of the same product. Also the NSS questionnaires sometimes combine different products in the same category. Some of these product groups have products of very different quality and value under the same head. An example of this would be the 'milk and milk products' group. The group contains large price variations in terms of prices of milk and its different products like butter or cheese. The unit value in this case represents an average price paid by the household on all these products. Once a unit value is available, the share of expenditure on a commodity is used for estimating the price index.

There are certain advantages of using this 'unit value' instead of the official price index. The first is the large sample size available. The NSS

data covers a large set of commodities, over a large set of households. Also, these unit values are based on actual transactions and not the reported or listed prices. It is possible to stratify prices thus obtained by socio-economic characteristics, such as level of living, occupation or demographic characteristics.

The stratification is important as the consumption pattern of people in any area or category is likely to have an impact on the price of the good. For example, in some areas rice is the staple diet. Thus the relative price of rice as compared to other goods is likely to be higher. The opposite will hold true for areas where rice is only a supplementary form of food and not the part of the main diet. Similarly, the quality of rice consumed, and hence its price will vary across different economic strata. A 'unit value' obtained from the NSS data can reflect all these differences, which will not be possible from the price index. Thus one can obtain the 'unit value' for commodities consumed by poorer sections of the society. It has been maintained by some critics of the official methodology that prices of only goods consumed by the poor should be used for estimating the poverty line. A price index based on all commodities will be biased upward, resulting in biased poverty estimates.

Another advantage of the unit value is that they can be used for estimating the Tornqvist and Fisher's price index. Both these indices have certain desirable properties which are not present in the officially used Laspeyres index. It must be said that the choice of index does not make a difference if one needs to make a comparison over time. This is because over a short time period, the underlying expenditure pattern or prices are unlikely to witness a major change. However while comparing across regions, the choice of index will affect the estimates since the underlying expenditure pattern will differ. Unlike Laspeyres (P^{L}_{10}) and Paschey's (P^{P}_{10}), Fisher's (P^{F}_{10}) and Tornqvist (P^{T}_{10}) use the budget share of both states. This helps in neutralizing the negative effect of using either one or the other. Thus these indices are better suited for inter-state comparisons. Also these indices satisfy the reversal properties. This implies that if bases are interchanged the relation between the prices of the two states remains the same. Given below are the formulae for all the four indices. Here 'p' and 'q' denote the prices and quantities and 'w' is the budget share. The first suffix stands for the time or location and the second suffix stands for the commodity k, ranging from 1 to n.

$$P_{10}^{L} = \sum_{k=1}^{n} q_{0k} p_{1k} \Big/ \sum_{k=1}^{n} q_{0k} p_{0k} = \sum_{k=1}^{n} w_{0k} \left(\frac{p_{1k}}{p_{0k}} \right)$$

$$P_{10}^{P} = \sum_{k=1}^{n} q_{1k} p_{1k} \Big/ \sum_{k=1}^{n} q_{1k} p_{0k} = \left[\sum_{k=1}^{n} w_{1k} \left(\frac{p_{1k}}{p_{0k}} \right) \right]^{-1}$$

$$P_{10}^{F} = \sqrt{P_{10}^{L} P_{10}^{P}}$$

$$\ln P_{10}^{T} = \sum_{k=1}^{n} \frac{w_{1k} + w_{0k}}{2} \ln\left(\frac{p_{1k}}{p_{0k}}\right)$$

Using these price indices from the NSS data, updated poverty lines can be derived and relevant poverty estimates obtained. Table 3.3 gives the official and revised poverty lines. Deaton obtained poverty estimates for three periods, 1987–1988, 1993–1994 and 1999–2000. The results are given in Tables 3.4 and 3.5. These are the years for which official poverty estimates are also available and thus a comparison is possible. The estimates obtained after adjusting the poverty line are lower than the official estimates. The difference is greater in case of urban poverty. The possible reason could be that urban estimates are obtained using an urban poverty line pegged at 15 percent higher than the rural poverty line.

In yet another attempt to address this problem, researchers from the Indian Statistical Institute (ISI) attempted to construct the state-wise urban CPI for the middle and the total population. It was to ensure that only prices of goods consumed by the poor are taken into consideration while estimating poverty lines. Thus the sub-group wise available indices for CPIIW and CPINM were used. The Expert Group constituted by the Planning Commission followed a similar method. Further these indices were estimated for 17 consumer good groups. Under this methodology first the state-specific indices are obtained by averaging the prices in each sub-category, over all the urban centers in the given state. The all-India index is then obtained as a weighted average of these state-wise indices. The state-wise expenditures on the sub-groups are used as the weights. However, for poverty estimates, state-wise indices are used. Similar estimates for rural areas were derived by Minhas et al.[25] The differences in results obtained through these different methodologies indicate that poverty estimates obtained are sensitive to the choice of data and the weights allocated.

Use of the NSS Data as Opposed to NAS

In India, one source of measurement errors as highlighted in the literature is the discrepancy in estimates of consumption between NAS and NSS which is exclusively used to estimate poverty lines currently. Comparisons between the two have revealed that while the rapid post-reform growth in GDP and per capita consumption show up in the NAS, they do not do so in the NSS;

as a result, there is little or no reduction in official poverty post-reforms as per the NSS estimates.[26]

The official methodology uses the data on household consumption expenditure given by the NSS for obtaining the proportion of population below the poverty line. However, sometimes questions are raised on accuracy and thus reliability of the NSS data. National Accounts Statistics (NAS) and National Sample Survey (NSS), both come out with estimates on household consumption expenditure. The Private Final Consumer Expenditure (PFCE) obtained from the NAS is derived from GDP estimates, based on the commodity flow approach. The NSS gives the Household Consumption Expenditure (HCE) based on the actual expenditure incurred by the households during the survey period. Both are derived from different sources of data, using different set of assumptions. Thus, and not surprisingly, they come out with different estimates of private consumption expenditure. The increasing divergence in the two estimates over time has led to questions regarding the reliability of the information available. Estimation procedures in both cases have certain shortcomings leading to a certain degree of inaccuracy.

Typically HCE estimates are lower than PFCE due to the presence of certain additional components in the latter. First, the NSS estimate being a household survey does not include the expenditure incurred by non-governmental non-profit institutions serving households. The expenditure incurred by these organizations has gone up over the years due to the increasing role played by these organizations, especially in the field of education and health. The second component is the imputed value of certain consumptions included in PFCE estimates. One category is the imputed rent for owner-occupied houses which is considered as a part of the private final consumption in national accounting practices. The other category is the indirectly measured value of financial intermediation services. These are the price-cost margins on banking and insurance services. The third broad category of private consumption expenditure excluded in NSS estimates, but a part of the NAS estimates, is the expenditure by the homeless and institutional sections like inhabitants of orphanages, prisons and hospitals. The NAS does not take into account the expenditure of this section of the economy as they do not satisfy the definition of a household. Even though they form a relatively small part of the total private consumption in the economy, they do contribute to the divergence in the NSS and the NAS estimates of private consumption.[27]

Thus, a part of the divergence in the two estimates is due to the definitional differences in the two approaches. The other part of the difference in estimates can be attributed to the difference in methodology adopted to obtain these

estimates. While the NSS estimates are based on the actual expenditure by households, the NAS derives its estimates from various sources, using some direct and some indirect estimation procedures. The NAS consumption estimates are obtained using the production data from various sectors of the economy. Further, this data has to be collected on an annual basis for GDP estimates. However, there are certain problems with this procedure. First of all, production data for all sectors is not available on a yearly basis. Especially for the unorganized sector, it has to be obtained through indirect means. The second source of inaccuracy in the data, are the arbitrary and outdated rates, ratios and norms used to estimate inter-industrial consumption and investment. Data on private stocks are also inadequate. These factors imply that the NAS data has to be revised periodically to complete its coverage. Another problem with the NAS estimates is their aggregate nature. While the NSS data makes it possible to derive state-wise and sector-wise poverty estimates, this may not be possible with the NAS data.

The NSS data also has shortcomings. Unlike the NAS which is available annually, the NSS gives its estimates on household consumption after a lag of five years. The major problem with the NSS estimates is that they are sensitive to questionnaire design. This was evident from the problems that arose in the 55th round based on which the poverty estimates of 1999–2000 were computed. In the 55th round, the NSSO introduced an experimental questionnaire with different recall periods for different classes of goods in addition to administering the '30-day recall' questionnaire. Prior to 1999–2000, the traditional '30–day recall' questionnaire and the experimental questionnaire were administered to *different* (and independent) samples of households.[28] Such an experiment with questionnaire design rendered the 1999–2000 poverty estimates non-comparable with earlier estimates and generated a wide-ranging debate on whether the decline in poverty rates reported in 1999–2000 was an overestimation. Furthermore, the NSS data, being based on surveys, may get affected by the training, motivation and commitment of the field staff, the quality of supervision, the level of cooperation of surveyed households, as well as the degree of truthfulness of their responses.[29]

Despite the problems with the NSS data, however, it has certain advantages that make it more useful in the estimation of the poverty line. NSS can be used to obtain disaggregated poverty estimates, which are useful for policy design. With the availability of this information across states, and across different economic and social segments of society, it is easier to identify the target groups and thus to formulate poverty eradication programs. Another advantage of the NSS is that it is based on actual household consumption expenditure.

TABLE 3.4 Monetary Equivalent Corresponding to Calorie Requirement: 1993–1994.

States	Rural poverty Line (INR)		Urban poverty line (INR)	
	Nutrition based	Price updated	Nutrition based	Price updated
Andhra Pradesh	383.10	163.02	394.89	278.14
Bihar	250.54	212.16	372.01	238.49
Gujarat	395.95	202.11	405.06	297.22
Haryana	329.60	233.79	405.99	258.23
Himachal Pradesh	320.94	233.79	284.38	253.61
Karnataka	314.60	186.63	393.25	302.89
Kerala	525.00	243.84	481.52	280.54
Madhya Pradesh	279.50	193.10	328.34	317.16
Maharashtra	427.76	194.94	555.85	328.56
Orissa	233.44	194.03	260.12	298.22
Punjab	369.89	233.79	439.90	253.61
Rajasthan	267.20	215.89	304.75	280.85
Tamil Nadu	419.20	196.53	442.76	296.63
Uttar Pradesh	271.50	213.01	354.34	258.65
West Bengal	297.76	220.74	368.29	247.53
All India	**321.80**	**205.84**	**398.01**	**281.35**

Notes: Price-updated poverty line as estimated by the Planning Commission. Nutrition-based or Calorie-based poverty line is required to fulfill 2400 Kcal and 2100 Kcal for rural and urban areas, respectively.

Source: Deepak Mehra. 2004. Calorie-based Poverty. Project Report, Ministry of Statistics and Program Implementation. Government of India. http://mospi.nic.in/mospi_seminarseries_nov04_5_2_final.pdf, Table 1.

TABLE 3.5 Sensitivity of Head Count Ratios and Alternative Estimates

	ΔHCR 43	ΔHCR 50	ΔlnP	HCR 50	HCR 50 New	Change 43–50	Change 43–50 New
Rural							
Aandhra Pradesh	0.70	0.56	–0.8	15.89	15.49	–5.15	–5.55
Assam	1.11	1.17	–4.7	45.20	39.51	5.78	0.09
Bihar	l.ll	0.87	–9.9	57.95	48.37	4.03	–5.55
Gujarat	0.93	0.76	–3.0	22.16	20.26	–6.40	–8.30
Haryana	0.70	0.73	–8.8	28.26	20.49	12.91	5.15
Himachal Pradesh	0.74	0.91	–13.0	30.36	17.14	13.68	0.46

Contd

Table 9 *Contd*

	ΔHCR 43	ΔHCR 50	ΔlnP	HCR 50	HCR 50 New	Change 43–50	Change 43–50 New
Karnataka	0.84	1.00	–2.0	50.11	28.07	–2.52	–4.56
Kerala	0.9:	0.66	–8.0	25.38	2049	–4.08	–8.97
Madhya Pradesh	0.97	0.91	–4.9	40.72	36.16	–1.30	–5.86
Maharashtra	0.85	0.74	2.3	37.91	39.65	–3.04	–1.30
Orissa	0.93	1.03	3.0	49.84	52 68	–8.83	–5.99
Punjab	0.62	0.64	0.2	11.69	11.98	–1.12	–0.83
Rajasthan	0.80	0.92	–9.6	26.40	18.66	–6.90	–14.64
Tamil Nadu	0.78	0.86	0.9	32.95	33.41	–13.39	–12.93
Uttar Pradesh	0.88	0.86	–10.2	42.32	33.76	0.40	–8.16
West Bengal	0.89	0.96	–2.6	41.18	38.71	–7.62	–10.09
All India	**0.89**	**0.91**	**–5.1**	**37.21**	**32.78**	**–1.80**	**–6.23**
Urban							
Andhra Pradesh	0.74	0.77	–3.3	38.82	35.83	–2.27	–5.26
Assam	0.46	0.66	5.7	7.93	10.82	–3.39	–0.50
Bihar	0.88	0.91	4.0	34.84	38.32	–17.05	–13.57
Gujarat	0.96	0.62	–3.7	28.28	26.10	–10.27	–12.43
Haryana	0.70	0.46	–1.5	16.47	15.79	–1.91	–2.59
Himachal Pradesh	0.32	0.32	–0.5	9.26	9.26	2.06	2.06
Karnataka	0.80	0.66	0.1	39.90	40.11	–9.29	–9.08
Kerala	0.78	0.69	1.0	24.31	25.16	–15.49	–14.64
Madhya Pradesh	0.77	0.69	–4.0	48.08	45.08	0.83	–2.17
Maharashtra	0.57	0.66	4.2	34.99	38.08	–5.35	–2.26
Orissa	0.98	0.80	–7.2	40.64	35.67	–1.94	–6.91
Punjab	0.57	0.66	6.7	10.90	14.43	–2.80	0.74
Rajasthan	0.75	0.77	1.2	31.02	31.93	–6.87	–5.96
Tamil Nadu	0.73	0.84	4.8	39.91	35.87	–0.29	–4.33
Uttar Pradesh	0.81	0.82	–1.4	35.09	33.76	–9.84	–11.17
West Bengal	0.91	0.56	3.3	22.95	24.57	–10.79	–9.17
Delhi	0.57	0.57	0.4	16.09	16.50	1.03	1.44
All India	**0.69**	**0.73**	**0.2**	**32–62**	**32.78**	**–6.01**	**–5.87**

Notes: ΔHCR is the estimated derivative of the head count ratio with respect to the logarithm of the updating price index, it is also the derivative with respect to the logarithm of mean pce with the distribution held constant. ΔlnP is the logarithm of our Tornqvist price index less the logarithm of the official price index implicit

in the poverty lines, and is the difference between the logarithms of column 8 and column 6 in Table 3. HCR50 is replicated from Table 7. HCR50 new is the head count ratio in 1993–94 when, instead of the official lines for the 50th Round, we use the official lines for the 43rd Round updated using the Tornqvist indexes in Table 3. The change for 43–50 is replicated from Table 7, and the new change 43–50 is the difference between the HCR43 (Table 7) and HCR50 new.

Source: Deaton and Tarrozi.

TABLE 3.6 Official and Alternative Headcount Ratios for 1993–94 and Change since 1987–88

	Official	New 1	New 2	New 3	New 43rd	Change
Rural						
Andhra Pradesh	15.89	15.89	33.47	29.17	35 00	–5.83
Assam	45.20	45.20	41.51	35.43	36.13	–0.70
Bihar	57.95	57.95	53.21	48.57	54.55	–5.98
Gujarat	22.16	22.16	37.22	32.45	39.43	–6.98
Haryana	28.26	28.26	19.67	17.01	1358	3.43
Himachal Pradesh	30.36	30.36	21.15	17.14	13.26	3.88
Karnataka	30.11	30.11	42.46	37.90	40.81	–2.91
Kerala	25.38	25.38	22.36	19.48	23.77	–4.29
Madhya Pradesh	40.72	40.72	41.11	36.63	43.72	–7.09
Maharashtra	37.91	37.91	46.69	42.89	4432	–1.43
Orissa	49.84	49.84	47.78	43.50	50.37	–6.87
Punjab	11.69	11.69	8.56	6.16	6.61	–0.45
Rajasthan	26.40	26.40	26.79	23.03	35.29	–12.26
Tamil Nadu	32.95	32.95	43.18	38.46	49.01	–10.55
Uttar Pradesh	42.32	42.32	32.35	28.65	3492	–6.27
West Bengal	41. 18	41.18	29.23	25.07	36 29	–11.22
All India	**37.13**	**37.13**	**37.10**	**32.94**	**38.96**	**–6.02**
Urban						
Andhra Pradesh	38.82	9.61	20.75	17.78	23.44	–5.66
Assam	7.93	17.93	16.26	12.97	13.56	–0.59
Bihar	34.84	34.97	30.47	26.68	38.13	–11.45
Gujarat	28.28	8.08	17.62	14.72	16.42	–1.70
Haryana	16.46	18.99	14.85	10.55	11.79	–1.24
Himachal Pradesh	9.26	9.26	5.61	3.64	1.66	1.98
Karnataka	39.90	16.03	24.50	21.44	25.95	–4.51

Contd

Table 10 *Contd*

	Official	New 1	New 2	New 3	New 43rd	Change
Kerala	24.31	18.34	15.98	13.87	20.97	–7.10
Madhya Pradesh	48.08	20.83	21.22	18.50	20.70	–2.20
Maharashtra	34.99	15.67	20.57	18.24	21.16	–2.92
Orissa	40.64	18.97	17.89	15.18	2082	–5.64
Punjab	10.90	14.19	9.11	7.75	6.56	1.19
Rajasthan	31.02	20.37	20.75	18.26	19.80	–1.54
Tamil Nadu	39.91	16.13	24.20	20.85	26.15	–5.30
Uttar Pradesh	35.09	32.13	24.15	21.71	29.29	–7.58
West Bengal	22.95	25.19	18.99	15.53	22.26	–6.73
All India, weighted average	**33.15**	**19.33**	**20.83**	**18.12**	**22.83**	**–4.71**

Notes: The first column. 'Official.' repeats the Planning Commission's poverty counts for 1995–94. In the second column, labeled 'New 1,' we take the Planning Commission's rural poverty lines as given, so that the rural figures are the same as in the first column. However, the urban poverty lines are calculated using the Planning Commission's rural poverty lines and multiplying by the urban to rural Tornqvist price indexes. The third column, labeled 'New 2' uses only the All India rural poverty line from our reworking of the official counts. The rural lines for each state are created from the All India line using the state Tornqvist price indexes and the urban lines are created from the rural lines using the urban to rural price indexes as in column 2. Note that the All India rural poverty rate in column 3. 37.10 percent, is not identical to the figure of 37.13 reported in column 1: this small discrepancy comes from the treatment of the All India head count ratio, which is derived here by imputing poverty lines or poverty rates to the small states and in addition using the official lines for urban and rural Delhi, and then weighting the state poverty rates by their shares in the population. Presumably the discrepancy could be eliminated by some iterative calculation. Column 4, labeled 'New 3,' uses the All India official poverty hue (as recalculated here) for 1987–88. This is updated to 1993–94 using the All India Törnqvist rural price index. The rural and urban state level poverty lines are then created as in column 3. Column 5, labeled 'New 43rd' uses the corresponding procedure for the 43rd Round, starting from 115.70. and creating rural poverty lines from the state indexes from the 43rd Round, and convening to urban lines using the urban to rural price indexes for the 43rd Round The final column, labeled 'Change' is the Column 5 minus Column 4 and shows the estimated change in the head count ratios using the preferred methodology. In all cases, the All India headcount ratios are derived from the state ratios following the 'official'' methodology, imputing lines or rates to the small states, and adding overall states with the appropriate population weights. In these calculations, the official lines for Delhi are used when needed; this avoids the need to calculate a rural price index from the small sample of households in rural Delhi.

Source: Deaton and Tarrozi.

Notes

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4 Poverty Profile of India

Given the diversity of the Indian economy in terms of institutional characteristics and economic conditions, it is tough to quantify the extent of poverty in the country, and to draw up a poverty profile solely on the basis of aggregate measures. The first step in this complex exercise, therefore, is to analyse the incidence of poverty, as well as its depth and severity, at a disaggregated level. This consideration influenced the recommendations of the Expert Group on Estimation of Proportion and Number of Poor, set up by the Planning Commission in 1989, to recommend the drawing up of state-specific poverty lines as against an All-India poverty line for rural and urban areas and using the state-specific cost of living indices for updating the poverty line separately for rural and urban areas.

Keeping the previous discussion on poverty estimation in mind, this chapter presents the poverty profile of India in terms of (*i*) a comparison of poverty rates in India and its changes over time with those existing in select South Asian countries and the People's Republic of China (PRC) (*ii*) aggregate measures of poverty and their trends (*iii*) disaggregated measures of poverty at the state level, and for rural and urban areas along with their trends (*iv*) non-income measures of poverty, and finally (*v*) projections of poverty, especially in the context of the Millennium Development Goals (MDGs).

Incidence of Poverty in India: A Cross-country Comparison

South Asia, of which India is an integral part, made significant progress in the reduction of income- and consumption-poverty during the 1980s and 1990s. The percentage of population living below (PPP) USD 1 a day decreased from 51.3 percent in 1981 to 41.3 percent in 1990, decreasing further to 31.3 percent in 2001. However, formidable challenges remain in this regard.

Table 4.1 presents comparative estimates of the incidence of poverty across selected South Asian countries as well as PRC as measured by the Human Poverty Index (HPI-1).

TABLE 4.1 Comparison of Poverty Estimates among Selected SAARC Countries and PRC: 1990s–2005.

Country	HPI - 1		Probability by birth of not surviving after age 40m (% of cohorts) 2000–2005	Adult Illiteracy Rate 2004	Population without sustainable access to an improved water source	MDG	MDG			HPI-1 rank minus income poverty rank
							Population below poverty line			
	Rank	Value (%)				Children under-weight for age (below 5 years) 1996–2004	$1 per day 1990–2004	$2 per day 1990–2004	National poverty line 1990–2003	
Bangladesh	85	44.2	15.9	–	26	48	36.0	82.8	49.8	5
PRC	26	11.7	6.9	9.1	23	8	16.6	46.7	4.6	-14
India	55	31.3	16.6	39.0	14	47	34.7	79.9	28.6	-14
Nepal	68	38.1	17.6	51.4	10	48	24.1	68.5	30.9	4
Pakistan	65	36.3	16.1	50.1	9	38	17.0	73.6	32.6	10
Sri Lanka	38	17.7	4.3	9.3	21	29	5.6	41.6	25	10

HPI-1: Human Poverty Index for Developing Countries.

HPI-1 minus income poverty rank: a positive figure indicates that country performs better in income poverty than in human poverty and a negative the opposite.

Source: Human Development Report 2006, UNDP.

The HPI-1, developed by UNDP and computed for 102 developing countries, is a measure of deprivation in the three basic dimensions of human development, namely, in terms of (*i*) vulnerability to death at a relatively early age, as measured by the probability at birth of not surviving to age 40, (*ii*) exclusion from the world of reading and communications as measured by the adult literacy rate, and (*iii*) lack of access to overall economic provisioning as measured by the un-weighted average of two indicators, the percentage of the population without sustainable access to an improved water source and the percentage of underweight children.

As can be seen from Table 4.1, in 2004 the HPI-1 for India was 31.3 percent with India being ranked 51. This is considerably lower than PRC and Sri Lanka but better than Nepal, Pakistan and Bangladesh. However, India is almost at par with these three countries with respect to the probability of not surviving beyond the age of 40 as well as with respect to the proportion of children who are underweight. In comparing the percentage of population below the poverty line, India has significantly higher poverty rates as measured in terms of the $1 per day poverty line; at 34.7 percent, this is significantly higher than the other countries except for Bangladesh. Poverty rates more than double, to 80 percent, for India when we consider the $2 per day threshold. This rate is close to the rates for Bangladesh and Pakistan. While the international poverty line facilitates a comparison of poverty rates across countries, it does not fully reflect the poverty situation within national boundaries given that countries vary substantially in food habits and other perceived requirements that are explicitly taken into consideration while drawing up national poverty lines. As can be seen from Table 4.1, poverty ratios as measured with respect to the respective national poverty lines are substantially lower for India and higher for Bangladesh when compared to the estimates derived relative to the international poverty line. Finally, the difference between the HPI-1 ranks and the income poverty rank in the last column of the table shows that India, as well as PRC, perform better in terms of non-income measures of poverty, HPI-1, than in terms of measures of income poverty.

Examining the trends in poverty ratios from a comparative perspective, Table 4.2 reveals that in terms of the international poverty line of $1 per day, the poverty ratio for India declined at a lower rate during the 1990s as compared to the 1980s. This was the case with Sri Lanka too, although the annual rates of decline were much sharper for Sri Lanka. With respect to the other three countries, Bangladesh, Pakistan and Nepal, the 1990s were markedly better than the 1980s in terms of the rate of decline in poverty ratios. The picture reverses strikingly when one considers the growth rates

TABLE 4.2 Trends in Poverty Ratios and Human Poverty Index: Selected SAARC Countries

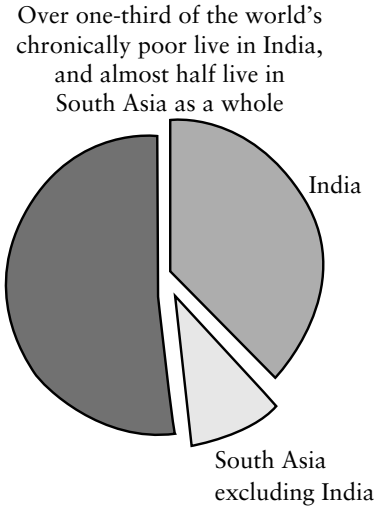
Country	Poverty Ratio ($1 per day PPP)					Poverty Ratio (National Poverty Line)					Human Poverty Index (HPI-1)				
	Levels (%)			Annual Growth Rates (%)		Levels (%)			Annual Growth Rates (%)		HPI-1 (%)		HPI-1 (Rank)		Annual Change in Value
	1981	1990	2001	1981–90	1990–01	1980	1990	2000	1980–90	1990–00	1998*	2004#	1998	2004	(1998–2004)
Bangladesh	26.2	35.2	32.8	3.34	–0.64	73	47.5	44.3	–4.2	–0.8	43.6	44.1	70	85	
India	53.0	40.6	35.5	–2.92	–1.22	44.5	36.0	26.1	–2.1	–3.2	34.6	33.3	58	55	
Nepal	41.9	53.2	27.3	2.69	–5.88	36.2 (1977)	40.0 (1989)	38	0.84	–0.47	51.3	38.7	80	68	
Pakistan	56.4	47.8	12.0	–1.82	–11.81	29.1 (1987)	26.1	34.4 (2001)	–3.56	2.89	40.1	37.1	68	65	
Sri Lanka	18.2	3.8	1.8	–15.97	–6.57	30.9 (1985)	26.1 (1990–1991)	22.7 (2002)	–3.32	–1.16 (1990–2002)	25.4	18.0	43	38	

Data on HPI-1: UNDP Human Development Report, 2000 and 2004.

*Out of 97 developing countries # out of 102 developing countries.

Source: For poverty ratios based on $1 per day, World Bank.

with respect to the national poverty line. While poverty rates show a higher decline in the 1990s than in the 1980s for India, this is not the case with respect to Bangladesh and Pakistan. Finally, if we consider changes in HPI-1 over time for India, this has changed only marginally over a span of six years, i.e., 1998–2004, from 34.6 to 33.3, with the annual percentage decline (compounded) being at 0.64 percent. This rate of decline is noticeably lower than those achieved by Nepal, Pakistan, and Sri Lanka.



Source: Chronic Poverty Report 2004–05

FIGURE 4.1 The Share of South Asia in Chronic Poverty

An important dimension of poverty that has received increasing attention from policy makers is chronic poverty. The defining feature of chronic poverty is the persistence of poverty over time, with people remaining poor for much of their lives (extended duration or non-transitory poverty)[1] and often passing it on to the next generation. Broad estimates of chronic poverty across the world suggest that between 300 and 420 million people are chronically poor, with South Asia having almost half of the world's chronically poor.[2] Most notably, as is evident from Figure 4.1, over one-third of the world's chronically poor live in India.

Poverty Estimates at the National Level

In this section, we present different dimensions of poverty estimated at the national level. Following up on Tables 2.3(a) and 2.3(b) in Chapter 2 which provide estimates of poverty at the all-India level for the year 2004–2005, Table 4.3(a) and Table 4.3(b) present trends in different poverty estimates over the period 1973–1974 to 2004–2005 computed from different NSS rounds. While Table 4.3(a) presents trends in the most widely used poverty indicator, the Head Count Ratio (HCR), Table 4.3(b) presents estimates of the depth and severity of poverty, measured respectively by the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI), as well as a measure of inequality in terms of the Gini coefficient. The estimates in both tables are reported separately for rural and urban areas.

Official estimates of the HCR released by the Planning Commission and presented in Table 4.3(a) show a marked decline in poverty levels over the

years.[3] According to poverty estimates of 1973–1974, more than half the total population in the country (55 percent) was below the poverty line. This percentage almost halved to 27.5 percent in 2004–2005. This decline has been observed in both rural and urban areas. While in rural areas the poverty ratio declined from 56 percent in 1973–1974 to 28.3 percent in 2004–2005, in urban areas too, it went down from 49 percent to around 26 percent. Though there has been doubt about the poverty measures for 1999–2000, the estimates for the other periods are considered to be fairly robust. For instance, existing analysis has shown that there was an improvement in the condition of the poor in 1993–1994 over that in 1987–1988 at the all-India level irrespective of the poverty line used.[4]

TABLE 4.3 (a) Aggregate Incidence of Poverty in India (1973–74 to 2004–05)

Year	Poverty Ratio (percent)			Number of Poor (million)			Proportion of Total Poor (percent)	
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1973–74	56.4	49.0	54.9	261.3	60.0	321.3	81.33	18.67
1977–78	53.1	45.2	51.3	264.3	64.6	328.9	80.36	19.64
1983	45.7	40.8	44.5	252.0	70.9	322.9	78.04	21.96
1987–88	39.1	38.2	38.9	231.9	75.2	307.9	75.32	24.42
1993–94	37.3	32.4	36.0	244.0	76.3	320.3	76.18	23.82
1999–00	27.1	23.6	26.1	193.2	67.1	260.3	74.22	25.78
2004–05	28.3	25.7	27.5	220.92	80.79	301.71	73.22	26.78

Source: Data till 1999–2000 sourced from Chapter 7: Poverty Elimination and Rural Employment, Mid-term Appraisal Tenth Five Year Plan; data for 2004–05: Poverty Estimates for 2004–05, Press Information Bureau, Government of India.

With regard to comparisons of rural poverty vis-à-vis urban poverty, throughout the period for which data are reported in the tables, the poverty ratio for rural areas has been higher than that in the urban areas and going by the proportion of total poor residing in rural and urban areas, it appears that poverty in India has remained a predominantly rural phenomenon. In 1973–1974, more than 81 percent of the poor in the country were in rural areas. While this percentage somewhat declined in the course of the next 30 years, it still remained at a high 73 percent in 2004–2005. Interestingly, however, while the HCR for urban areas is consistently lower than that for rural areas and has been declining appreciably, the absolute number of urban poor has registered a steady increase (with the exception of 1999–2000), from around 60 million in 1973–1974 to around 81 million in 2004–2005. Further, while

TABLE 4.3 (b) Indices of Poverty and Inequality in Terms of PGI, SPGI & Lorenz Ratio in India (1973–74 to 2004–05)

Year	Poverty Gap Index		Squared Poverty Gap Index		Gini Coefficient	
	Rural	Urban	Rural	Urban	Rural	Urban
1973–74	16.56	13.64	6.81	5.26	0.276	0.301
1977–78	15.73	13.13	6.48	5.25	0.339	0.345
1983–84	12.32	10.61	4.78	4.07	0.297	0.330
1987–88	9.11	9.94	3.15	3.6	0.298	0.354
1993–94	8.45	7.88	2.78	2.82	0.282	0.339
2004–05	5.8	6.2	1.76	2.0	0.306	0.376

Source: Data till 1999–2000 sourced from indiastats.com. Data for 2003–04 sourced from Himanshu (2007).

18.67 percent of the country's poor were residing in urban areas in 1973–1974, this percentage increased to approximately 27 percent by 2004–2005. The absolute number of rural poor declined from 244 million in 1993–1994 to around 221 million in 2004–2005. Thus one may conclude that there is a shift in poverty in India, from rural to urban areas.

There could be more than one factor responsible for this trend. One reason could be an increase in out-migration of the poor from rural to urban areas. The other reason could be that with an increase in urbanization, some poor who were earlier classified in rural areas are now identified as urban poor.[5]

Turning to other measures of poverty in Table 4.3(b), we find that there has been a consistently declining trend in PGI and SPGI for both rural and urban areas since 1973–1974. That is, both the depth and severity of poverty has been declining in rural and urban areas. Although, as of 2004–2005, there does not seem to be much difference in these measures across the rural–urban divide. Finally, an examination of trends in the Gini coefficient shows that inequality has increased in both rural and urban areas; the coefficient estimate for 2004–2005 for rural areas is higher than the levels existing in all other years with the exception of 1977–1978. For urban areas, the level of inequality is at its highest in 2004–2005, at 0.376.

The severity of poverty and the deprivation associated with poverty in India is also captured in terms of the 'very poor' in the population across rural and urban areas (Table 4.4) and the distribution of households by availability of two square meals a day (Table 4.5). The 'very poor' in India are defined by those who are below 75 percent of the poverty line. According to estimates computed by Dev and Ravi,[6] the poverty ratio for the 'very poor' declined from 28.3 percent in 1983 to 15.5 percent in 1993–1994, and to 10.3 percent

in 2004–2005. Interestingly, the reduction in the percentage of the very poor has been more striking in rural areas than in urban areas, particularly during the period 1993–1994 and 2004–2005; while this percentage for rural areas declined from 29 percent to 9.64 percent (marginally less than the all-India average), the corresponding decline in the case of urban areas was from 16 percent to 12 percent.

In terms of the absolute number of very poor individuals, we can observe from the bottom panel of Table 4.4 that almost mirroring the trends in poverty ratios, rural areas have fared better than urban areas. While the number of very poor has consistently declined in rural areas (halving between 1973–1974 and 2004–2005), this number has remained nearly constant over a span of 30 years in the urban areas. Thus, the overall decline in the very poor category has been on account of the decline in the absolute number of very poor in the rural areas.

TABLE 4.4 Percentage and Absolute Number of Poor and Very Poor in Rural and Urban Areas (Surveys of 30–Day Uniform Reference Period)

	Poverty Ratios (percent)					
	Rural		Urban		All	
	Poor	Very Poor	Poor	Very Poor	Poor	Very Poor
1983	45.76	25.52	42.27	22.45	44.93	24.79
1993–94	37.26	29.18	32.56	16.00	36.02	15.54
2004–05	29.18	9.64	26.02	12.00	28.27	10.32
	Absolute Number (in million)					
1983	252.05	140.57 (55.8)	72.29	38.39 (53.1)	324.34	178.96 (55.2)
1993–94	247.18	102.03 (41.3)	77.38	38.02 (49.1)	324.55	140.05 (43.2)
2004–05	232.16	76.70 (33.1)	83.31	38.42 (46.1)	315.48	115.12 (36.5)

Notes: Figures in paranthesis refer to the percentage share of very poor to poor.
Source: Dev and Ravi (2007), Poverty and Inequality: All India and States, 1983–2005.

One of the key aspects of poverty is deprivation in the form of not having enough to eat. This is particularly underscored by the fact that eradication of hunger and extreme poverty is one of the Millennium Development Goals (MDGs). The Report of the State of Food Insecurity in the World, 2005,[7] states that around 814 million people in the developing world are undernourished as of 2002, with India accounting for 21 percent of the total. In Table 4.1, we see that the percentage of underweight children below the age of 5 during 1996–2004 is at a high of 47 percent in India. Again in Table 4.5, one observes that the percentage of households not receiving two square meals a day for some months of the year is distinctly higher for rural

areas than for urban areas. Such differences do not however exist when one considers the distribution of households which do not have access to two square meals even during some months of the year. Overall, the proportion of households reported to have inadequate food is substantially higher for rural areas than for urban areas.

TABLE 4.5 Distribution of Households by Availability of Two Square Meals a Day in India (1990, 1993–94 and 1999–2000)

(Percentage)

Members of the HHs Getting Two Square Meals a day	Rural			Urban		
	46th Round (1990–1991)*	50th Round (1993–1994)	55th Round (1999–2000)	46th Round (1990–1991)*	50th Round (1993–1994)	56th Round (1999–2000)
Throughout the Year	88.3	94.5	96.2	95.5	98.1	98.6
Only Some Months of the Year	10.8	4.2	2.6	3	1.1	0.6
No Even Some Months	0.7	0.9	0.7	0.8	0.5	0.3
Not Reported	0.2	0.4	0.5	0.7	0.3	0.4
All	100	100	100	100	100	100
Proportion of HHS Reported Inadequacy of Food (Item 2 + 3)	11.5	5.1	3.3	3.8	1.6	0.9

Source: indiastats.com

Trends in the extent of nutritional deprivation between 1990–1991 and 1999–2000 show that the percentage of households with reported inadequacy of food has sharply fallen over the years particularly for rural areas where the initial levels were much higher than that prevailing in urban areas. During the 10–year period for which data is reported in Table 4.5, the first three years registered the sharpest drop in the proportion of households with inadequate food both in the case of rural and urban areas.

If one examines the data on the incidence of undernourished households in terms of minimum calorie requirements, NSS data (55th round) reveals that this type of under-nourishment is as much an urban phenomenon as a rural one (NSS 2001). It is observed that 41 percent of rural households, which accounted for 45 percent of the rural population, have an intake of less than 90 percent of the required level of 2700 kcal per consumer unit per day. The corresponding percentage of households is the same for urban areas, but the percentage of population with less than 90 percent of the required norm is relatively higher at 48 percent (NSS 2001).

Trends in Aggregate Poverty: Pre-reform and Post-reform Years

It has often been discussed and debated among policy makers and researchers whether poverty rates declined in the post-reforms period after the early 1990s.[8] This has happened all the more after the 55th Round of NSS where the questionnaire design was changed leading to non-comparability of the data for 1999–2000 with earlier years. However, with the 61st round of NSS, poverty estimates of 2004–2005 were derived, which were fully comparable to data from other rounds.

Two sets of estimates on growth rates broadly coinciding with the 11 years prior to the on-set of economic reforms in a concerted way (1983–1994) and 12 years post-reforms (1993–2005) are presented in Table 4.6.[9] The first set of estimates is taken from Himanshu[10] who examines trends in poverty and inequality using URPs (Uniform Recall Period) and uses the more direct method of estimating poverty for the years 1999–2000 and 2004–2005 by using the NSS employment-unemployment surveys. The second set of estimates is from Dev and Ravi[11] who estimate growth rates based on both the URPs and Mixed Recall Period (MRPs), and use the indirect method of estimating poverty ratios for 2004–2005 by using MRP monthly per capita expenditure for each size class of URP distribution. As can be seen from the table, while the direct and indirect methods of estimating trends yield

TABLE 4.6 Annual Percentage Change in Poverty and Inequality : 2004–05: HCR, PGI, SPGI and Gini Coefficient

	Percentage Growth Rates per annum							
	Rural				Urban			
	HCR	PGI	SPGI	Gini	HCR	PGI	SPGI	Gini
1983–94 (I)								
(i) Himanshu	–0.88	–0.37	–0.19	–0.17	–1.05	–0.32	–0.14	0.05
(ii) Dev and Ravi	–0.81	–0.46	–0.26	–0.21	–0.92	–0.34	–0.16	0.02
Difference (i) – (ii)	–0.07	0.09	0.07	0.04	–0.13	0.02	0.02	0.03
1993–05 (II)								
(a) Himanshu	–0.77	–0.25	–0.10	0.17	–0.61	–0.17	–0.08	0.29
(b) Dev and Ravi	–0.73	–0.24	–0.10	0.17	–0.59	–0.24	–0.11	0.29
Difference (a) – (b)	–0.04	–0.01	0.00	0.00	–0.02	0.07	0.03	0.00
Difference (II) – (I)								
Himanshu (i) – (a)	–0.11	–0.12	–0.09	–0.34	–0.34	–0.15	–0.06	–0.24
Dev & Ravi (ii) – (b)	–0.08	–0.22	–0.16	–0.38	–0.33	–0.10	–0.05	–0.27

Source: Dev and Ravi (2007) and Himanshu (2007).

broadly similar trends, the absolute changes in growth rates are noticeably different across some poverty measures.

The general conclusions that emerge from the analyses of aggregate poverty trends is that the annual reduction of poverty rates in the post-reform period has not been higher than that of the pre-reform period[12] and that poverty decline in the 1990s has been in line with earlier trends.[13] In fact, Himanshu (1997) reports a slowing down of these rates in the latter period, with detailed analysis showing that most of the reduction in this period has occurred during 1999–2005. This seems to be consistent with the general perception that the 1990s, in spite of experiencing higher growth rates, was the 'lost decade for poverty reduction'.[14] Estimates of trends in HCR in Table 4.6 show that while poverty rates declined both during 1983–1994 and 1993–2005, the rate of decline was less during the latter period. This difference is more pronounced in the case of urban areas (between 0.33 and 0.34 percentage points) than in the case of rural areas (between 0.08 and 0.11 percentage points). Considering changes in PGIs during the two sub-periods, we find a similar trend with the rate of decline in the depth of poverty at the all-India level being lower post-reforms for both rural and urban areas. However, by Himanshu's estimates while this difference is almost the same for rural and urban areas (0.12 percent and 0.15 percent, respectively), Dev and Ravi's estimates suggest that the rate of decline of PGI slowed down much more for rural areas in the post-reform period (from –0.46 to –0.24) than in the case of urban areas (from –0.34 to –0.24). Trends in the severity of poverty as captured by annual growth rates of SPGI show a sharper decline in rates for rural areas than for urban areas (range of 0.09–0.16 as compared to 0.05–0.06). Although more detailed analysis based on unit level data can help explain the estimated trends, one explanation forwarded is that the decelerating rates of poverty reduction could be due to a fall in the relative price of food and the changes in the regional patterns of employment and wages.[15] Finally, trends in inequality as captured by growth rates in Gini coefficients unambiguously show a substantial increase in inequality in both rural and urban areas, which according to some analysts may have slowed down the rate of poverty reduction.[16]

State-wise Incidence of Poverty

An in-depth analysis of state-level poverty rates brings out clearly the regional variation in poverty rates. This allows us to identify states that are chronically poor versus the states that have registered impressive gains in reducing poverty. As discussed in Chapter 2, the exercise of identifying the poor at the state level is conducted in terms of state poverty lines

drawn separately for rural and urban areas. The number and percentage of population below the poverty line for Indian states as well as Union Territories (UTs) is reported for the year 2004–2005 in Table 4.7(a). The distribution of states corresponding to different class intervals of poverty ratios is presented in Table 4.7(b) and pictorial representations of the same, each for rural and urban areas, are presented.[17]

The national poverty ratio for 2004–2005 stands at 27.5 percent. The states/UTs with poverty ratios above the national average are Uttar Pradesh, Orissa, Maharashtra, Madhya Pradesh, Bihar, and the newly created states of Uttaranchal, Jharkhand and Chhattisgarh. Of these, Orissa has the highest HCR of 46.4 percent. If we consider rural areas, eight states, namely Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Uttar Pradesh, Uttarakhand and West Bengal are below the national average of 28.3 percent. Of these, Orissa is again the poorest with Jharkhand being a close second. Finally, with regard to urban poverty rates, apart from Karnataka, all other states which were below the overall national average have HCRs below the national average of 27.5 percent. Here too, Orissa is the state with the highest rate of urban poverty.

Turning to the distribution of states according to poverty classes, as can be seen from Table 4.7(b), states which usually have relatively high rural poverty rates of more than 30 percent also have relatively high rates of urban poverty. Among these are Bihar, Orissa, Madhya Pradesh, Uttar Pradesh, Chhattisgarh and Uttarakhand. A notable exception in this regard is Jharkhand which falls within the highest class of poverty rates (40 to 50) but has lower than average levels of urban poverty.

If we consider states which are at the lower end of the poverty spectrum, we find from Table 4.7(b) several states do well both in terms of rural and urban poverty—Delhi, Punjab and Chandigarh. Finally, an observation with respect to the north-eastern states of Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura: While these states have urban poverty rates of less than 10 percent, rural poverty in these states is significantly higher, falling in the range of 20 and 30 percent.

An important feature of the incidence of poverty in India is the skewed nature of the distribution of poor people across states with a few states accounting for a large majority of the poor. The distribution of India's poor in 2004–2005 is presented in Figures 4.2-4.4 where estimates are based on Table 4.7(a). A cut-off of 5 percent has been taken to define the 'Others' category in the figures. For instance, as of 2004–2005, around 36 percent of the rural poor in India resided in just two states, Uttar Pradesh and Bihar; and only six of the 35 states and UTs together accounted for 67 percent of the rural poor (Figure 4.2). With regard to the urban poor, the picture is similar with the states of Maharashtra and Uttar Pradesh accounting for around

TABLE 4.7(a) Number and Percentage of Population Below Poverty Line in Select States: 2004–05

States/Union Territories	Rural		Urban		All	
	% of persons	No. of persons (millions)	% of persons	No. of persons (millions)	% of persons	No. of persons (millions)
Andhra Pradesh	11.2	6.47	28.0	6.14	15.8	12.61
Assam	22.3	5.45	3.3	0.13	19.7	5.58
Bihar	42.1	33.67	34.6	3.24	41.4	36.91
Chhattisgarh	40.8	7.15	41.2	1.95	40.9	9.10
Delhi	6.9	0.06	15.2	2.23	14.7	2.29
Goa	5.4	0.04	21.3	0.16	13.8	0.20
Gujarat	19.1	6.35	13.0	2.72	16.8	9.07
Haryana	13.6	2.15	15.1	1.06	14.0	3.21
Himachal Pradesh	10.7	0.61	3.4	0.02	10.0	0.64
Jharkhand	46.3	10.32	20.2	1.32	40.3	11.64
Karnataka	20.8	7.50	32.6	6.38	25.0	13.89
Kerala	13.2	3.24	20.2	1.72	15.0	4.96
Madhya Pradesh	36.9	17.56	42.1	7.40	38.3	24.97
Maharashtra	29.6	17.11	32.2	14.63	30.7	31.74
Manipur	22.3	0.38	3.3	0.02	17.3	0.40
Meghalaya	22.3	0.44	3.3	0.02	18.5	0.45
Nagaland	22.3	0.39	3.3	0.01	19.0	0.40
Orissa	46.8	15.18	44.3	2.67	46.4	17.85
Punjab	9.1	1.51	7.1	0.65	8.4	2.16
Rajasthan	18.7	8.74	32.9	4.75	22.1	13.49
Sikkim	22.3	0.11	3.3	0.00*	20.1	0.11
Tamil Nadu	22.8	7.65	22.2	6.91	22.5	14.56
Uttar Pradesh	33.4	47.30	30.6	11.70	32.8	59.00
Uttarakhand	40.8	2.71	36.5	0.89	39.6	3.60
West Bengal	28.6	17.32	14.8	3.51	24.7	20.84
A & N Islands	22.9	0.06	22.2	0.03	22.6	0.09
Chandigarh	7.1	0.01	7.1	0.07	7.1	0.07
Dadra & N. Haveli	39.8	0.07	19.1	0.02	33.2	0.08
Daman and Diu	5.4	0.01	21.2	0.01	10.5	0.02
Lakshadweep	13.3	0.01	20.2	0.01	16.0	0.01
Pondicherry	22.9	0.08	22.2	0.16	22.4	0.24
All India	**22.6**	**220.01**	**20.1**	**80.75**	**22.6**	**300.76**

Notes: 1. Poverty ratio of Assam is used for Sikkim, Meghalaya, Manipur and Nagaland. 2. Poverty line of Maharashtra and expenditure distribution of Goa is used to estimate the poverty ratio of Goa 3. Poverty ratio of Tamil Nadu is used for Pondicherry and A & N Islands. 4. Urban Poverty Ratio of Punjab used for both rural and urban poverty of Chandigarh. 5. Poverty line of Maharashtra and expenditure distribution of Dadra and N. Haveli is used to estimate poverty ratio of Dadra & N. Haveli. 6. Poverty ratio of Goa is used for Daman and Diu. 7. Poverty ratio of Kerala is used for Lakshadweep.

Source: Poverty Estimates for 2004–05, Government of India Press Information Bureau. URP consumption = Uniform Recall Period consumption in which the consumer expenditure data for all the items are collected from 30–day recall period.

TABLE 4.7 (b) Distribution of Poverty Rates across Select States : 2004–05

Class intervals	States/UTs (Rural)	States/UTs (Urban)
Less than 10.00	Delhi, Goa, Punjab, Chandigarh, Daman And Diu	Assam, Himachal Pradesh, Manipur, Meghalaya, Nagaland, Punjab, Sikkim, Chandigarh,
10.00 – 20.00	Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Kerala, Rajasthan, Lakshadweep	Delhi, Gujarat, Haryana, West Bengal, Dadra & N. Haveli,
20.00 – 30.00	Assam, Karnataka, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu, Tripura, West Bengal, A&N Islands, Pondicherry, Maharashtra	Andhra Pradesh, Goa, Jharkhand, Kerala, Tamil Nadu, A & N Islands, Daman & Diu, Lakshadweep, Pondicherry
30.00 – 40.00	Madhya Pradesh, Uttar Pradesh, Dadra and N. Haveli,	Bihar, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh, Uttarakhand,
40.00 – 50.00	Bihar, Chhattisgarh, Jharkhand, Orissa, Uttarakhand	Chhattisgarh, Madhya Pradesh, Orissa
More than 50.00		

35 percent of the total urban poor in India with seven states accounting for around 72 percent of the urban poor (Figure 4.2).

Trends in Poverty Rates across Major States: Pre- and Post-reform Years

The extent to which poverty ratios in states have been changing over time can be analysed with reference to Table 4.8. The table presents state-level values of HCRs along with the relative ranks of major states in terms of the

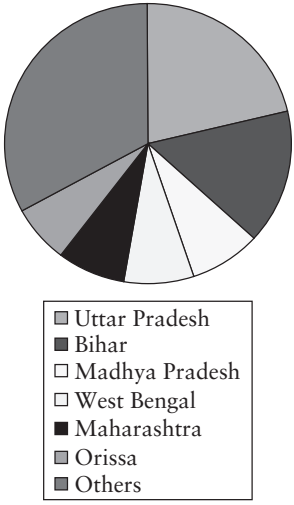


FIGURE 4.2 Distribution of Rural Poor Across States in India: 2004–05

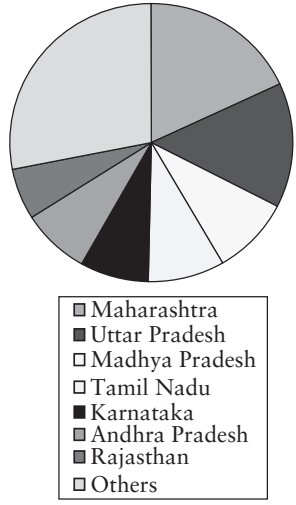


FIGURE 4.3 Distribution of Urban Poor Across States in India: 2004–05

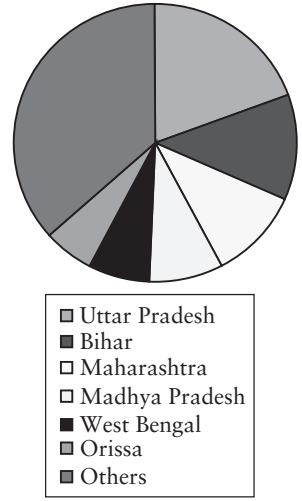


FIGURE 4.4 Distribution of All Poor Across States in India: 2004–05

HCR and how these have changed over time between 1983 and 2004–2005. The data is based on state-wise poverty estimates in Himanshu.[18] Note here that the poverty lines used to derive the HCR estimates and the associated rankings are slightly different from those used to derive estimates in Table 4.7. If we cross-check the rankings in Table 4.8 for the year 2004–2005 with the rankings for the same set of states based on Table 4.7(a) we find that while most of the state-level poverty ratios derived from the two sets of estimates are close, the one state where there is significant difference in the ratio is Uttaranchal; for rural areas, the poverty ratio according to the Planning Commission estimates is much higher at 40.8 percent compared to 14.9 percent as estimated by Himanshu.[19] Such large discrepancies may also be seen for Uttaranchal with respect to the urban poverty rate.

Examining the state-wise poverty rates over the years, one observes that poverty rates have consistently gone down over the years for all states with the notable exceptions of Orissa and Uttaranchal where the urban poverty rate increased from 40.6 percent to 43.7 percent, and 12.7 percent to 17.0 percent, respectively, between 1993–1994 and 2004–2005. Some of the states where the decline has been relatively substantial in absolute terms (more than 10 percentage points over the 1993–1994 level) particularly since the mid-1990s are (*i*) for rural areas—Assam, Haryana, Jharkhand, Karnataka, Tamil Nadu, Himachal Pradesh, Uttar Pradesh, Uttaranchal and Bihar, and (*ii*) for urban areas—only Andhra Pradesh and Tamil Nadu. The estimates in the table show that urban poverty rates have been stickier compared to rural rates, with the former actually increasing for two states. For instance, of the

TABLE 4.8 Relative Ranking of Major States in Terms of Head-Count Ratio: 1983 to 2004–05

	Rural				Urban			
	1983	1987–1988	1993–1994	2004–05	1983	1987–1988	1993–1994	2004–2005
Andhra Pradesh	26.8 (15)	21.0 (15)	15.9 (18)	10.8 (18)	41.2 (10)	41.1 (6)	38.8 (6)	27.1 (9)
Assam	44.6 (10)	39.4 (10)	45.2 (4)	21.7 (10)	25.9 (16)	11.2 (18)	7.9 (19)	3.7 (19)
Bihar	64.7 (3)	54.2 (2)	56.6 (2)	42.2 (3)	61.6 (1)	63.8 (1)	40.7 (3)	38.1 (4)
Chhattisgarh	50.6 (6)	46.7 (5)	44.4 (5)	42.0 (4)	50.7 (6)	36.0 (13)	44.2 (2)	40.7 (3)
Gujarat	28.9 (14)	28.3 (14)	22.2 (17)	19.4 (12)	41.9 (9)	38.5 (11)	28.3 (10)	14.2 (16)
Haryana	21.9 (17)	15.3 (17)	28.3 (13)	13.6 (15)	26.4 (15)	18.4 (16)	16.5 (15)	15.6 (15)
Himachal Pradesh	17.0 (18)	16.7 (16)	30.4 (11)	10.9 (17)	11.0 (19)	7.2 (19)	9.3 (18)	5.0 (17)
Jharkhand	65.5 (2)	52.8 (3)	62.3 (1)	42.9 (2)	40.5 (13)	34.6 (14)	26.5 (11)	20.7 (12)
Karnataka	36.3 (12)	32.6 (12)	30.1 (12)	20.0 (11)	43.6 (8)	49.2 (3)	39.9 (12)	33.3 (5)
Kerala	39.6 (11)	29.3 (13)	25.4 (15)	13.2 (16)	48.0 (7)	38.7 (9)	24.3 (13)	20.6 (13)
Madhya Pradesh	49.0 (7)	40.1 (9)	39.2 (8)	35.8 (5)	56.1 (2)	50.0 (2)	49.0 (1)	42.3 (2)
Maharashtra	45.9 (9)	40.9 (8)	39.2 (9)	35.8 (7)	41.1 (12)	40.5 (7)	35.0 (8)	32.8 (6)
Orissa	68.5 (1)	58.7 (1)	49.8 (3)	46.9 (1)	54.0 (3)	42.6 (5)	40.6 (4)	43.7 (1)
Punjab	14.3 (19)	12.8 (19)	11.7 (19)	10 (19)	22.9 (17)	13.7 (17)	10.9 (17)	5 (18)
Rajasthan	35.0 (13)	33.3 (11)	26.4 (14)	19.0 (13)	41.2 (11)	37.9 (12)	31.0 (9)	28.5 (8)
Tamil Nadu	54.8 (5)	46.3 (6)	32.9 (10)	22.7 (9)	51.9 (5)	40.2 (8)	39.9 (5)	24.1 (11)
Uttar Pradesh	47.8 (8)	43.3 (7)	43.1 (6)	33.9 (6)	52.7 (4)	46.4 (4)	36.1 (7)	30.7 (7)
Uttaranchal	25.2 (16)	13.2 (18)	24.8 (16)	14.9 (14)	22.4 (18)	20.4 (15)	12.7 (16)	17.0 (14)
West Bengal	63.6 (4)	39.0 (4)	37.2 (7)	28.7 (8)	33.5 (14)	33.7 (10)	22.9 (14)	15.4 (10)

Figures in brackets are the ranks

Notes: Ranked in descending order of HCR. A higher number stands for lower HCR.

Source: Ranks computed from Himanshu (2007).

19 states presented in the table, urban poverty rates for nine states decreased by less than 5 percent; the corresponding number for rural areas was five. Most importantly, states with high poverty rates exceeding 40 percent in 1993–1994 continued to be in this league in 2004–2005.

With respect to poverty rankings among the major states, as Table 4.8 shows, significant reductions in poverty ratios between years have not necessarily translated into better ranks. The ranks in Table 4.8 are based on Himanshu's estimates which derive poverty estimates consistently across several NSS rounds after taking into account all the newly created states such as Uttaranchal, Chhattisgarh, etc. The ranks are presented in descending order of poverty rates, with the lower ranks corresponding to higher HCRs. This is particularly the case for states which have had high poverty rates to begin with. A case in point is Bihar; a decline of rural HCR by around 14 percentage points from 56.6 percent in 1993–1994 to 42.2 percent in 2004–2005 improved its rank from being the poorest state to the second poorest state with respect to rural poverty. Jharkhand is a similar case. In the case of Madhya Pradesh and Orissa, although rural poverty rates in 2004–2005 were indeed lower than the 1993–1994 rates, they became poorer relative to the other states as their poverty rank moved up from 8 to 5 in the case of the former and from 2 to 1 in the case of the latter.

Largely consistent with our analysis of absolute changes in poverty rates, we find that with respect to rural areas, the states of Orissa, Uttar Pradesh, Bihar, Maharashtra and Chhattisgarh have been consistently poor with little variation in their ranks over the years. Orissa, for example, has had the highest poverty rates for three of the four years, i.e., 1983, 1987–1988 and 2000–2004. In the case of Bihar too, its rank has hovered around 2 and 3 over the years. States that have consistently maintained relatively low rural poverty rates are Andhra Pradesh, Karnataka, Punjab and Rajasthan. States that have shown a worsening of poverty particularly since 1988–1989 are Madhya Pradesh, Uttaranchal and Madhya Pradesh. Among the states that have shown marked improvement in rural poverty rates over the years are Gujarat, Himachal Pradesh, Assam and Haryana (between 1993–19094 and 2004–2005), and West Bengal since 1983.

With regard to the ranking among states on the basis of the incidence of urban poverty too, Orissa, Bihar and Madhya Pradesh have had consistently high rates of urban poverty.

As in the case of aggregate growth rates, it is of interest to analyse how states have fared in terms of annual growth rates of HCR between 1983–1994 and 1993–2005. For this, we rank the states based on estimates of annual growth rates of 19 major states computed in Himanshu.[20] The estimates of the annual growth rates for rural and urban areas are presented

in Tables 4.9(a) and 4.9(b) and the ranks are presented separately for rural and urban areas in Figures 4.5(a) and 4.5(b), respectively.

As can be noted from the estimates in the tables as well as from the figures, both with respect to rural and urban areas, there has been a 'reversal of fortune' with respect to poverty reduction. States for which the decline in poverty rates was relatively substantial during the 1980s and early 1990s are the ones that have fared poorly in the latter period—Andhra Pradesh (rural), Gujarat (rural), Orissa (rural and urban), Bihar (urban) and several others. In the case of Orissa, the growth rate of poverty in fact turned positive between 1993 and 2005. The reverse is true for states such as Assam (rural), Himachal Pradesh (rural and urban), Bihar (rural) and Andhra Pradesh (urban). In fact, Himachal Pradesh has moved from having positive growth rates of HCR in rural areas in the earlier sub-period to negative growth rates since the mid-1990s. Finally, in several states like Maharashtra, Kerala and Gujarat, poverty reduction rates have been sticky [Table 4.9(b)].

Incidence of Poverty among North-eastern States

Most of the state-level analysis of poverty in India pertains to the major states that account for around 96 percent of the population in India.[21] Such analysis, more often than not, excludes the north-eastern states (with the notable exception of Assam), which are very small both in terms of population and geographical area.

Other than Assam, the north-eastern (NE) states account for only 3.8 percent of the total population in India[22] and are considered special category states, depending upon the center for most of their developmental expenditure. As can be seen from Table 4.7(a), the HCRs for the north-eastern states are considerably lower than the national average. Moreover, the variation in the HCR across states is relatively low, falling within the range of 17.3 (Manipur) and 20.1 (Sikkim). This could be because the poverty line of Assam has been taken to estimate the HCR for all the other north-eastern states. For an earlier point of time, 1993–1994, Dubey and Kharpuri[23] following Dubey and Gangopadhyay (1998) used different poverty lines for the different states to estimate HCR.[24] The resulting estimates showed much more variation across the NE states, with HCR ranging from 3.86 for Nagaland to as high as 52.26 for Assam.

While poverty ratios are not directly comparable between 1999–2000 and 2004–2005 due to non-comparability of NSS survey design mentioned earlier, nonetheless, estimates released by the Planning Commission for these two years show a sharp decline in HCRs which is unlikely to follow only from the non-comparability of the two NSS rounds.[25] Such sharp changes do not in general appear for other states. As can be seen from Table 4.10,

TABLE 4.9 (a) Annual Growth Rates in Poverty (HCR) Across Major States in India : 1983–94 and 1993–2005

	Rural		Urban	
	1983–1994	1993–2005	1983–1994	1993–2005
Andhra Pradesh	–1.04	–0.47	–0.23	–1.07
Assam	0.06	–2.13	–1.72	–0.39
Bihar	–0.77	–1.3	–1.99	–0.24
Chhattisgarh	–0.58	–0.22	–0.61	–0.32
Gujarat	–0.64	–0.25	–1.3	–1.28
Haryana	0.6	–1.33	–0.94	–0.08
Himachal Pradesh	1.27	–1.77	–0.17	–0.38
Jharkhand	–0.31	–1.76	–1.33	–0.53
Karnataka	–0.59	–0.92	–0.35	–0.6
Kerala	–1.36	–1.11	–2.26	–0.34
Madhya Pradesh	–0.94	–0.31	–0.67	–0.61
Maharashtra	–0.76	–0.72	–0.58	–0.2
Orissa	–1.78	–0.27	–1.27	0.28
Punjab	–0.24	–0.16	–1.14	–0.54
Rajasthan	–0.82	–0.68	–0.97	–0.23
Tamil Nadu	–2.08	–0.93	–1.14	–1.43
Uttar Pradesh	–0.45	–0.84	–1.59	–0.49
Uttaranchal	–0.03	–0.9	–0.93	0.39
West Bengal	–2.14	–1.15	–1.01	–0.69

Source: Computed from Himanshu (2007). Lower number implies lower annual percentage change in poverty.

TABLE 4.9(b) Classification of States by Rates of Growth of Poverty Reduction: 1983–94 and 1993–2005

Rate of Poverty Reduction	States (Rural)	States (Urban)
Sharp to Moderate Decrease in Rate of Decline	Andhra Pradesh, Gujarat, Madhya Pradesh, Orissa, Tamil Nadu, Chhattisgarh, West Bengal	Assam, Bihar, Chhattisgarh, Haryana, Jharkhand, Kerala, Orissa, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, Uttaranchal, West Bengal
Sharp to Moderate Increase in Rate of Decline	Assam, Bihar, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Uttar Pradesh, Uttaranchal	Andhra Pradesh, Himachal Pradesh, Karnataka, Tamil Nadu
Relatively sticky	Kerala, Maharashtra, Punjab, Rajasthan	Gujarat, Madhya Pradesh

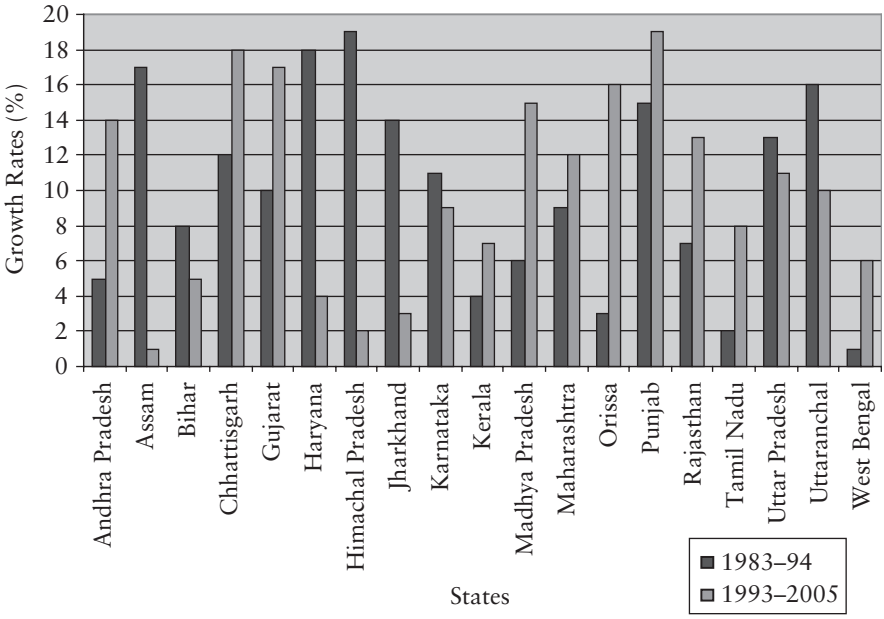


FIGURE 4.5(a) Ranking of Major States by Annual Rural Growth Rates: 1983–94 and 1993–05

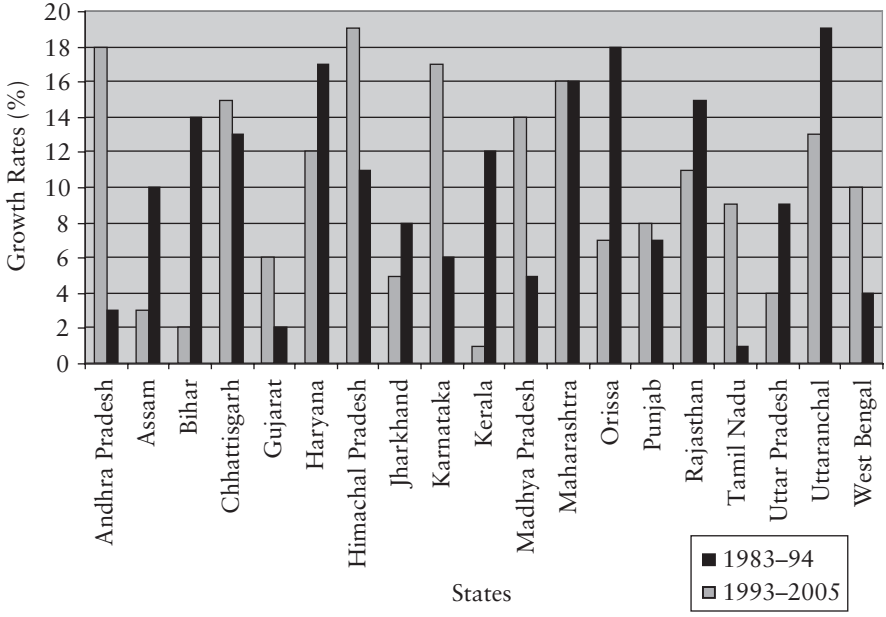


FIGURE 4.5(b) Ranking of Major States by Annual Urban Growth Rates: 1983–94 and 1993–2005

the reduction in HCRs in the course of five years has come down drastically, along with a sharp reduction in the number of poor in these states. Also, while in 1999–2000, the poverty ratios for the NE states were above the national average with the exception of Mizoram, the picture reverses in 2004–2005 with the HCRs of all the NE states being lower than the national average. If we go by the argument by Dubey and Kharpuri (2000)[26] that, given the differences in the socio-economic characteristics among the NE states itself, the use of the poverty line of Assam to estimate the poverty ratios of other NE states is likely to overestimate the incidence of poverty in these states, the poverty ratios of the NE states reported for 2004–2005 vis-à-vis other states in the country can be expected to be even lower.

An important feature of poverty incidence in the NE states is that, for all these states, the rural HCRs are systematically higher than the urban rates. Indeed, these are significantly higher in several of the states. As discussed in Mehta and Shah,[27] two types of geographical regions in India are particularly worse off in terms of 'geographical capital,' i.e., agro-climatic conditions, inadequate infrastructure, physical isolation and social alienation. These are the large tracts of dry lands and the forest-rich areas. The hilly regions that dominate the landscape of the NE states particularly fall into the latter category, dominated by tribal populations with limited access to geographical capital. Much of the poverty in this area stems from a lack of access and title to productive resources like agricultural land, farm inputs and environmental degradation in terms of reduction in forest cover. In the same vein, success in poverty reduction has stemmed from institutional

TABLE 4.10 Number and Percentage of People Below the Poverty Line, 1999–2000 and 2004–05: Select States in the North East

	1999–2000		2004–2005	
	No. of persons (millions)	HCR (%)	No. of persons (millions)	HCR (%)
Assam	9.45	36.09	5.58	19.7
Manipur	0.72	28.54	0.40	17.3
Meghalaya	0.82	33.87	0.45	18.5
Nagaland	0.55	32.67	0.40	19.0
Sikkim	0.20	36.55	0.11	20.1
Tripura	1.30	34.44	0.64	18.9
All India	**259.7**	**23.6**	**301.4**	**18.96**

Source: 1999–2000 estimates sourced from national Human Development Report, 2001, Planning Commission, New Delhi, cited in Assam Human Development Report, 2003. Estimates for 2004–2005 sourced from Planning Commission, New Delhi.

intervention that has been attributed to the policy of 'non-interference and protection' of tribal lands which have prevented tribals from being alienated from their major source of livelihood, i.e., their land holdings.[28]

Incidence and Trends of Chronic Poverty across States

Tables 4.11(a) and 4.11(b) present statistics related to the proportion of very poor and chronically poor persons across states classified by rural and urban areas. The data for the very poor are based on estimates in Dev and Ravi (2007) and reported for 18 major states. As is evident from both state-wise and aggregate estimates, the proportion of very poor persons has fallen sharply for a majority of the states since the 1980s, with the decrease being more substantial for rural than for urban areas. There are, however, several states for which the proportion of very poor was high to begin with and it has changed relatively less between 1993–1994 and 2004–2005; In Orissa, this proportion has increased in rural areas; across urban areas, this

TABLE 4.11(a) Percentage of Very Poor Persons (Head Count Ratio) across Major States 1983, 1993–94 and 2004–05

	Rural			Urban		
States/Union Territories	1983	1993–94	2004–05	1983	1993–94	2004–05
1. Andhra Pradesh	10.98	4.11	2.80	17.62	19.55	9.86
2. Assam	14.24	13.52	4.96	6.36	1.21	0.53
4. Bihar	39.53	28.29	14.65	26.34	18.1	15.66
5. Gujarat	9.53	5.75	5.04	15.71	11.08	2.72
6. Haryana	8.74	9.62	2.91	10.31	5.01	4.94
7. Himachal Pradesh	6.76	9.03	1.95	7.02	0.92	1.07
8. Karnataka	18.36	10.76	3.83	24.95	22.62	18.76
9. Kerala	18.54	9.31	3.91	25.43	9.5	8.66
10. Madhya Pradesh	26.50	17.59	14.72	29.87	26.09	18.04
11. Maharashtra	23.29	16.85	11.25	22.49	19.95	14.8
12. Orissa	43.63	23.27	25.16	27.21	23.67	27.63
13. Punjab	5.08	2.06	1.04	10.61	2.07	0.51
14. Rajasthan	22.87	8.25	3.39	18.93	13.96	12.02
15. Tamil Nadu	34.89	12.68	5.04	27.13	19.7	17.97
16. Uttar Pradesh	24.33	19.93	11.14	27.72	18.58	13.92
17. West Bengal	39.26	11.30	7.41	14.43	9.53	6.57
All India	**25.52**	**15.38**	**9.64**	**22.45**	**16.00**	**12.00**

Source: Dev and Ravi.

TABLE 4.11(b) Percentage and Distribution of Chronically Poor Persons across Major States 1999–2000

S. No	State	Rural		Urban	
		Incidence of CP (All HHs)	State-wise Distribution of CP (%)	Incidence of CP (All HHs)	State-wise Distribution of CP (%)
1.	Andhra Pradesh	4.8	9.3	7.9	6.9
2.	Assam	16.6	2.7	1.8	0.2
3.	Bihar	18.6	10.9	18.9	7.6
4.	Gujarat	3.8	4.3	4.1	2.2
5.	Harayana	7.8	1.8	7	1.3
6.	Himachal Pradesh	5.6	0.8	1.5	-
7.	Karnataka	7.2	5.2	10.5	5.5
8.	Kerala	2.7	3.2	5.6	1.6
9.	Madhya Pradesh	19.2	8.2	25.1	14.5
10.	Maharashtra	13	8.5	13.4	17.5
11.	Orissa	27.6	3.6	26	5.9
12.	Punjab	4.8	2	3.2	0.9
13.	Rajasthan	3.3	4.7	11.5	4
14.	Tamil Nadu	9.6	6.8	8.7	7.8
15.	Uttar Pradesh	20.9	16.4	18.1	19.9
16.	West Bengal	19.1	8.2	5.7	3.7
17.	Other States & UT	0.9	1.8	1.2	0.6
All India		**13.6**	**100**	**11.3**	**100**

Source: Radhakrishna et al., 2006.

proportion has increased for Bihar, Karnataka, Kerala, Maharashtra, Orissa (increased by four percentage points), Rajasthan and Tamil Nadu.

As of 2004-2005, Punjab was among the states with the lowest proportion of very poor in rural areas. The state with the highest proportion of very poor in rural areas was Bihar, followed by Orissa. With respect to urban areas, Punjab had the lowest proportion of very poor closely followed by Assam. The state with the highest proportion of very poor in urban areas was Orissa, followed by Karnataka.

Turning to the incidence of chronic poverty across states, a limitation in analysing the incidence of chronic poverty in India particularly at the disaggregated level is the lack of recent data. As several analysts have

pointed out, such data limitation follows essentially from the fact that existing databases on poverty such as NSS are based on intermittent surveys or based on village surveys for specific years. These are not best suited for determining chronic poverty, a defining characteristic of which is its duration.[29] What is required for this purpose is longitudinal panel data where the same households are tracked over time. However, till date, only two panel data sets have been used to study chronic poverty, one being a panel survey of 4118 rural households in India carried out by the National Council of Applied Economic Research (NCAER) for the years 1968–1969, 1969–1970 and 1970–1971[30] and the other being the ICRISAT data for semi-arid areas.[31] While existing studies focus on income-based measures of chronic poverty, a more recent approach has been to conceptualize chronic poverty in terms of certain non-income criteria. Two such criteria have been proposed to identify a chronically poor household, namely (*i*) a poor household with at least one stunted child, and (*ii*) a poor household with a woman suffering from chronic energy deficiency. Based on the first criterion, the proportion of chronic poor in India as of 1999–2000 has been estimated at 13.84 percent and by the second criterion, at 8.96 percent.

Referring to Table 4.11(b), which provides state-wise estimates of households as well as distribution of households with chronic poverty, sourced from Radhakrishna et al. (2006),[32] 13.6 percent of the households in rural areas experience chronic poverty; the corresponding percentage for urban areas is 11.3 percent. These estimates are substantial when one considers that households experiencing chronic poverty constitute about half of the poor households in rural and urban areas.[33]

Considering the incidence of chronic poverty across states, it can be observed from Table 4.11(b) that as with respect to the other measures of poverty, Orissa has the highest proportion of households living in chronic poverty both in rural and urban areas. Apart from Orissa, states that have high incidence of chronic poverty in urban as well as rural areas are Bihar, Madhya Pradesh, Maharashtra, Uttar Pradesh and Tamil Nadu. States where chronic poverty is substantially higher in rural areas are Assam (almost eight times more), Himachal Pradesh and West Bengal (around three times more). States where the urban areas have higher incidence of households with chronic poverty are Karnataka, Kerala, and Rajasthan (almost three times more).

Finally, examining the distribution of chronically poor households in rural and urban areas, we find that Uttar Pradesh and Bihar, followed by Andhra Pradesh, Madhya Pradesh, Maharashtra and West Bengal together account for around 60 percent of chronic poverty in the rural areas. The distribution is more skewed in the case of the chronically poor in urban

areas: three states, namely Madhya Pradesh, Uttar Pradesh and Maharashtra account for around 52 percent.

Socio-economic Spread of Poverty[34]

A further analysis of the spread of poverty may be done in terms of various socio-economic groups since belonging to certain social groups can predispose their members to poverty and deprivation.

The NSS classifies households into major social categories. The 50th round (1993–1994) classified the population into three categories, the two socially disadvantaged classes specifically mentioned in the Constitution for affirmative action, namely Scheduled Castes (SCs) and Scheduled Tribes (STs), and 'Others.' The SCs constitute a collection of castes that have been subjected to 'untouchability' and other forms of discrimination over time. The STs have been identified on the basis of certain well-defined criteria based on their distinctive culture and pre-agricultural modes of production.[35] It is estimated that two-thirds of the bonded workers who are chronically poor and subject to inter-generational transmission of poverty are identified in India as SCs and STs.[36] The 55th round (1999–2000), further classified the 'Others' category into 'other backward castes' (OBCs) for eligibility in affirmative action programmes initiated by states, and the remaining as 'others.' For comparability between the 50th and 55th rounds, estimates for the 55th round have been adjusted.[37] State-wise estimates of poverty ratios across social groups is, however, reported for the year 1999–2000 for all four social classes defined in the 55th round.

SCs are concentrated in the states of Punjab (highest proportion of SCs at 28.9 percent), Uttar Pradesh, West Bengal, Bihar, Tamil Nadu, Andhra Pradesh, Rajasthan and Karnataka. STs are concentrated in Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and the NE states (Mizoram with the highest proportion at 94.5 percent).

With regard to analyzing the HCR across economic groups based on a major source of means of livelihood, a household is classified as 'Agricultural Labor' if its income from agriculture constitutes 50 percent or more of its total income. A similar definition is used for 'Self-Employed in Agriculture'. A household is classified as 'Self-Employed in Non-Agriculture' if its income from that source is greater than that from rural labor as well as from all other gainful sources put together. If a household is not one of these three types but its income from total rural labor is greater than that from all self-employment and from other gainful sources, it is classified as 'Other Labor'. The remaining households are classified as 'Other Households'. Similarly, in urban areas, households are classified as 'Self-Employed', 'Regular wage

or Salary earning' or 'Casual Labor' depending on the major source of its income from 'gainful employment' during the 365 days preceding the date of survey. A household that derives income from a number of different sources, with no one activity contributing the major share, is classified as 'Others'.

The National Level Scenario

At an all-India level SCs and STs' account for 31 percent of the total population in rural areas. This proportion is the same as that for the category 'others'. The highest proportion is accounted for by 'other backward classes'. In urban areas 'others' are in a majority with a share of 52 percent. The share of SCs and STs is 18 percent. The corresponding estimate for other backward categories is 30 percent.

The incidence of poverty in terms of the Head Count Ratio (HCR) across different social groups and by means of livelihood is presented for the year 1999–2000 in Table 4.12(a). In the Table, the classification of social groups into three major groups follows the one in Sundaram and Tendulkar (2005) mentioned above. While the social and economic groups are household characteristics, the poverty measures derived are defined at the individual rather than at the household level.[38] Thus, the HCR of an SC is the proportion of SC persons in an SC household who are below the poverty line. As can be seen from the Table, with regard to both rural and urban areas, the incidence of poverty is the highest for STs, followed by SCs, and then by the Others category. Specifically, in rural areas the HCR for STs is more than double of the 'others' category (48.02 compared to 23.23), and even significantly higher than that of the SCs (38.38). The picture is similar in the case of urban areas except for the fact that the difference in HCR between SCs and STs is much narrower. These statistics are consistent with the fact that the concentration of the STs in the lower monthly per capita consumption expenditure class is very high; in rural areas, approximately 50 percent of the ST households are concentrated in the consumption class of less than Rs 340 while the corresponding figure for SCs, STs, OBCs and others are 40, 30 and 17, respectively. In urban areas, more than 52 percent of STs are within the range of Rs 575 consumption class as compared to 29 percent in the 'others category'.[39]

Examining the HCRs by economic groups [Table 4.12(a)], we find that in the rural areas, the highest incidence of poverty is among agricultural labor (44.64), with 'other labor' being a distant second (27.79). Within agricultural labor, if we look across social classes, the incidence of poverty among STs is the highest at 60.69, with a significant disparity with respect to the other classes. With regard to urban areas, the highest incidence of poverty is expectedly among casual labor, around 50 percent, with the HCRs

TABLE 4.12(a)

Social group/household type	Scheduled Castes	Scheduled Tribes	Others	All Social Groups
Rural				
Self-employed in agriculture	30.11	39.97	17.97	21.62
Self-employed in non-agriculture	32.76	40.87	21.06	24.09
Agriculture labor	46.2	60.69	39.39	44.64
Other labor	32.82	44.22	22.59	27.79
All	22.45	23.55	12.81	14.93
	38.38	48.02	23.23	28.93
Urban				
Self-employed	45.28	36.95	23.59	26.11
Regular wage/salaried workers	18.12	20.16	9.83	11.36
Casual Labor	58.49	63.89	45.08	49.95
Others	33.89	24.91	14.26	16.85
All	37.84	35.15	19.98	23.09

Source: Sundaram and Tendulkar (2005).

TABLE 4.12(b) Annual Compound Rate of Change in HCR among Social Groups in Rural and Urban Areas: 1983–2000

	Rural			Urban		
	1983–1993	1993–2000	1983–2000	1983–1993	1993–2000	1983–2000
Scheduled Castes	-1.9	-4.6	-2.9	-1.23	-4.2	-2.36
Scheduled Tribes	-2	-2.1	-2	-2.4	-3.2	-2.73
Others	-1.7	-5.9	-3.3	-2.42	-6.4	-3.91
All	-2	-5.1	-3.2	-2.2	-5.7	-3.5

Source: Thorat (2005).

being relatively lower for other occupational categories. Again, similar to the scenario in the rural areas, the incidence of poverty among the casual workers is the highest among STs (63.89) followed by SCs and others.

The disparity in poverty among the social groups, particularly between SCs and STs, that is clearly evident from Table 4.12(a), has been found to vary over the years. One measure of disparity, the disparity index, is computed as a modified Sopher's index,[39] where a value of zero indicates equality and a value of greater than zero indicates disparity. The disparity between SCs/STs and non SCs/STs, which decreased in the period 1983–1993, increased

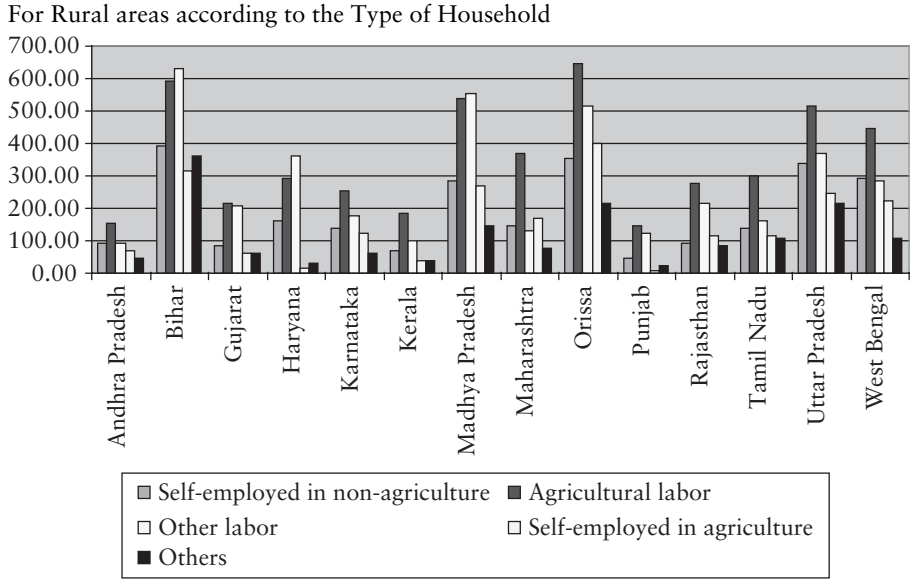
by 1 percent during 1999–2000. In the case of urban poverty, however, the disparity increased both in the 1980s and 1990s, with the increase during the period 1983–2000 estimated at 26 percent.

Examining the trends in the incidence of poverty across social groups, one can notice that with respect to rural poverty, while during the 1980s and early 1990s (1983–1993), poverty declined at more or less the same rate across different social groups (with SCs having the lowest rate), these rates diverged in the latter period coinciding with the post-reform years. The rate of decline was the highest for 'others' at (–)5.9 percent followed by a somewhat lower rate of decline of (–)4.6 percent. However, what is striking is that these rates were more than double the rate of decline for the STs which was at (–)2.1 percent between 1993 and 2000. Overall, during the entire period of 1983–2000, STs fared the worst relative to the other social groups.

Finally, following Sundaram and Tendulkar[40], one can analyse the extent of over-representation of a social group in a given means of livelihood (MOL). Over-representation is measured in terms of a ratio, k, of the share of the social group in a given MOL category to the share of the social group in the total rural/urban population. A value of this ratio greater than one implies over-representation whereas that of less than one is under-representation. Estimates of k for both 1993–1994 and 1999–2000 show that both SCs and STs are over-represented in the economically disadvantaged categories—agricultural labor households and other rural labor households (in rural areas) and, casual labor households in urban areas. On the other hand, in the 'others' category as per the MOL classification pertaining to regular wage/salaried employment, while all the social groups in the rural areas had a k ratio of less than one suggesting under-representation, this was more for SCs and STs. The corresponding scenario is quite different for urban areas where the value of k for regular wage/salaried work is close to or greater than one for both SCs and STs implying that these disadvantaged classes have, through various affirmative action programs of the government, been able to get their fair share of such employment in urban areas.[41]

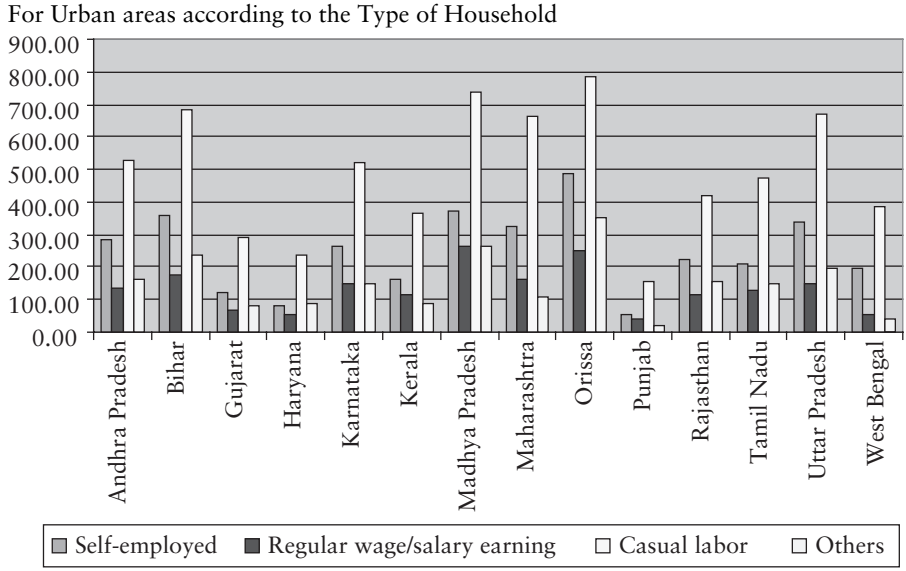
The State-level Scenario

The data reporting the incidence of poverty across states for different social and economic groups is sourced from the 55th round of NSS where social groups are classified into four categories, SCs, STs, OBCs, and Others. Figure 4.6(a) gives, for different economic groups, the state-wise per 1,000 distribution of persons below poverty line in rural areas as of 1999–2000. In rural areas, for most states, the incidence of poverty is higher among 'agricultural laborers' than other occupation classes. The main reason for



Source: Based on NSS Report No. 472

FIGURE 4.6 (a) State-wise per 1,000 Persons Below Poverty Line



Source: Based on NSS Report No. 472Country.

FIGURE 4.6(b) State-wise per 1,000 Persons Below Poverty Line

this is the dependence of this group on subsistence agriculture. This group consists of laborers hired on fields of other large farmers. The other category with high incidence of poverty is 'other labor'. Among the states, Bihar,

Orissa and Madhya Pradesh rank among the top three with regard to high HCRs in agricultural labor and other labor.

In urban areas, as is evident from Figure 4.6(b), the highest incidence of poverty is among the group 'casual laborers'. The HCR for casual labor is concentrated in a few states—the highest is Orissa, followed closely by Madhya Pradesh, Uttar Pradesh, Maharashtra and Bihar. Since these people do not have any permanent source of gainful employment, their incomes keep fluctuating. This is in contrast to the case of wage earners who have a steady source of income. The incidence is lowest among the group 'others'.

Considering the state-wise incidence of poverty among social groups in select Indian states, we find that in rural areas incidence of poverty is in general higher among STs, followed by the SCs, barring Uttar Pradesh, Bihar and Karnataka. While in Uttar Pradesh the incidence is highest among SCs, in the other two states the incidence is the same for the two groups. Nonetheless, the HCRs for STs are high in absolute terms in all these states. The situation in urban areas is somewhat different with the incidence of poverty being in general higher for SCs than for STs. Only in Tamil Nadu and Uttar Pradesh we find the incidence of poverty among the SCs to be lower than all other groups.

Additional analysis of HCRs of STs across states based on unit level data of the 55th round of NSS, 42 not reported in Figures 4.7(a) and 4.7(b), show that states with extremely high (>50 percent) incidence of tribal poverty are Orissa, Jharkhand and Madhya Pradesh (including Chhattisgarh). At the other extreme in the bottom-most rung, states that have poverty ratios of less than 20 percent are Andhra Pradesh, Gujarat, Karnataka, Rajasthan and the North-eastern hilly states. A case study of poverty among tribals in Orissa reveals that in most of the districts where the tribal population ranges between 30 to 60 percent, the incidence of poverty is as high as over 80 percent. Such extreme poverty is found to be due to the fact that these tribals mostly reside in forest regions and hence are geographically isolated, as well as having little right to use forest resources.

Other Vulnerable Groups

Along with marginalized social groups such as SCs and STs, women and children too are highly vulnerable to exogenous shocks and persistent poverty. For instance, gender discrimination in access to health, nutrition, education and security is considered to perpetuate poverty among women over generations.

TABLE 4.13(a) Number and Percentage of Population Below Poverty Line in Major States: 2004–05

States/Union Territories	Rural		Urban		All	
	% of persons	No. of persons (millions)	% of persons	No. of persons (millions)	% of persons	No. of persons (millions)
1. Andhra Pradesh	11.2	6.47	28.0	6.14	15.8	12.61
2. Assam	22.3	5.45	3.3	0.13	19.7	5.58
3. Bihar	42.1	33.67	34.6	3.24	41.4	36.91
4. Chhattisgarh	40.8	7.15	41.2	1.95	40.9	9.10
5. Delhi	6.9	0.06	15.2	2.23	14.7	2.29
6. Gujarat	19.1	6.35	13.0	2.72	16.8	9.07
7. Haryana	13.6	2.15	15.1	1.06	14.0	3.21
8. Himachal Pradesh	10.7	0.61	3.4	0.02	10.0	0.64
9. Jharkhand	46.3	10.32	20.2	1.32	40.3	11.64
10. Karnataka	20.8	7.50	32.6	6.38	25.0	13.89
11. Kerala	13.2	3.24	20.2	1.72	15.0	4.96
12. Madhya Pradesh	36.9	17.56	42.1	7.40	38.3	24.97
13. Maharashtra	29.6	17.11	32.2	14.63	30.7	31.74
14. Orissa	46.8	15.18	44.3	2.67	46.4	17.85
15. Punjab	9.1	1.51	7.1	0.65	8.4	2.16
16. Rajasthan	18.7	8.74	32.9	4.75	22.1	13.49
17. Sikkim	22.3	0.11	3.3	0.00*	20.1	0.11
18. Tamil Nadu	22.8	7.65	22.2	6.91	22.5	14.56
19. Uttar Pradesh	33.4	47.30	30.6	11.70	32.8	59.00
20. Uttarakhand	40.8	2.71	36.5	0.89	39.6	3.60
21. West Bengal	28.6	17.32	14.8	3.51	24.7	20.84
22. A & N Islands	22.9	0.06	22.2	0.03	22.6	0.09
23. Chandigarh	7.1	0.01	7.1	0.07	7.1	0.07
24. Pondicherry	22.9	0.08	22.2	0.16	22.4	0.24
All India	**28.3**	**220.92**	**25.7**	**80.80**	**27.5**	**301.72**

Notes: 1. Poverty ratio of Tamil Nadu is used for Pondicherry and A & N Islands.
2. Urban Poverty Ratio of Punjab used for both rural and urban poverty of Chandigarh.

Source: Poverty Estimates for 2004-05, Government of India Press Information Bureau. URP consumption = Uniform Recall Period consumption in which the consumer expenditure data for all the items are collected from a 30-day recall period.

TABLE 4.13(b) Distribution of Poverty Rates across States: 2004-05

Class intervals	States/UTs (Rural)	States/UTs (Urban)
Less than 10.00	Delhi, Punjab, Chandigarh	Assam, Himachal Pradesh, Punjab, Sikkim, Chandigarh,
10.00–20.00	Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Kerala, Rajasthan	Delhi, Gujarat, Haryana, West Bengal
20.00–30.00	Assam, Karnataka, Sikkim, Tamil Nadu, West Bengal, A&N Islands, Pondicherry , Maharashtra	Andhra Pradesh, Goa, Jharkhand, Kerala, Tamil Nadu, A &N Islands, Pondicherry
30.00–40.00	Madhya Pradesh, Uttar Pradesh	Bihar, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh, Uttarakhand
40.00–50.00	Bihar, Chhattisgarh, Jharkhand, Orissa, Uttarakhand	Chhattisgarh, Madhya Pradesh, Orissa

Poverty among Women

According to the Human Development Report, of the 1.3 billion people worldwide who live in poverty, 70 percent are women.[44] That poverty in India, as elsewhere, has a gender dimension is evident from gender inequalities that exist in the sex ratio, child infanticide, literacy rates, health and nutrition, access to productive resources, etc.

In India, inferences about poverty among women can only be made on the basis of household data. One finds that the incidence of poverty among females has been marginally higher than that of males both in rural and urban areas. As of 1999–2000, in rural areas, the percentage of female persons living in poor households was 27 compared to 26 percent for males, while in urban areas the corresponding percentages for females and males were 25 and 23. Females accounted for slightly less than half (49 percent) of the poor both in rural and urban areas.

While the HCRs by gender do not indicate much difference in the incidence of poverty between males and females, such disparities or gender inequalities may be significant if one considers intra-household inequalities in consumption or other measures of deprivation related to food insecurity, malnutrition, health, wage differentials and access to productive resources like land. One way in which the differences in the incidence of poverty by gender and the possibility of gender bias against women has been determined is by estimating poverty according to whether households are headed by males (Male Headed Households: MHHs) or by females (Female Headed Households: FHHs). Recent estimates comparing the poverty rates in terms of HCR for MHHs

TABLE 4.14 Poverty Incidence by Type of Household

	1987–1988		1993–1994		1999–2000			
					Consumption		Employment	
	Sample size	HCR	Sample size	HCR	Sample size	HCR	Sample size	HCR
				All India				
MHHs	1,09,874	34.05 (0.003)	1,03,920	31.16(0.005)	1,08,358	21.53 (0.003)	1,08,033	28.03 (0.004)
FHHs	11,621	34.43 (0.006)	11,314	30.88 (0.011)	11,873	20.33 (0.006)*	12,184	25.84 (0.006)*
				Rural				
MHHs	71,435	35.36 (0.004)	62,665	33.23 (0.006)	64,466	22.71 (0.004)	64,132	29.95 (0.004)
FHHs	7,582	34.66 (0.007)	6,474	30.6 (0.012)*	6,869	20.43 (0.007)*	7,170	25.5 (0.008)*
	Urban							
MHHs	38,439	29.86 (0.005)	41,255	25.13 (0.006)	43,892	18.36 (0.005)	43,901	22.98 (0.005)
FHHs	4,039	33.67 (0.013)*	4,840	31.64 (0.021)*	5,004	20.05 (0.010)**	5,014	26.88 (0.011)*

Standard error in parantheses

*indicates significantly different at 5% from the corresponding figure for the male-headed household

** indicates significantly different at 10% from the corresponding figure for the male-headed household

HCR head count ratio

MHH male-headed household

FHH female-headed household

HCR has been calculated using Planning Commission poverty lines

Source: Gangopadhyay and Wadhwa (2003).

and FHHs for three time points, 1987–1988, 1993–1994 and 1999–2000 and separately for rural and urban areas reveal several interesting insights.[45] As can be noted from Table 4.13, the HCRs for FHHs were significantly lower in rural areas since 1993–1994. However, the scenario was different for urban areas where FHHs had significantly higher incidence of poverty as compared to MHHs. In general, a gender bias in poverty is found to exist if the household data is characterized not only by sex but also by marital status; not currently married FHHs appear to be more vulnerable to poverty primarily on account of the fact that such heads have less education arising from a gender disadvantage existing within the households.

Child Poverty

Child poverty has been an increasing concern for policy makers both in developed and developing countries. It has been observed that the rate of improvement of the living standard of children has deteriorated during the 1980s and 1990s.[46] Both income and non-income proxies have been used to estimate child poverty, such as the proportion of children living below poverty line households, proportion of children suffering from malnutrition, and school enrolment and drop-out rates.

In India, child poverty has been widespread both in rural and urban areas. As the Human Development Report 2004 noted, India, along with Bangladesh and Nepal has the highest level of child under-nutrition in the world. According to the NSS estimates, as of 1999–2000, the percentage of children aged below 15 years living in households below the poverty line constituted 33 percent in both rural and urban areas. In rural areas, the share of children among poor persons increased from 44 percent in 1993–1994 to 46 percent in 1999–2000. The corresponding percentages for urban areas are 41 and 42 percent.[47]

State-level and all-India estimates of the incidence of child poverty in rural areas are presented in Table 4.15.[48] The estimates pertain to relative child poverty defined as the proportion of children living in households with monthly per capita consumption expenditure (MPCE) lower than 60 percent of the MPCE of the median household. As is evident from the table, while at the all-India level, and for a large number of states,[49] the incidence of child poverty has fallen for all age groups, 0–4 years, 5–9 years and 0–14 years between the years 1993–1994 and 1999–2000, the ones for which there have been relatively steep increases are Assam, Orissa and Punjab. As of 1999–2000, the incidence of child poverty across all age groups was highest in Orissa and lowest in Bihar.

TABLE 4.15 Estimates of Child Poverty using the Relative Poverty Line in Rural Areas in Major States of India: 1993–1994 and 1999–2000

	1993–1994			1999–2000		
	0–4 years	5–9 years	0–14 years	0–4 years	5–9 years	0–14 years
All India	13.57	13.1	12.22	11.7	11.18	10.44
States						
Andhra Pradesh	12.47	10.95	10.44	10.53	8.06	7.7
Assam	4.34	5.40	4.86	11.41	11.32	10.28
Bihar	8.25	6.93	6.98	6.60	6.27	5.96
Gujarat	10.89	10.42	9.87	13.46	11.21	11.33
Haryana	16.57	16.05	15.65	13.67	11.49	11.46
Himachal Pradesh	9.84	10.74	9.06	8.28	8.07	7.22
Karnataka	12.92	14.40	12.27	8.86	11.63	8.89
Kerala	14.41	13.46	13	9.50	10.64	10.26
Madhya Pradesh	14.0	14.07	12.66	10.39	9.99	9.49
Maharashtra	16.87	17.41	15.36	12.18	12.51	12.20
Orissa	12.75	11.51	10.55	18.06	14.42	13.58
Punjab	11.44	11.11	10.49	15.06	11.20	11.26
Rajasthan	13.1	11.93	11.36	7.94	6.74	6.69
Tamil Nadu	12.89	14.50	13.40	14.20	12.66	11.84
Uttar Pradesh	12.95	13.39	12.48	7.59	7.11	6.89
West Bengal	9.86	8.55	8.15	6.69	7.46	6.41

Source: Chandrasekhar S. and M. H. Suryanarayana (2007), 'Prevalence of Child Poverty in India and China', Paper to be presented at the Session on 'Demographic Billionaires: India and China' Compared, Annual Meetings of Population Association of America, 2007.

Non-income Dimensions of Poverty: State-level Scenario

There is a growing consensus among policy makers that the extent of poverty cannot be captured only in terms of income deprivation. There are other important forms of deprivation to be considered, such as access to education, health facilities, high rates of infant mortality and malnutrition, access to safe drinking water and the like. These are evaluated by indices such as the Human Development Index (HDI), Human Poverty Index (HPI) and Social Development Index (SDI) both at the national and state levels.

The HDI for major states are presented in Table 4.16(a) for the year 2001 for both rural and urban areas. The HDI in India is a composite of

TABLE 4.16(a) Human Development Index for Major States in India: Year 2001

States	Rural		Urban	
	Value	Rank	Value	Rank
Andhra Pradesh	0.377	9	0.416	10
Assam	0.348	10	0.386	14
Bihar	0.308	15	0.367	15
Gujarat	0.437	6	0.479	6
Haryana	0.443	5	0.509	5
Karnataka	0.412	7	0.478	7
Kerala	0.591	1	0.638	1
Madhya Pradesh	0.377	9	0.416	10
Maharashtra	0.452	4	0.523	4
Orissa	0.345	12	0.404	11
Punjab	0.475	2	0.537	2
Rajasthan	0.347	11	0.424	9
Tamil Nadu	0.466	3	0.537	2
Uttar Pradesh	0.314	14	0.388	13
West Bengal	0.404	8	0.472	8
All India	**0.381**		**0.472**	

Source: Planning Commission (2002).

variables reflecting attainments in three dimensions of human development, viz., economic, educational and health. These have been determined by per capita monthly expenditure adjusted for inequality, a combination of literacy rate and intensity of formal education and a combination of life expectancy at the age of one and the infant mortality rate. As can be seen from Table 4.16(a), Kerala has the highest HDI both in the rural and urban areas followed by Punjab and Tamil Nadu. The state with the lowest HDI was Uttar Pradesh in rural areas and Assam in urban areas. Examining trends in HDI over time[50] one finds that while there has been improvement in the HDI for a large number of states as well as at the all-India level since 1981, rural–urban differences in HDI have persisted with the former substantially lower than the latter. Further, the relationship between HDI and State Domestic Product has been found to be weak at best; while higher income states such as Punjab, Maharashtra and Tamil Nadu had high levels of HDI, Kerala, a middle income state outperformed these states in terms of HDI.

The Human Poverty Index (HPI) in India is computed as a composite of variables that capture deprivation in three dimensions of development, i.e., economic, educational attainment and health. These have been captured by looking at (*i*) the proportion of population below the poverty line (*ii*)

TABLE 4.16(b) Human Poverty Index for Major States in India: Year 1991

	Rural		Urban	
States	Value	Rank	Value	Rank
Andhra Pradesh	45.04	8	24.78	10
Assam	52.57	11	21.79	9
Bihar	55.85	15	28.04	13
Gujarat	33.59	4	20.29	6
Haryana	32.29	3	17.49	3
Karnataka	37.54	7	20.69	7
Kerala	21.75	1	14.43	1
Madhya Pradesh	48.43	10	25.04	11
Maharashtra	36.53	6	16.23	2
Orissa	53.07	14	29.23	14
Punjab	27.95	2	18.26	4
Rajasthan	53.28	13	27.79	12
Tamil Nadu	33.98	5	18.71	5
Uttar Pradesh	52.43	12	31.20	15
West Bengal	47.00	9	21.52	8
All India	**44.81**		**22.00**	

Source: Planning Commission (2002).

proportion of population without access to safe drinking water/sanitation/electricity/medical attention at birth/vaccination and the proportion living in kutcha houses (*iii*) the proportion of illiterate population and children not enrolled in schools, and (*iv*) the proportion of population not expected to survive beyond the age of 40. As can be seen from Table 4.16(b) which reports HPI for 1991 (the latest data available) for rural and urban areas, the states with the highest incidence of human poverty are Bihar, Orissa, Madhya Pradesh, Uttar Pradesh and Rajasthan. Significantly, these states also featured at the bottom end of the HDI ranking and also had relatively low ranks in terms of the income criterion discussed earlier. As with the case of income measures of poverty, the HPI is also characterized by substantial inter-state variation as well as variation between rural and urban areas. The HPI for rural areas were expectedly systematically higher than that of urban areas across all states. As in the case of HDI, the state with the lowest HPI was Kerala both in rural and urban areas, whereas Bihar had the worst rank for rural areas and Uttar Pradesh for urban areas.

An important measure of deprivation, which has been highlighted in MDGs is hunger together with malnutrition, particularly with respect to children. That this persists in good measure was evident from the fact that a

substantial number of households in India do not have access to two square meals a day. Comparable state-level estimates are given in Table 4.17(a) for 1999–2000. Additionally, Table 4.17(b) provides estimates of undernutrition among children and Chronic Energy Deficiency (CED) among adults in rural areas of India for three time periods, 1975–1979, 1991–

TABLE 4.17(a) Incidence of Hunger in Select States 1999–2000

States/UTs	Members of HHs getting two square meals a day			
	Throughout the year	Only some months of year	Not even some months	Not reported
Andhra Pradesh	97.8	1.7	0.2	0.3
Assam	92.2	3.1	4	0.7
Bihar	93.2	4.7	1.3	0.7
Gujarat	99.4	0.4	0.1	0.1
Haryana	98.3	1.4	0.1	0.2
Himachal Pradesh	99.8	0.1	0	0.1
Karnataka	98.9	0.9	0	0.2
Kerala	96.9	2.3	0.6	0.2
Madhya Pradesh	96.3	3	0.1	0.5
Maharashtra	97.7	1.7	0.2	0.4
Nagaland	97.8	1.4	0.6	2.2
Orissa	91.6	6.5	1.5	0.4
Punjab	99	0.2	0	0.8
Rajasthan	99.7	0.1	0.1	0
Sikkim	99.3	0.3	0	0.5
Tamil Nadu	98.7	0.4	0.3	0.5
Tripura	96.3	2.2	0.7	0.9
Uttar Pradesh	97.4	1.4	0.7	0.6
West Bengal	88.5	8.1	2.3	1
A & N Islands	99.2	0.8	0	0
Chandigarh	100	0	0	0
Dadra & N. Haveli	99.3	0.7	0	0
Delhi	100	0	0	0
Pondicherry	90.3	8	1.7	0
India	**93.8**	**1.7**	**0.5**	**0.4**

Source: indiastats.com.

TABLE 4.17(b) Undernutrition among Children (aged 1–5years) and Chronic Energy Deficiency (CED) among Adults in Rural Areas of Selected States

State	Period	Under Nutrition (%)	CED	
			Males	Females
Kerala	1975–1979	56.8		
	1991–1992	35.6		
	2000–2001	28.8	22.4	18.7
Tamil Nadu	1975–1979	59.6		
	1991–1992	47.0		
	2000–2001	39.0	26.7	38.2
Karnataka	1975–1979	64.3		
	1991–1992	62.8		
	2000–2001	47.7	36.2	41.7
Andhra Pradesh	1975–1979	61.5		
	1991–1992	50.8		
	2000–2001	39.9	37.4	42.0
Maharashtra	1975–1979	71.4		
	1991–1992	62.2		
	2000–2001	55.2	41.3	45.1
Gujarat	1975–1979	68.1		
	1991–1992	62.3		
	2000–2001	48.9	37.1	33.3
Madhya Pradesh	1975–1979	61.3		
	1991–1992	–		
	2000–2001	63.9	42.8	41.9
Orrisa	1975–1979	56.6		
	1991–1992	58.8		
	2000–2001	54.4	38.6	46.0
West Bengal	1975–1979	60.6		
	1991–1992	–		
	2000–2001	49.6	40.5	45.9
All States*	1975–1979	62.5		
	1991–1992	56.2		
	2000–2001	50.5	37.4	39.4

* Pooled estimates of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat and Orissa for 1975–79; Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra, Gujarat and Orissa for 1991–92 and all the nine for 2000–01.

Notes: Undernutrition (severe plus moderate) estimates are based on Gomez. Classification and CED is the percentage of adults whose body mass index (BMI) is less than 18.5

Source: Radhakrishna and Rao (2006). Estimates computed from the National Nutrition Monitoring Bureau, National Institute of Nutrition, Hyderabad.

1992 and 2000–2001.[51] The data in Table 4.17(b) is culled from National Nutrition Monitoring Bureau (NNMB) reports. As per the NMMB data, while the incidence of undernutrition among children has been declining over the years, in absolute levels the extent of undernutrition is still substantially high. Considering the average for the states reported in the table, about half of the children were undernourished in 2000–2001 and about one-third of the adults (males and females) had chronic energy deficiency. The highest incidence of undernourishment was among the poorest states identified earlier, with more than 60 percent children undernourished in Madhya Pradesh and 55 percent in Orissa. More seriously, these percentages have almost remained constant over the 30–year period.

With respect to CED among females, with the exception of Kerala and Gujarat, figures were higher than that of males. This is consistent with the contention that there could be gender bias in terms of intra-household consumption of food. Inter-state variations in CED mirror such variations with respect to undernutrition.

Poverty Projections and Millennium Development Goals (MDGs)

The Planning Commission of India had projected poverty rates in the Ninth Five Year Plan (1997–2002) and the Tenth Five Year Plan (2002–2007) both at the state level and at the all-India level. According to the Millennium Development Goals India Country Report 2005, the Tenth Five Year Plan had taken note of the MDGs and set targets for the plan period that were generally higher than what had to be accomplished under MDGs. With regard to poverty, the target set was to reduce poverty ratios by 5 percentage points by 2007 and by 15 percentage points by 2012.

The state-wise poverty projections made in the 10th Plan for 2006–2007 are given in Table 4.18(a). Along with it are projections (where estimates are available) for the year 2011–2012 as made in the IXth Five Year Plan. As can be seen from the table, if we consider the actual poverty estimates for some states as of 2004–2005 along with their respective growth rates during 1993–2005 [Table 4.9(a)], it is likely that a large number of states will fall short of their projected rates in 2006–2007 as well as in 2011–2012. On the other hand, some states have achieved poverty ratios by 2004–2005 which have already shown an improvement over the projected estimates for 2006–2007 (notably all the North-eastern states by a wide margin, as well as Bihar). Similar observations hold with respect to the projected estimates of the number of poor in 2006–2007.

Table 4.18(b) presents the Planning Commission projections of national poverty estimates under different scenarios of reduction in inequality in rural and urban areas of India. Scenario I is based on a reduction of Lorenz

TABLE 4.18(a) Actuals (2004–05) and Projection of State-wise Poverty Ratios, Select States, 2006–07 and 2011–12

	Poverty Ratio (percent)			Number of Poor (millions)	
	Actuals 2004–05	Projected 2006–07	Projected 2011–12	Actuals 2004–05	Projected 2006–07
Andhra Pradesh	15.8	8.49	2.44	12.61	6.872
Assam	19.7	33.33	2.07	5.58	9.714
Bihar	41.4	43.18	6.52	36.91	53.691
Gujarat	16.8	2	1.28	9.07	1.125
Haryana	14	2	2.58	3.21	0.481
Himachal Pradesh	10	2	3.14	0.64	0.132
Karnataka	25	7.85	3.45	13.89	4.5
Kerala	15	3.61	1.38	4.96	1.204
Madhya Pradesh	38.3	29.52	6.81	24.97	26.654
Maharashtra	30.7	16.18	5.43	31.74	17.43
Nagaland	19	31.86	N.A.	0.4	0.822
Orissa	46.4	41.04	4.63	17.85	16.269
Punjab	8.4	2	0.15	2.16	0.535
Rajasthan	22.1	12.11	1.52	13.49	7.786
Sikkim	20.1	33.78	N.A.	0.11	0.212
Tamil Nadu	22.5	6.61	3.59	14.56	4.407
Uttar Pradesh	32.8	24.67	6.92	59	48.441
West Bengal	24.7	18.3	2.86	20.84	15.973
A & N Islands	22.6	5.82	N.A.	0.09	0.024
Chandigarh	7.1	2	N.A.	0.07	0.021
Dadra & N. Haveli	33.2	2	N.A.	0.08	0.006
Daman and Diu	10.5	2	N.A.	0.02	0.004
Delhi	14.7	2	N.A.	2.29	0.338
All India	**20.7**	**14.8**	**3.4**	**300.52**	**218.33**

Source: Planning Commission Estimates.

Ratio by 5 percent in rural areas and urban areas. Scenario 2 is based on a reduction of the per capita urban-rural consumption differential by 5 percent. Scenario III is based on the impact of both Scenarios I and II. Scenario IV is based on a reduction of Lorenz ratio by 10 percent in rural and urban areas. Scenario V is based on the reduction of the per capita

TABLE 4.18(b) Projection of National Poverty Ratios (Sensitivity Analysis) in India (1996–97, 2001–02, 2006–07 & 2011–12)

(Percent)

Scenario	1996–97	2001–02	2006–07	2011–12
Scenario I	27.17	16	8.01	3.51
Scenario II	28.99	17.84	9.45	4.35
Scenario III	26.98	15.86	7.93	3.48
Scenario IV	25.08	14.02	6.6	2.79
Scenario V	28.81	17.71	9.37	4.32
Scenario VI	24.69	13.76	6.48	2.75
Base Case	29.18	17.98	9.53	4.37

Notes: 1. Scenario I is based on a reduction of Lorenz ratio by 5 percent, i.e., from 0.2816 to 0.2675 in rural areas and from 0.34 to 0.323 in urban areas.

2. Scenario II is based on a reduction of per capita urban–rural consumption differential by 5 percent, i.e., from 62.78 percent to 59.64 percent.

3. Scenario III is based on the impact of both Scenario I and Scenario II.

4. Scenario IV is based on a reduction of Lorenz ratio by 10 percent, i.e., from 0.2816 to 0.2534 in rural areas and from 0.34 to 0.306 in urban areas.

5. Scenario V is based on a reduction of per capita urban–rural consumption differential by 10 percent, i.e., from 62.78 percent to 56.50 percent.

6. Scenario VI is based on the impact of both Scenario IV and Scenario V.

Source: Planning Commission, Ninth Five Year Plan 1997–2002, Vol. 1.

urban–rural consumption differential by 10 percent. Finally, Scenario VI is based on the impact of both Scenarios IV and V. Here too, as in the case of Table 4.18(a) there is gross overestimation of what can be achieved by 2006–2007 and 2011–2012, particularly given that recent estimates have indicated an increase in inequality as measured by the Gini coefficient in both rural and urban areas [Table 4.3(b)].

While more detailed analysis at the country level needs to be done to assess whether India will achieve the various MDGs set out in Table 4.20, as mentioned before, the Millennium Country Report India (2005) of the Government of India observes that the targets set out by the government are more ambitious than those set by MDGs, and that it is 'hoped that India will meet the challenges and achieve all the MDG targets much earlier than the targeted dates.' However, the Report does not provide any hard estimates based on achieved growth rates to support its contention.

On the other hand, country-level estimates by ADB and SAARC provide a clearer perspective of the extent to which India will be able to achieve the MDG goals. As is evident from Table 4.21, according to projections made by ADB, if one uses the benchmark growth scenario—that is the current growth

TABLE 4.19 Estimates and Projections of Poverty Index and Magnitude of Poor for India : 1990, 2003 and 2015

Head Count Ratio (%)		
	$1 a day poverty line	$2 a day poverty line
Year		
1990	42.1	86.1
2003	30.7	78.0
Year – 2015: Projections		
(i) Benchmark Growth		
More Equal Distribution	6.8	50.6
Less Equal Distribution	11.3	57.4
(ii) Low Growth		
More Equal Distribution	10.3	57.8
Less Equal Distribution	15.8	63.5
Total Number of Poor ('000)		
	$1 a day poverty line	$2 a day poverty line
Year		
1990	3,51,245	7,18,907
2003	3,26,692	8,30,008
Year – 2015: Projections		
(i) Benchmark Growth		
More Equal Distribution	85,245	6,30,782
Less Equal Distribution	1,40,949	7,15,631
(ii) Low Growth		
More Equal Distribution	1,28,264	7,20,999
Less Equal Distribution	1,96,695	7,91,019

WB PovcalNet Database for 1990 poverty estimates.
WB World Development Indicators Online. ADB staff estimates for 2003 and 2015 poverty estimates.
Sources: Population Division, World Population Prospects: The 2002 Revision, medium variant projections.

trends for India—India is projected to meet the target of halving poverty rates of $1 a day poverty (relative to the start year of MDGs, 1990) both under the scenarios of more equal distribution and less equal distribution. Under the low growth scenario too, where the growth rate assumed is one percentage point lower than the benchmark growth, India is projected to achieve the MDG target of poverty reduction by 2015, the end year of the MDGs. However, if the $2 per day poverty line is used instead of the $1 per day poverty line considering that the latter pertains to an 'extremely

TABLE 4.20 Progress Towards Achieving MDGs in India

	Indicator	Year	Value	Year	Value	MDG Target value
1.	Proportion of population below poverty line (%)	1990	37.5	1999–2000	26.1	18.75
2.	Undernourished people as % of total population	1990	62.2	1999–2000	53	31.1
3.	Proportion of undernourished children	1990	54.8	1998	47	27.4
4.	Literacy rate of 15–24 year olds	1990	64.3	2001	73.3	100
5.	Ratio of girls to boys in primary education	1990–91	0.71	2000–2001	0.78	1
6.	Ratio of girls to boys in secondary education	1990–91	0.49	2000–2001	0.63	1
7.	Under 5 mortality rate (per 1,000 live births)	1988–92	125	1998–2002	98	41
8.	Infant mortality rate (per 1,000 live births)	1990	80	2003	60	27
9.	Maternal mortality rate (per 1,00,000 live births)	1991	437	1998	407	109
10.	Population with sustainable access to an improved water source, rural (%)	1991	55.54	2005	90	80.5
11.	Population with sustainable access to an improved water source, urban(%)	1991	81.38	2001	82.22	94
12.	Population with access to sanitation urban (%)	1991	47	2001	63	72
13.	Population with access to sanitation rural (%)	1991	9.48	2005	32.36	72
14.	Deaths due to malaria per 1,00,000	1994	0.13	2004	0.09	-
15.	Deaths due to TB per 1,00,000	1999	56	2003	33	-
16.	Deaths due to HIV/AIDS	2000	471	2004	1114	-

Source: Millennium Development Goals India Country Report (2005), Ministry of Statistics and Programme Implementation, Government of India.

low standard of living,' the estimates in Table 4.21 reveal that India will be unable to halve the 1990 rates by 2015 under both the growth scenarios and the distributional assumptions underlying these.

While the ADB estimates pertain to income measures of poverty, evaluations made by the South Asian Association for Regional Cooperation Secretariat, with respect to the ability of SAARC countries to achieve the MDGs, consider both income and non-income measures of poverty. As is evident from the table as well as Figures 4.7(a)–(c), consistent with ADB

TABLE 4.21 Estimates and Projections of Poverty Index and Magnitude of Poor for India : 1990, 2003 and 2015

Head Count Ratio (%)		
	$1 a day poverty line	$2 a day poverty line
Year		
1990	42.1	86.1
2003	30.7	78.0
Year – 2015: Projections		
(i) Benchmark Growth		
More Equal Distribution	6.8	50.6
Less Equal Distribution	11.3	57.4
More Equal Distribution		
Less Equal Distribution	10.3	57.8
	15.8	63.5
Total Number of Poor ('000)		
	$1 a day poverty line	$2 a day poverty line
Year		
1990	3,51,245	7,18,907
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Year – 2015: Projections		
(i) Benchmark Growth		
More Equal Distribution	85,245	6,30,782
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(ii) Low Growth		
More Equal Distribution	1,28,264	7,20,999
Less Equal Distribution	1,96,695	7,91,019

WB PovcalNet Database for 1990 poverty estimates.
WB World Development Indicators Online. ADB staff estimates for 2003 and 2015 poverty estimates.
Sources: Population Division, World Population Prospects: The 2002 Revision, medium variant projections.

projections, India is on track with respect to reducing poverty based on the $1 per day poverty line. India is also on track in terms of achieving the MDG goal with respect to the national poverty line. However, in all other aspects of poverty and human development, such as reducing the proportion of underweight children, or the proportion of people below a minimum level of dietary energy consumption, or access to safe drinking water, India is nowhere near the targeted goal.

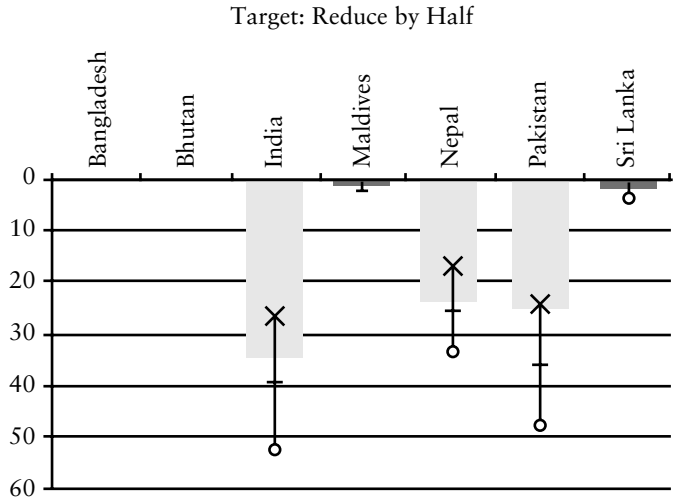

FIGURE 4.7(a) Progress Towards Reducing Poverty
(% of population below $1 per day PPP value)

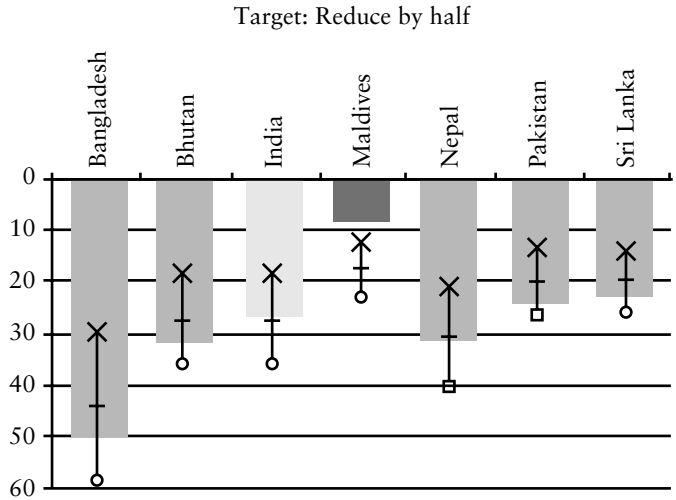

FIGURE 4.7(b) Progress Towards Reducing Poverty
(% of population below national poverty line)

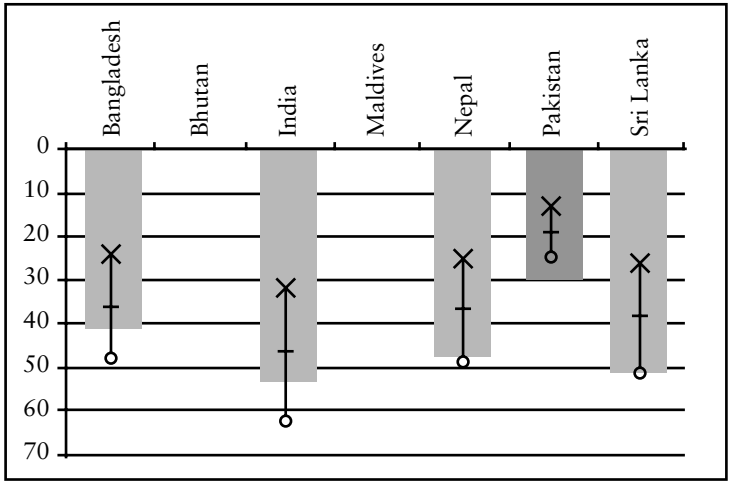

FIGURE 4.7(c) Progress Towards Reducing by Half Children Under 5 Years of Age Who are Under-weight

Legend:

1990 value	O
Mid-term target	–
2015 target	×
Mid-term actual	Target reached
	On track
	Off track
	Backward

Source for Figures 4.7(a) – 4.7(c): SAARC Regional Poverty Profile 2005.

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5 Growth, Inequality and Poverty Eradication

There is a close relationship between growth and poverty and inclusive growth is the key to effective poverty eradication. Indeed, economic growth is believed to be the most successful tool for poverty eradication in any region. Higher overall growth in the economy will generate more employment opportunities for the unemployed and will increase the income levels of those already employed. However, the poverty-reducing effects of higher growth may get neutralized if the increase in a state's income is restricted to groups which are already above poverty levels. In such a case, growth is often associated with increase in the levels of inequality. Various studies which aimed at establishing a link between economic growth and poverty reduction found an inverse relationship between the two. Datt and Ravallion's study,[1] based on data from rural India for the period 1958–1994, found that higher wages and higher farm yield reduced absolute poverty, and with about the same elasticity.[1] While higher wage rate implies higher income, higher farm yield represents improved efficiency and better technology. They also showed that the bulk of the gains to the poor were through rising average living standards rather than improved distribution. Further, the gains were not confined to those near the poverty line, but reached deeper.

However, the relationship between poverty, growth and inequality has become a highly debatable issue in view of the economic reforms that have been initiated since the 1990s. A large number of studies have analyzed whether economic growth spurred by the reforms have led to a decrease in the incidence of poverty. A related issue that has also been debated is whether growth has led to higher inequality rather than a higher rate of poverty reduction. While inclusive growth with social justice has been one of the stated objectives during successive Five Year Plans, empirical evidence regarding the effect of growth on poverty and inequality has been far from conclusive. Concerns have been raised in this respect in the Approach Paper of the Eleventh Five Year Plan (GOI 2006), which seeks to achieve a 'new vision of growth' that would be 'much more broad-based and inclusive,'

so as to bring about a faster reduction in poverty and help 'bridge the divides that are currently the focus of so much attention'. To achieve these objectives, the Approach Paper stresses on the need to generate rapid growth and adopt policies that are broad-based and particularly geared to helping marginalized groups such as tribal communities, children and adolescent girls.

Growth, Inequality and Poverty: Select Evidence from the 1990s

The relationship between growth, inequality and poverty in India during the first decade of the reforms has been analysed based on the 50th and 55th NSS rounds. However, as Sen and Himanshu[2] note, methodological changes made in the survey questionnaire in the 55th round made the data non-comparable with the earlier rounds. While several studies have subscribed to the view that growth in the 1990s has not been inclusive, others argue that the magnitude of poverty reduction has been substantial and close to the unadjusted official estimates.

Indeed, unadjusted comparisons of the 55th round with the 50th showed very large poverty reduction, by 10 percentage points of population, or around 60 million persons. After making adjustments to the data from the 55th round to make it comparable with earlier rounds, Deaton and Dreze[3] conclude that there is consistent evidence of continuing poverty decline in the 1990s in terms of the head count ratio and that adjusted estimates suggest that a large part of the poverty decline pointed out by official figures was 'real' rather than driven by methodological changes. Such findings also find support in a study by Sundaram and Tendulkar[4] who used a different methodology to compute poverty estimates. Both studies concluded that the total number of poor declined by at least 30 million.

On the other hand, based on their adjustments of the data from the 55th round, Sen and Himanshu[5] point to only a marginal decline in the incidence of poverty in the 1990s, at most of 3 percentage points with no significant decline in the absolute number of poor, leading the authors to conclude that the 1990s were a 'relatively lost decade of poverty reduction'. This conclusion has been supported by estimates which have been computed after the completion of the 61st NSS round which is fully comparable with the 50th and earlier NSS rounds.[6] Analysis by Himanshu[7] reveals that during 1993–2005, the annual rate of poverty reduction was lower than in the 1970s and 1980s with the bulk of the decline occurring in the period, 1999–2005. The study by Dev and Ravi[8] also points out that despite higher overall growth in the 1990s, the extent of decline in poverty in the post-reform period (1993–2005) has not been higher than in the pre-reform period.

While there is an absence of consensus regarding the extent of poverty decline in the 1990s, there is far more agreement with respect to trends in inequality. All of the studies cited in the preceding paragraph find evidence of rising inequality in the 1990s. Sen and Himanshu[8] conclude that the marginal decrease in poverty that they find in their analysis was largely due to a sharp increase in inequality. This increase emerged not only from differently adjusted 55th rounds but also from adjacent NSS rounds. However, while there is little ambiguity of an inequality increase at the national level, Sen and Himanshu[9] observe that the results are not robust at the state level, except for the state of Assam. The study on poverty and inequality by Deaton and Dreze[10] highlights three aspects of rising inequality, with specific focus on the states. First, there is evidence of strong divergence in per capita consumption across states. Second, there is a significant increase in rural-urban inequalities at the all-India level and also in most states. Third, the decomposition exercise whereby poverty indices are broken down into two components—a growth component and a distribution component—reveals that rising inequality within states, particularly in the urban sector, has partially counteracted the effects of growth on poverty reduction. Finally, studies based on the 61st NSS round[11] document significant increases in inequality in the post-reforms period.

Poverty, Growth and Inequality: State-level Analysis

Figure 5.1 shows the ranking of states in terms of their per capita SDP and poverty ratio (measured in terms of HCR) that are derived from Table 5.1. States lower down the x-axis are those with higher per capita SDP. On the other hand, states lower down the y-axis are those with lower poverty ratios. A 45 degree line connects the two ends of the box. Thus, states below the 45 degree line are those that have better ranks in terms of poverty ratios compared to their SDP rankings, while states above the 45 degree line are those that have worse ranks in terms of poverty ratios compared to their SDP rankings. Chandigarh, Haryana, Kerala, Gujarat, Madhya Pradesh, Jharkhand and Bihar are some of the states whose ranks based on SDP and poverty ratio are similar. On the other hand, Maharashtra, Karnataka and Tamil Nadu are some of the states with poorer ranks in terms of poverty ratios compared to their SDP rankings. In contrast, Punjab, Himachal Pradesh, Andhra Pradesh and Assam exhibit better rankings in terms of poverty ratios compared to their SDP rankings.

Has higher growth been associated with higher rate of poverty reduction? Figures 5.2 and 5.3 (derived from Table 5.2) show the ranking of states in terms of their growth in per capita SDP and rate of poverty reduction in rural and urban areas respectively. In terms of rural poverty, Assam,

FIGURE 5.1 Ranking of Select States in terms of Per Capita SDP and Poverty Ratio: 2004–05

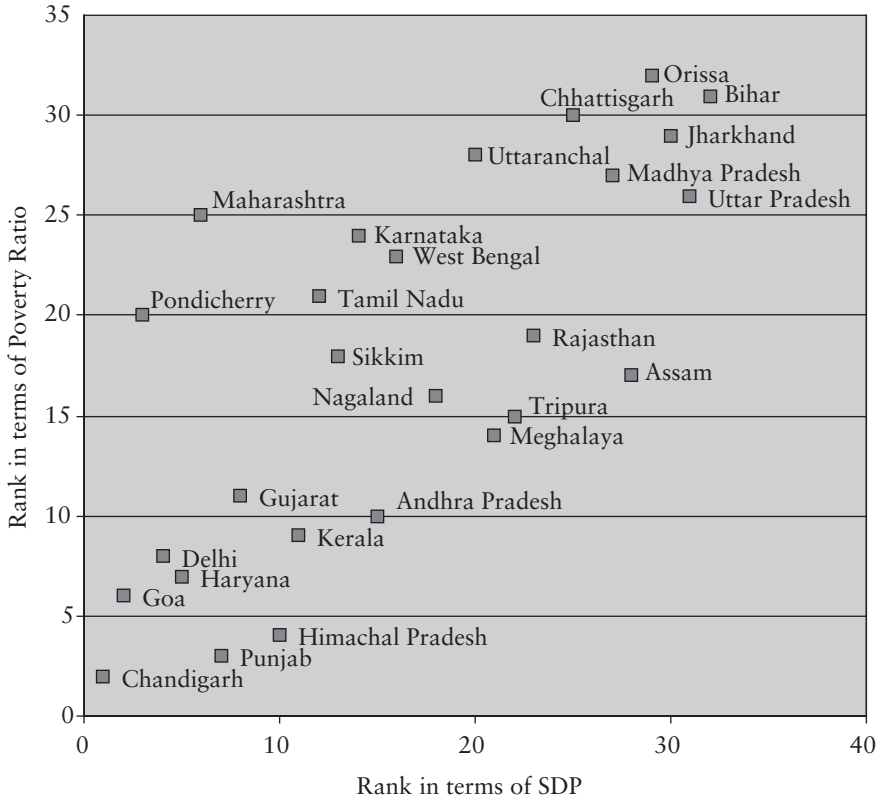


TABLE 5.1 Ranking of Select States by Per Capita SDP and Poverty Ratios, 2004–05

State	Per capita SDP (at current prices)	Rank Based on SDP	Poverty Ratio	Rank Based on Poverty Ratio
Chandigarh	67,370	1	7.10	2
Goa	58,184	2	13.80	6
Pondicherry	56,034	3	22.40	20
Delhi	53,976	4	14.70	8
Haryana	32,712	5	14.00	7
Maharashtra	32,170	6	30.70	25
Punjab	30,701	7	8.40	3
Gujarat	28,355	8	16.80	11
Himachal Pradesh	27,486	10	10.00	4
Kerala	27,048	11	15.00	9

Contd

Table 5.1 *Contd*

State	Per capita SDP (at current prices)	Rank Based on SDP	Poverty Ratio	Rank Based on Poverty Ratio
Tamil Nadu	25,965	12	22.50	21
Sikkim	24,115	13	20.10	18
Karnataka	23,945	14	25.00	24
Andhra Pradesh	23,153	15	15.80	10
West Bengal	22,497	16	24.70	23
Uttaranchal	19,652	20	39.60	28
Meghalaya	19,572	21	18.50	14
Rajasthan	16,212	23	22.10	19
Chhattisgarh	15,073	25	40.90	30
Madhya Pradesh	14,069	27	38.30	27
Assam	13,633	28	19.70	17
Orissa	13,601	29	46.40	32
Jharkhand	13,013	30	40.30	29
Uttar Pradesh	11,477	31	32.80	26
Bihar	5,772	32	41.40	31

Notes: (i) Per capita SDP in rupees and current prices.
(ii) The state with the highest per capita SDP has SDP rank 1.
(iii) The state with the lowest poverty ratio has poverty ratio rank 1.
(iv) Poverty Ratio is the Headcount Ratio.

Sources: GOI (2004–05) for poverty estimates; Economic Survey 2006 for per capita SDP

Jharkhand and Bihar stand out as states that have witnessed remarkably better performance in terms of poverty reduction compared to their SDP growth ranking. In contrast, Andhra Pradesh, Orissa, and Gujarat stand out as states with much poorer performance on the poverty reduction front compared to their SDP growth performance.

With respect to urban poverty, Tamil Nadu, Madhya Pradesh, Gujarat, Punjab, Uttar Pradesh, Assam, Chhattisgarh, and Bihar are states that have exhibited better performance in terms of poverty reduction compared to their SDP performance. In contrast, Himachal Pradesh, Kerala, Haryana, Orissa and Uttaranchal, have performed badly in terms of poverty reduction compared to SDP growth. There are two notable features that emerge from Figures 5.2 and 5.3. First, states which exhibit better performance in terms of reducing rural poverty compared to their SDP performance are not necessarily the ones that exhibit better performance in terms of reducing urban poverty.

Second, the rate of poverty reduction is more closely associated with SDP growth in rural areas rather than urban areas, as exhibited by the many more points that fall near the 45 degree line.

The relationship between growth and inequality as of 2004–2007 for a cross-section of major states is presented in Table 5.3. The table reports the relation between growth and inequality separately for urban and rural areas. Strikingly, higher growth has led to an increase in inequality, as measured in terms of the Gini coefficient in the urban areas. Except for Himachal Pradesh, all states show a positive growth in the Gini coefficient. However, growth alone cannot explain the growing inequality. Apart from the observation that Himachal Pradesh is the state with the highest growth in terms of per capita SDP, states which are lower down the ranking in terms of per capita SDP growth, i.e., states which have grown relatively slowly as compared to other states, are also the ones which have experienced relatively faster increase in inequality. Compared to urban areas, change in inequality in rural areas presents a mixed picture. Nine out of the 19 states have experienced a reduction in inequality over the 1993–2005 period as evidenced by their negative growth rates. The rest of the 10 states have experienced an increase in inequality. However, for these states, the extent

FIGURE 5.2 Ranking of Select States in terms of Growth of Per Capita SDP and Poverty Reduction: Rural (1993–2005)

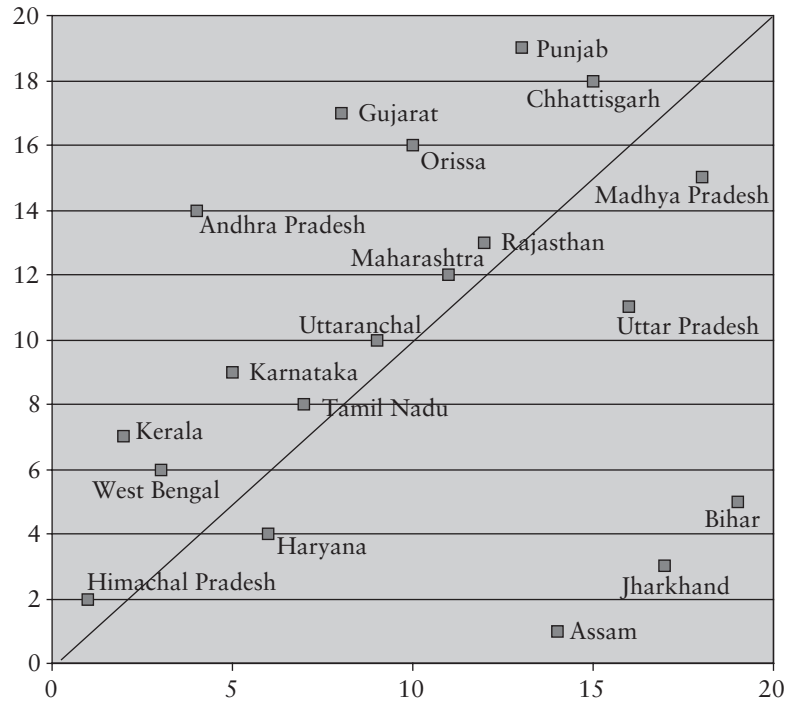


TABLE 5.2 Ranking of Select States by Per Capita SDP Growth and Rate of Poverty Reduction: 1993–94 to 2004–2005

State/Union Territory	State		Rural		Urban	
	Annual Growth Rate of Per Capita SDP 1993–2005	Rank in Terms of Per Capita SDP Growth	Annual Rate of Poverty Reduction 1993–2005	Rank in Terms of Rate of Poverty Reduction	Annual Rate of Poverty Reduction 1993–2005	Rank in Terms of Rate of Poverty Reduction
Himachal Pradesh	10.98	1	–1.77	2	–0.38	11
Kerala	10.70	2	–1.11	7	–0.34	12
West Bengal	10.54	3	–1.15	6	–0.69	4
Andhra Pradesh	9.95	4	–0.47	14	–1.07	3
Karnataka	9.75	5	–0.92	9	–0.60	6
Haryana	9.44	6	–1.33	4	–0.08	17
Tamil Nadu	9.28	7	–0.93	8	–1.43	1
Gujarat	9.26	8	–0.25	17	–1.28	2
Uttaranchal	9.12	9	–0.90	10	0.39	19
Orissa	8.89	10	–0.27	16	0.28	18
Maharashtra	8.43	11	–0.72	12	–0.20	16
Rajasthan	8.37	12	–0.68	13	–0.23	15
Punjab	7.63	13	–0.16	19	–0.54	7
Assam	7.51	14	–2.13	1	–0.39	10
Chhattisgarh	7.21	15	–0.22	18	–0.32	13
Uttar Pradesh	7.05	16	–0.84	11	–0.49	9
Jharkhand	6.82	17	–1.76	3	–0.53	8
Madhya Pradesh	6.53	18	–0.31	15	–0.61	5
Bihar	5.50	19	–1.30	5	–0.24	14

Notes: (i) Annual growth rates of SDP and rate of poverty reduction rates are in percentages.
(ii) Both rates are compound annual rates.
(iii) Poverty reduction is measured in terms of decline in Headcount Ratio.

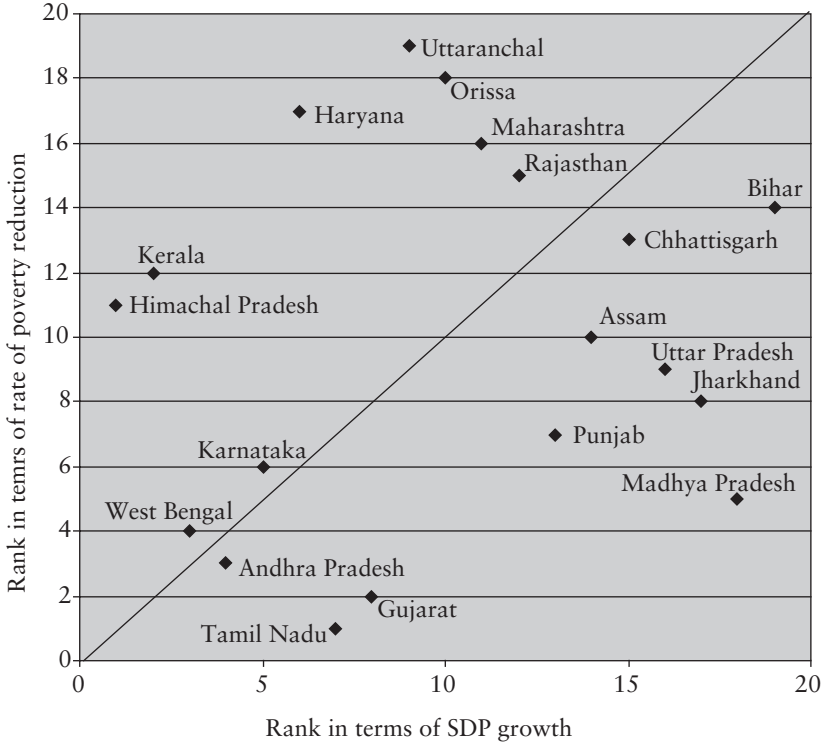
Source: Same as Table 5.1

TABLE 5.3 Ranking of Select States by Per Capita SDP Growth and Rate of Change in Inequality: 1993–2005

State\UT	Annual Growth Rate of Per Capita SDP 1993–2005	Rank in Terms of Per Capita SDP Growth	Rate of Change in Gini 1993–2005 Urban	Rank in Terms of Rate of Change in Gini Urban	Rate of Change in Gini 1993–2005 Rural	Rank in Terms of Rate of Change in Gini Rural
Himachal Pradesh	10.98	1	–0.15	1	1.45	19
Kerala	10.70	2	0.10	4	0.29	18
West Bengal	10.54	3	0.23	13	–0.12	7
Andhra Pradesh	9.95	4	0.20	10	–0.01	9
Karnataka	9.75	5	0.12	7	–0.20	6
Haryana	9.44	6	0.08	3	0.26	17
Tamil Nadu	9.28	7	0.04	2	–0.21	5
Gujarat	9.26	8	0.12	6	0.02	13
Uttaranchal	9.12	9	0.11	5	–0.03	8
Orissa	8.89	10	0.30	16	0.07	14
Maharashtra	8.43	11	0.15	9	0.10	15
Rajasthan	8.37	12	0.15	8	–0.45	1
Punjab	7.63	13	0.30	17	0.01	12
Assam	7.51	14	0.28	15	0.00	10
Chhattisgarh	7.21	15	0.55	19	0.26	16
Uttar Pradesh	7.05	16	0.25	14	0.01	11
Jharkhand	6.82	17	0.21	11	–0.21	4
Madhya Pradesh	6.53	18	0.46	18	–0.22	3
Bihar	5.50	19	0.22	12	–0.24	2
All India			**0.17**		**0.00**	

Source: Himanshu (2007); Economic Survey 2006.

FIGURE 5.3 Ranking of Select States in terms of Growth of Per Capita SDP and Poverty Reduction: Urban (1993–2005)



of increase in inequality has been lower compared to the average increase in the urban areas. Himachal Pradesh stands out. It has the highest growth rate in terms of per capita SDP, the best experience in terms of reducing inequality in urban areas and the worst experience in rural areas.

Notes

1. M. Ravallion and G. Datt. 2001. Why Has Economic Growth Been More Pro-Poor in Some States of India than Others? http://econ.worldbank.org/programs/poverty/topic/2543/library/doc?id=2715.
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7. Himanshu, 2007.
8. Dev and Ravi, 2007.
8. Sen and Himanshu, 2005.
9. Ibid.
10. Deaton and Dreze, 2002.
11. Himanshu, 2007. Dev and Ravi, 2007.

6 Labor Market and Poverty

Another important phenomenon which evidently shares a close link with poverty is labor market conditions. It is expected that changes in labor market conditions, be they related to wage rates, labor productivity or the demand–supply gap, are expected to have an impact on poverty levels. However, it is difficult to establish a clear cause-and-effect relationship between the two.

Two broad linkages do exist. High prevalence of unemployment in the labor market can be associated with high prevalence of poverty in the economy. The possibility increases in the absence of an adequate unemployment benefit or any other such social security program. For the section of workforce which is marginally above the poverty line, the likelihood of falling below the poverty line increases with involuntary or disguised unemployment. Poverty related to unemployment can be temporary or permanent, depending on the duration of unemployment. High prevalence of unemployment also affects the wage structure in the market by putting a downward pressure on equilibrium wages.

Tables 6.1 and 6.2 give the state-wise statistics of the unemployed proportion of labor force for rural and urban areas. On an average we find that the percentage of workforce unemployed in urban areas is higher for all states, as compared to that in the rural areas. One possible reason for this could be an under-reporting of unemployment in rural areas due to the presence of disguised unemployment. On comparing across states, we find that the percentage of unemployed workforce is highest in Kerala, in both rural and urban areas. Further, while the percentage of male unemployed workers has gone down in the state, that of the female workforce has witnessed an upward trend. West Bengal is the other state where the percentage of unemployed in the total labor force is higher when compared to other states.

If we look at other states of the country, we find that both Bihar and Orissa have witnessed an increasing trend in unemployment, in almost all categories. These states also have a higher incidence of poverty as compared to other states. On the other hand, Punjab has witnessed a downward trend in the percentage of workforce unemployed. Tamil Nadu experienced a fall

TABLE 6.1 State-wise Incidence of Unemployment (Urban) by Sex in India (As a percentage of Labor Force)

States	1983			1993–94			1999–2000		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
Andhra Pradesh	4.5	3.4	4.2	2.9	3.8	3.2	4.0	3.9	4.0
Bihar	4.8	1.5	4.4	6.9	10.0	7.3	7.3	8.0	7.4
Gujarat	4.4	3.0	4.1	3.0	4.6	3.3	2.0	2.2	2.0
Haryana	4.5	6.5	4.8	2.5	3.3	2.7	2.8	2.6	2.7
Karnataka	4.2	4.4	4.2	3.0	6.5	3.7	2.9	4.8	3.4
Kerala	9.4	15.1	11.2	6.6	18.5	10.2	5.5	19.9	10.0
Madhya Pradesh	3.2	1.1	2.8	5.3	3.9	5.0	4.1	1.5	3.6
Maharashtra	5.3	3.7	5.0	4.2	4.7	4.3	5.5	6.3	5.7
Orissa	4.5	5.5	4.6	6.7	6.1	6.6	7.1	5.0	6.7
Punjab	3.5	4.7	3.7	3.1	5.4	3.4	2.8	2.3	2.8
Rajasthan	3.7	0.9	3.0	1.8	0.4	1.5	2.6	1.9	2.5
Tamil Nadu	6.5	6.2	6.4	4.1	6.8	4.9	3.4	5.0	3.8
Uttar Pradesh	3.9	2.7	3.7	3.3	0.6	2.9	4.3	3.3	4.1
West Bengal	8.1	12.8	8.8	6.3	15.1	7.9	7.2	9.7	7.6
India	**5.0**	**5.2**	**5.1**	**4.1**	**6.6**	**4.6**	**4.5**	**5.9**	**4.8**

Source: Planning Commission, Government of India.

in the unemployed percentage in urban areas. In rural Tamil Nadu there was a fall in 1993–1994, but the percentage increased in 1999–2000.

Unemployment-related poverty can be addressed in two ways. The first is the availability of unemployment benefits. Such a policy is more effective in a case where the unemployment and thus the consequent poverty, are temporary. Such programs help an individual meet his or her basic requirements even in the short period when he or she is unemployed. On the other hand, the long-term solution for eliminating unemployment-related poverty is availability of adequate employment opportunities.

The second broad linkage between labor market conditions and poverty comes in the form of the low productivity of labor. In this case a section of the population though employed, is still not able to meet its minimum needs. Low productivity results in lower income and thus in less consumption. This, in turn, implies less investment by the individual in human capital, resulting in a vicious cycle of low productivity and poverty. Poverty resulting from low productivity is usually more permanent in nature and requires an external stimulus to get the person out of it. One possible way of addressing this

TABLE 6.2 State-wise Incidence of Unemployment (Rural) by Sex in India (As a percentage of Labor Force)

States	1983			1993–94			1999–2000		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
Andhra Pradesh	1.0	0.2	0.6	0.8	0.1	0.5	0.9	0.5	0.7
Bihar	1.3	0.2	0.9	2.0	0.7	1.7	2.2	0.3	1.8
Gujarat	0.6	0.2	0.4	1.2	0.3	0.9	0.6	0.0	0.3
Haryana	2.9	0.3	2.2	1.6	0.5	1.2	1.0	0.0	0.8
Karnataka	0.8	0.5	0.7	0.9	0.3	0.7	0.9	0.4	0.7
Kerala	7.0	7.3	7.1	5.4	9.8	6.8	5.7	13.2	8.1
Madhya Pradesh	0.3	0.1	0.2	0.7	0.2	0.5	0.7	0.2	0.5
Maharashtra	1.0	0.1	0.6	1.2	0.3	0.8	1.9	0.8	1.4
Orissa	1.5	0.4	1.2	1.8	0.9	1.5	2.4	1.1	2.0
Punjab	2.1	1.5	2.0	1.3	1.2	1.3	2.2	1.0	1.8
Rajasthan	0.4	0.1	0.3	0.5	0.1	0.3	0.6	0.2	0.4
Tamil Nadu	2.3	1.1	1.8	1.8	0.6	1.3	2.7	1.0	2.0
Uttar Pradesh	0.8	0.1	0.6	0.9	0.0	0.7	0.9	0.3	0.8
West Bengal	2.1	1.6	2.0	1.8	2.1	1.8	2.7	2.9	2.7
India	**1.4**	**0.7**	**1.1**	**1.5**	**0.8**	**1.2**	**1.7**	**1.1**	**1.5**

Source: Planning Commission, Government of India.

problem is skill development of the workforce. Better skill levels improve the employability of an individual, his or her productivity and hence, income.

Table 6.3 gives the labor productivity across different industry divisions. On comparing across industry divisions we find that productivity has been lowest in 'Agriculture', followed by 'Manufacturing'. Now if we look at Tables 6.4 and 6.5 we find that wage levels in agriculture have also been among the lowest. This is particularly true for the illiterate workforce. We take education as a proxy for the skill level and quality of human resource. Then the illiterate workforce in agriculture is the section of population which demonstrates low productivity has low skill levels and earns low income. We have already seen that the incidence of poverty is higher among agricultural laborers (in rural areas) than in other occupation categories. On the other extreme is the sector 'Electricity, Gas and Water'. This sector witnesses the highest productivity throughout the period under consideration. If we look at the wage levels in this sector, we find that wages have also been higher here than in most other sectors. Thus the available data corroborates our claim that there is a link between labor productivity and incidence of poverty.

TABLE 6.3 Sector-wise Labor Productivity at Constant Prices of 1993–94

(LP: INR in '0000)

Year	Total	Agriculture	Mining & Quarrying	Manufacturing	Elect., Gas & Water	Construction	Trade	Transport and Storage	Services
1980–81	1.3	0.8	4.7	1.6	4.7	4.2	2.7	2.9	2.6
1981–82	1.3	0.8	4.9	1.6	4.9	4.1	2.8	2.9	2.7
1982–83	1.3	0.8	4.9	1.7	4.8	3.6	2.9	2.9	2.8
1983–84	1.4	0.8	4.6	1.8	4.8	3.4	3.0	2.8	2.9
1984–85	1.4	0.8	4.3	1.9	5.1	3.1	3.0	2.9	3.0
1985–86	1.5	0.8	4.3	1.9	5.1	2.9	3.1	3.0	3.2
1986–87	1.5	0.8	4.6	2.0	5.3	2.6	3.1	3.1	3.4
1987–88	1.5	0.8	4.5	2.1	5.2	2.5	3.1	3.3	3.6
1988–89	1.7	0.9	5.1	2.3	5.6	2.5	3.2	3.3	3.7
1989–90	1.7	0.9	5.3	2.5	6.2	2.7	3.3	3.4	4.0
1990–91	1.8	1.0	5.7	2.6	6.5	3.0	3.3	3.4	4.0
1991–92	1.8	0.9	5.8	2.4	7.0	3.1	3.2	3.5	4.1
1992–93	1.8	0.9	5.7	2.4	7.2	3.2	3.3	3.5	4.1
1993–94	1.9	1.0	5.5	2.6	6.4	3.2	3.4	3.6	4.3
1994–95	2.0	1.0	6.0	2.9	7.1	3.3	3.6	3.8	4.4
1995–96	2.1	1.0	6.5	3.2	7.9	3.3	3.9	4.0	4.8
1996–97	2.2	1.1	6.7	3.4	8.5	3.1	4.0	4.1	5.1
1997–98	2.3	1.1	7.9	3.4	9.5	3.2	4.0	4.3	5.8
1998–99	2.4	1.1	8.3	3.3	10.4	3.2	4.1	4.4	6.4
1999–00	2.6	1.1	8.8	3.5	11.1	3.3	4.1	4.6	7.2

Source: www.imarindia.gov.in/

TABLE 6.4 Average Wage/Salary Received by Regular Wage/Salary Employee per Day (Rural), 1999–2000

(INR)

Industry Division	Not Literate		Literate up to Middle		Secondary & Higher Secondary		Graduate & Above		All	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture (0)	44.70	39.21	63.63	45.80	121.96	120.54	292.32	190.70	70.12	49.29
Mining & Quarrying (1)	151.56	52.58	126.20	36.28	154.15	45.45	241.68	266.30	147.21	46.28
Manufacturing (2)	75.27	30.31	75.82	36.13	100.87	42.43	167.12	–	87.86	34.44
Manufacturing (3)	92.57	45.39	75.22	44.26	114.87	121.32	195.52	146.97	99.68	49.96
Electricity, Gas and Water (4)	141.07	132.76	175.28	49.55	231.67	238.72	237.27	–	197.10	2119.84
Construction (5)	88.64	58.84	94.92	101.76	128.69	218.85	183.75	–	104.49	110.26
Trade (6)	63.56	110.40	55.42	34.28	63.61	35.00	130.16	58.26	65.13	59.93
Transport & Storage (7)	97.69	112.63	97.98	56.05	124.50	85.37	194.70	119.22	112.68	91.94
Services (8)	82.55	98.19	132.21	47.52	146.69	95.58	205.76	107.50	160.99	92.79
Services (9)	112.28	43.65	119.12	323.83	181.84	134.92	230.33	164.59	178.37	172.55
Private households with employed persons	44.50	28.18	69.98	44.04	121.00	37.00		–	72.93	32.92
Others (10)	–	320.00	–	–	–	–	–	–	–	320.00
All	**71.23**	**40.32**	**91.63**	**161.48**	**148.23**	**126.09**	**220.93**	**159.92**	**127.32**	**114.01**

Source: NSS Report No 458, *Employment and Unemployment Situation in India*, 1999–2000.

TABLE 6.5 Average Wage / Salary Received by Regular Wage / Salaried Employee per Day (Urban), 1999–2000

(INR)

Industry Division	Not Literate		Literate up to Middle		Secondary & Higher Secondary		Graduate & Above		All	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture (0)	56.58	61.34	99.84	64.84	157.84	83.44	495.56	112.59	154.08	64.54
Mining & Quarrying (1)	179.86	132.10	331.45	136.95	213.42	57.12	300.52	257.23	264.60	153.81
Manufacturing (2)	75.10	35.80	87.14	44.17	111.37	61.41	206.37	236.91	103.00	54.89
Manufacturing (3)	78.98	72.69	100.10	67.56	183.62	122.92	263.46	213.38	168.47	124.99
Electricity, Gas and Water (4)	163.21	140.20	188.19	131.67	237.67	213.47	329.26	306.16	248.70	211.93
Construction (5)	91.35	48.07	90.66	70.98	139.26	100.96	263.68	325.73	133.31	139.94
Trade (6)	64.03	50.08	71.13	60.12	104.57	109.61	208.74	266.84	98.09	129.95
Transport & Storage (7)	100.51	121.46	12 1.35	93.66	177.41	184.70	249.59	253.13	160.19	191.16
Services (8)	83.14	54.33	114.81	81.17	176.24	183.89	336.14	328.64	262.41	272.72
Services (9)	120.60	76.51	136.36	92.11	199.07	158.08	289.72	216.11	218.98	169.02
Private households with employed persons	60.23	33.85	69.68	37.27	110.43	31.51	123.36	14.29	72.99	35.03
Others (10)			120.12		90.00	-	1341.68	295.00	1001.51	140.26
All	**87.63**	**51.83**	**105.08**	**64.41**	**168.16**	**145.73**	**281.55**	**234.74**	**169.71**	**295.00**

Source: NSS Report No 458, *Employment and Unemployment Situation in India*, 1999–2000.

Labor market imperfections also affect poverty levels by their impact on unemployment, productivity and wages. One such imperfection is the presence of an informal market. The informal sector is typically characterized by a smaller size of units, lower wages and other imperfections. Yet the informal sector is important as it creates job opportunities for those who cannot get employment in the formal sector. Though the wage is lower in the informal sector than an organized sector wage, it does offer them employment. The informal sector is also helpful for the section of the workforce with low skill levels since they cannot find jobs in the formal sector. However, entry into the informal sector is usually not easy due to barriers like large capital requirements, corruption, need of reference from a known person, political recommendation, etc.[1] Another drawback of a large informal sector is that it puts a downward pressure on wages in the organized sector due to increased competition.

Another source of imperfection in the labor market is the pro-labor laws and regulations introduced by the government. These laws are introduced to protect the rights and interest of workers. Yet they are instrumental in introducing rigidities in the labor market. First of all, as a result of such laws, owners of small unregistered units do not want to grow into larger registered units. They fear that on doing so they will come under the purview of labor laws, which in turn will have a negative impact on their profits. Firm owners fear that if such a thing were to happen, workers, equipped with a better bargaining power as a result of these laws, will demand a larger share in the firm's profits. These laws also reduce the flexibility of the employer to increase or decrease employment depending on the firm's requirements. If the law of an area requires that the firm owner cannot lay off workers depending on the market conditions, the additional workers become an extra cost for the firm. A study by Burgess and Besley[2] using data for Indian states shows that wages do not improve after the introduction of pro-labor laws. As a matter of fact, they find that regulating in a pro-worker direction was associated with increases in urban poverty. These findings are particularly striking as they suggest that attempts to redress the balance of power between capital and labor can end up hurting the poor.

Yet another market imperfection that results in unemployment and lower income is a selectivity bias against certain groups within the labor force. Some sections of the population have lower probability of getting a job. For example, the probability of getting a job in the organized sector will be lower for an illiterate or unskilled worker as compared to a literate or skilled worker. Similarly, certain workers will find it easier to get certain kinds of jobs in the unorganized sector due to the dominance of people from their caste or region in those professions.

Wage rigidities also prevent income from rising and hence the poor remain below the poverty line. Wage rigidities arise mainly out of two counts. First is the unwillingness on the part of the entrepreneur to raise wages. Since wages are rigid downward and employment is not flexible, increased wages imply an extra burden for the firm during periods of economic slump. In order to hedge against that risk, owners of small units prefer paying low wages. The other cause of wage rigidity is the unwillingness of the entrepreneur to share profits.

We have already seen that economic growth contributes to poverty reduction. We have also established that there is a definite trend which indicates that states witnessing high economic growth also show greater improvement in poverty reduction. However, there is another dimension to this relationship. India is a labor-abundant economy, and hence, wage rates are expected to be low. Thus, for the benefits of economic growth to reach the poorer sections of the society, it is important that economic growth be labor-inclusive. Unfortunately, this cannot be said of economic growth in India. This will become evident by looking at the sector-wise growth and employment status.

The agriculture sector in India accounts for more than 60 percent of the labor force employed. This share is higher in rural areas, with more than 70 percent of rural workforce employed in agriculture. Yet we know that the growth rates in agriculture have typically been low (average growth of 2.7 percent per year between 1994–1995 and 2003–2004). Further, the share of agriculture in GDP has also been declining, with the importance of other sectors increasing. The share of agriculture in the GDP (at 1993–1994 prices) has declined from 31 percent in 1993–1994 to 21.7 percent in 2003–2004. However, the share of agriculture in the total employment of the country has decreased slightly from 63.9 percent in 1993–1994 to 60.8 percent in 2001–2002. This indicates that there is no major shift of workforce away from agriculture, which continues to be the source of employment for a large section of the workforce. Further, employment in the sector increased only by 3 percent between 1993–1994 and 1999–2000, and by 6 percent between 1999–2000 and 2001–2002. Combining the trends above, it is evident that 'Agriculture' in India has low productivity levels, low income, low growth rates and yet employs large sections of the workforce. All these together help in explaining the high poverty ratios among the section of population associated with agriculture. Since a majority of the rural population (around 70 percent) is dependent on agriculture, the incidence of poverty is higher in rural areas.

In urban areas, there are three important sectors, 'Manufacturing', 'Wholesale and Retail Trade and Hotels and Restaurants' and 'Services'. Together these sectors account for more than 60 percent of the urban

workforce. 'Manufacturing' and 'Wholesale and Retail Trade and Hotels & Restaurants' on an average account for approximately 17.11 and 14.32 percent share of GDP; while the 'Service' sector accounts for around 24.73 percent. Thus the total share of these sectors in GDP is 56.16 percent. Further, 'Manufacturing' witnessed an average growth of 6.86 percent between 1993–1994 and 2003–2004. Average growth rates in 'Wholesale and Retail Trade and Hotels and Restaurants' and 'Services' during this period were 8.06 and 7.33 percent respectively. The average growth rates for these sectors have been higher than those for 'Agriculture'. However, their shares in total employment have not witnessed a similar increase. The share of the 'Service' sector in total employment has in fact declined. However in absolute terms, the employment in these sectors has witnessed high growth. Employment in 'Manufacturing' grew by 7 percent between 1993–1994 and 1999–2000. The growth rate increased to 21 percent between 1999–2000 and 2001–2002. Similarly the 'Wholesale & Retail Trade and Hotels & Restaurants' sector witnessed a growth of 38 percent in its employment levels between 1993–1994 and 1999–2000. The growth rate between 1999–2000 and 2001–2002 was 16 percent. Thus, we may conclude that the growth in these sectors was labor-absorbing. The 'Service' sector has witnessed a strange trend over the years. There was a phenomenal growth of 30 percent in employment in the sector from 1987–1988 to 1993–1994. After that the sector witnessed a negative growth rate. This is probably because of high attrition rate in the sector.

Among all sectors, the highest growth in output is witnessed by 'Transport, Storage and Communication', with an average growth rate of 10.84 percent between 1993–1994 and 2003–2004. Within this group, the growth is driven by 'Communication' sector, which witnessed an average growth of 21.04 percent during this period. However the share of the entire sector in the total employment of the country shows a slight increase from 2.9 in 1993–1994 to 3.5 percent in 1999–2000. The share remains stagnant till 2001–2002. However the employment in the sector grew by 24 percent between 1987–1988 and 1993–1994, and by 29 percent between 1993–1994 and 1999–2000. This again indicates a labor-absorbing growth. The growth rate decreased drastically to 8 percent between 1999–2000 and 2001–2002. Another sector witnessing high growth is 'Hotels and Restaurants'. During the period average growth in this sector was 9.93 percent. The share of the sector in total employment has also witnessed an increase from 9.8 percent in 1999–2000 to 10.5 percent in 2001–2002.

Overall it may be concluded that it is mainly 'Agriculture' where the growth of both output and employment within the sector are low. However, the share of the sector in total employment is still the highest. The other sectors like 'Manufacturing', 'Wholesale and Retail Trade and Hotels and

TABLE 6.6 Gross Domestic Product by Economic Activity in India (Percentage Distribution at 1993–94 prices)

Industry	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	Average
1. Agriculture, Forestry & Fishing	**31.0**	**30.4**	**28.1**	**28.6**	**26.7**	**26.4**	**25.0**	**23.9**	**24.0**	**21.5**	**21.7**	**26.1**
1.1 Agriculture	28.4	27.9	25.7	26.3	24.5	24.3	22.9	21.9	22.0	19.5	19.8	23.9
1.2 Forestry & Logging	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	0.9	1.2
1.3 Fishing	1.1	1.1	1.1	1.1	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0
2. Mining & Quarrying	**2.6**	**2.6**	**2.6**	**2.4**	**2.5**	**2.4**	**2.4**	**2.3**	**2.3**	**2.4**	**2.3**	**2.4**
3. Manufacturing	**16.1**	**16.6**	**17.8**	**17.9**	**17.7**	**17.0**	**16.7**	**17.2**	**16.9**	**17.3**	**17.0**	**17.1**
3.1 Registered	10.5	11.1	11.9	12.0	11.8	11.1	10.8	11.2	11.1	11.4	11.3	11.3
3.2 Unregistered	5.6	5.5	5.9	5.9	5.9	6.0	5.9	6.0	5.8	5.9	5.8	5.8
4. Elect., Gas & Water Supply	**2.4**	**2.5**	**2.5**	**2.4**	**2.5**	**2.5**	**2.5**	**2.5**	**2.4**	**2.4**	**2.3**	**2.5**
5. Construction	**5.2**	**5.1**	**5.1**	**4.9**	**5.1**	**5.0**	**5.1**	**5.2**	**5.1**	**5.3**	**5.2**	**5.1**
6. Trade, Hotels & Restaurant	**12.7**	**13.1**	**14.0**	**13.9**	**13.8**	**14.5**	**14.6**	**14.6**	**15.0**	**15.6**	**15.7**	**14.3**
6.1 Trade	11.9	12.3	13.1	13.0	12.9	13.5	13.6	13.6	13.9	14.5	14.5	13.4
6.2 Hotels & Restaurants	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.0
7. Transport, Storage & Communication	**6.5**	**6.7**	**6.9**	**7.0**	**7.3**	**7.3**	**7.6**	**8.2**	**8.5**	**9.2**	**9.9**	**7.7**
7.1 Railways	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Contd

Table 6.6 *Contd*

Industry	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	Average
7.2 Transport by Other Means	4.0	4.1	4.2	4.2	4.3	4.2	4.2	4.3	4.2	4.3	4.4	4.2
7.3 Storage	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
7.4 Communication	1.2	1.3	1.5	1.6	1.8	1.9	2.2	2.7	3.1	3.7	4.3	2.3
8. Financing, Insurance, Real Estate & Business Services	**11.5**	**11.4**	**11.5**	**11.4**	**12.2**	**12.2**	**12.7**	**12.6**	**12.4**	**13.0**	**12.8**	**12.2**
8.1 Banking & Insurance	5.3	5.4	5.6	5.7	6.4	6.5	7.0	6.6	6.4	6.9	6.8	6.2
8.2 Real Estate, Ownership of Dwellings & Business Services	6.2	6.0	5.9	5.7	5.8	5.7	5.7	6.0	6.0	6.1	6.0	5.9
9. Community, Social & Personal Services	**12.0**	**11.6**	**11.6**	**11.5**	**12.3**	**12.6**	**13.4**	**13.5**	**13.4**	**13.4**	**13.0**	**12.6**
9.1 Public Administration & Defence	5.6	5.3	5.3	5.1	5.6	5.7	6.1	6.0	5.8	5.7	5.6	5.6
9.2 Other Services	6.4	6.3	6.4	6.4	6.7	6.9	7.2	7.5	7.5	7.7	7.5	7.0
10. Gross Domestic Product at Factor Cost (1 to 9)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: NAS.

TABLE 6.7 Gross Domestic Product by Economic Activity in India (Percentage Growth at 1993–94 prices)

Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	Average
1. Agriculture, Forestry & Fishing	**5.0**	**–0.9**	**9.6**	**–1.9**	**6.2**	**0.3**	**–0.1**	**6.3**	**–7.0**	**9.6**	**2.7**
1.1 Agriculture	5.1	–1.1	10.1	–2.2	6.9	–0.1	–0.4	6.5	–8.0	10.3	2.7
1.2 Forestry & Logging	2.7	–0.6	1.4	1.8	1.5	3.7	2.4	1.5	0.9	1.4	1.7
1.3 Fishing	6.3	5.4	7.8	0.6	–3.9	7.0	4.0	7.7	7.3	4.1	4.6
2. Mining & Quarrying	**9.1**	**5.6**	**0.5**	**9.0**	**2.8**	**3.3**	**2.4**	**2.5**	**9.0**	**6.4**	**5.1**
3. Manufacturing	**10.7**	**14.9**	**7.9**	**4.0**	**2.7**	**4.0**	**7.4**	**3.6**	**6.5**	**6.9**	**6.9**
3.1 Registered	13.2	15.5	8.1	3.4	1.9	3.7	7.9	4.6	7.0	7.1	7.2
3.2 Unregistered	6.0	13.6	7.5	5.3	4.2	4.6	6.6	1.8	5.6	6.5	6.2
4. Elect., Gas & Water Supply	**9.3**	**6.8**	**5.4**	**7.2**	**7.0**	**5.2**	**4.3**	**3.7**	**3.1**	**3.7**	**5.6**
5. Construction	**4.8**	**7.4**	**2.4**	**10.3**	**6.2**	**8.0**	**6.7**	**4.0**	**7.3**	**7.0**	**6.4**
6. Trade, Hotels & Restaurant	**10.0**	**14.5**	**6.9**	**4.5**	**7.6**	**7.2**	**4.0**	**8.9**	**8.2**	**8.8**	**8.1**
6.1 Trade	10.1	14.0	7.0	4.3	7.2	6.9	3.8	8.6	8.5	8.6	7.9
6.2 Hotels & Restaurants	8.1	21.4	4.7	7.1	13.0	11.2	6.8	12.1	4.0	10.9	9.9
7. Transport, Storage & Communication	**9.6**	**11.0**	**9.3**	**8.3**	**8.1**	**11.1**	**12.2**	**9.2**	**12.6**	**17.0**	**10.8**
7.1 Railways	2.1	8.2	4.8	1.8	1.8	9.0	4.3	7.0	5.7	6.4	5.1

Contd

Table 6.7 *Contd*

Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	Average
7.2 Transport by Other Means	10.0	9.3	8.0	6.4	5.0	6.6	6.7	3.9	6.1	11.2	7.3
7.3 Storage	2.1	7.0	–3.3	0.9	4.7	5.1	3.1	–0.6	–10.7	7.9	1.6
7.4 Communication	16.2	19.0	17.3	18.6	19.9	22.0	26.8	18.8	24.6	27.2	21.0
8. Financing, Insurance, Real Estate & Business Services	**6.1**	**7.6**	**7.1**	**11.8**	**7.4**	**10.6**	**3.5**	**4.5**	**8.7**	**7.1**	**7.4**
8.1 Banking & Insurance	8.5	10.9	9.8	17.9	8.8	13.4	–1.2	3.5	11.4	7.5	9.1
8.2 Real Estate, Ownership of Dwellings & Business Services	4.0	4.6	4.6	5.7	5.8	7.4	9.2	5.7	5.8	6.8	6.0
9. Community, Social & Personal Services	**3.3**	**7.9**	**6.2**	**12.2**	**10.4**	**12.2**	**5.2**	**5.1**	**3.9**	**5.8**	**7.2**
9.1 Public Administration & Defence	1.3	6.8	4.1	14.5	10.6	13.2	2.3	2.6	1.7	5.7	6.3
9.2 Other Services	5.2	8.8	7.9	10.3	10.2	11.4	7.7	7.0	5.6	6.0	8.0
10. Gross Domestic Product at Factor Cost (1 to 9)	**7.0**	**7.3**	**7.5**	**5.0**	**6.5**	**6.1**	**4.4**	**5.8**	**4.0**	**8.5**	**6.2**

Source: NAS.

TABLE 6.8 Percentage Distribution of Total Employment by Industry Division

Industry	1987–88	1993–94	1999–2000	2001–02
Agriculture, Forestry, Fishing and Hunting	64.1	63.9	61.7	60.8
Mining and Quarrying	0.7	0.7	0.6	0.5
Manufacturing	11.3	10.6	10.6	11.9
Electricity, Gas & Water	0.4	0.4	0.3	0.2
Construction	3.8	3.2	4.3	4.5
Wholesale and Retail, Trade, and Restaurants and Hotels	7.3	7.6	9.8	10.5
Transport, Storage and Communication	2.7	2.9	3.5	3.5
Services	9.5	10.7	9.2	8.1
Activities not classified	0.2			
Total Employment (Million)	322.0	372.1	396.8	428.2

Source: NSSO.

TABLE 6.9 Total Employment by Industry Division (In Million)

Industry	1987–88	1993–94	1999–2000	2001–02
Agriculture, Forestry, Fishing and Hunting	206.40	237.77	244.83	260.35
Mining and Quarrying	2.25	2.60	2.38	2.14
Manufacturing	36.39	39.44	42.06	50.96
Electricity, Gas and Water	1.29	1.49	1.19	0.86
Construction	12.24	11.91	17.06	19.27
Wholesale and Retail, Trade, and Restaurants and Hotels	23.51	28.28	38.89	44.96
Transport, Storage and Communication	8.69	10.79	13.89	14.99
Services	30.59	39.81	36.51	34.68
Activities not classified	0.64	0.00	0.00	0.00
Total Employment (Million)	322.0	372.1	396.8	428.2

Source: NSSO.

TABLE 6.10 Growth in Total Employment by Industry Division

(In percentages)

Industry	1993–94	1999–2000	2001–02
Agriculture, Forestry, Fishing and Hunting	0.15	0.03	0.06
Mining and Quarrying	0.16	–0.09	–0.10
Manufacturing	0.08	0.07	0.21
Electricity, Gas and Water	0.16	–0.20	–0.28
Construction	–0.03	0.43	0.13
Wholesale and Retail, Trade, and Restaurants and Hotels	0.20	0.38	0.16
Transport, Storage & Communication	0.24	0.29	0.08
Services	0.30	–0.08	–0.05
Activities not classified			
Total Employment	0.16	0.07	0.08

Source: NSS.

Restaurants', 'Services' and 'Transport, Storage and Communication' have witnessed labor-absorbing growth patterns. The high growth in these sectors is also a positive trend. However, the share of these sectors in total employment in the country is considerably lower than in 'Agriculture'. This constrains the benefits of growth from being passed on to a larger section of the workforce.

Notes

1. Philip Amis. 1995. Making Sense of Urban Poverty. *Environment and Urbanisation*. 7 (1). April.
2. Timothy Besley and Robin Burgess. Can Labour Regulation Hinder Economic Performances? Evidence from India. London School of Economics.

7 Government Initiatives for Poverty Eradication

From the beginning, poverty elimination has been a top priority with the Government of India. Several schemes and programs aimed at employment generation and social development have been implemented in the country. In general, the government's anti-poverty strategy has had three broad components: promotion of economic growth, promotion of human development and targeted programs of poverty alleviation to address the multi-dimensional nature of poverty. As is recognized in the literature, in poor countries like India, almost all government policies can be thought of as being aimed at poverty reduction. These could be investments both in physical and social infrastructure, technology policies, regulatory policies, agricultural policies, fiscal policies, and the like. Apart from such broad-based programs, governments in countries where poverty is pervasive specifically design and implement policies that actively target the poor disproportionately more than the better-off. These typically consist of government expenditures on social sectors such as education, health, and policies specifically targeting rural development.

Overview of Poverty-targeting Policies[1]

The rationale underlying Poverty-targeting Policies (PTPs) is that the social returns from them are higher for the population at the lower end of income distribution than for those at the higher end. PTP initiatives have been 'actively targeted' at the poor through large public expenditure on social sectors and subsidies for economic services such as irrigation, fertilizers, food and power. For instance, the subsidies provided by the central and state governments in 1998–1999 accounted for around 13.5 percent of the GDP at market prices and 86 percent of the combined revenue receipts of the centre and states.[2] Further, the central government expenditure on PTPs has grown both in nominal and real terms since the early 1990s although the growth rate in real terms has been less sharp (Table 7.1). Additionally, there has been a large proliferation of poverty alleviation programs implemented

by the central government under the Centrally Sponsored Schemes (CSS); as of 2001, the number of CSS was 360. The Tenth Five Year Plan has recommended the rationalization of the large number of schemes through the elimination of 48 schemes, merging of 161 schemes into 53 and retaining the remaining 135 schemes. Detailed information on these large numbers of CSS is not always available as their design and implementation are spread across several ministries.[3]

TABLE 7.1 Major Poverty Targeting Programs of the Government of India

Ministry/ Department	Schemes	Central Funding 2001–02 (INR billions)	%of Total Expenditure	%of GDP
Ministry of Rural Development	1. Swarn Jayanti Gram Swarozgar Yojana (SGSY)	5.5	0.15	0.026
	2. Jawahar Gram Samridhi Yojana (JGSY)	18.8	0.52	0.090
	3. Employment Assurance Scheme (EAS)	18.8	0.52	0.090
	4. Sampoorna Grameen Rozgar Yojana (SGRY}	87.5	2.41	0.418
	5. Indira Awas Yojana (IAY)	16.9	0.47	0.081
	6. National Social Assistance Program (NSAP)	6.4	0.18	0.031
	7. Annapoorna Scheme	1.0	0.03	0005
	8. Pradhan Mantri Gram Sadak Yojana	25.D	0.69	0.120
	9. Integrated Wastelands Development Program (IWDP)	4.3	0.12	0021
	10. Drought Prone Areas Program (DPAP)	1.6	0.04	0.008
	11. Desert Development Program (DPP)	1.2	0.03	0.006
Ministry of Urban Development and Poverty Alleviation	1. National Slum Development Program (NSDP)	2.8	0.03	0.013

Contd

Table 7.1 *Contd*

Ministry/ Department	Schemes	Central Funding 2001–02 (INR billions)	%of Total Expenditure	%of GDP
Department of Public Distribution, Ministry of Consumer Affairs	1. Targeted Public Distribution System (TDPS) and Antyodaya Anna Yojana (AAY)	176.1	4.8G	0.342
Department of Education, Ministry of Human Resource Development	1. Non Formal Education (NFE)	4.0	0.11	0.019
	2. National Program for Nutritional Support to Primary Education	9.3	0.26	0.044
	3. Operation Blackboard Scheme	5.2	0.14	0.025
	4. Sarva Shiksha Abhiyan	5.0	0.14	0.024
Department of Fertilizers	1. Retention Pricing Scheme (RPS)	73.7	2.03	0.352
	2. Concession Scheme for de-controlled fertilizers	45.2	1.25	0.216
Ministry of Agro and Rural Industries	1. Prime Minister's Rozgar Yojana	1.9	0.05	0.009
	2. Rural Employment Generation Program (REGP)	1.2	0.03	0.006
	3.Khadi and Village Industries Commission (KVIC)	2.5	0.07	0.012
Ministry of Social Justice and Empowerment	1. Special Central Assistance To Special Component Plan For Scheduled Castes	4.5	0.12	0.022
Department of Women and Child Development. Ministry of Human Resource Development	1. Integrated Child Development services (ICDS) Scheme 12.2	0.34	0.053	

Source: Srivastava. 2004.

Notes: Percentages with respect to GDP and total government expenditure derived from National Accounts Statistics.

The first government initiative for reducing poverty was the Community Development Program which was started in 1952 and was aimed at integrated development at the local level through the cooperation of people and sharing of technical knowledge across different fields. Other broad-based programs that were subsequently implemented through various five year plans were the abolition of zamindari and the policy of land reforms as well as the adoption of new agricultural technology that spurred the Green Revolution and consequently higher growth in the rural areas of several states. The states witnessing higher growth due to the Green Revolution also demonstrated marked decline in their poverty levels. However, despite several benefits that flowed from these broad-based programs, the impact of these initiatives was considered to be far from satisfactory.[4] Consequently, a rethinking of poverty alleviation programs in the 1970s led to more active targeting of poverty in rural areas through programs such as the Rural Works Program (RWP), the Drought Prone Areas Program (DPAP), the Desert Development Program (DDP), programs for small and marginal farmers (SFDA), and the Marginal Farmers and Agricultural Laborers Agency (MFAL). The 1980s also saw the proliferation of CSS across the country.

The effective design and implementation of PTPs critically depend on the mechanisms to identify the poor. This may be done through means testing or income criterion, indicator targeting and self-targeting.[5] The income criterion methodology involves the drawing up of appropriate poverty lines as discussed in earlier chapters. However, given that means testing may be imperfect in the presence of reliable information on individual/household consumption and income which can lead to costly leakages and perverse incentives, various schemes have been drawn up on the basis of indicator targeting. Apart from using the means criterion, other specific correlates of poverty such as landholding, profession and social class or geographical indicators such as place of residence are used as determinants to identify the poor.

Finally, self-targeting is considered to be operationally the simplest type of PTP where in case there is a discrepancy between the information available with the government which provides poverty assistance and the potential beneficiaries, and the situation as experienced by the poor, the latter self-select to be part of such programs. Following Dev and Galab, PTPs can be broadly defined into four categories, namely (*i*) self-employment programs (*ii*) wage-employment programs (*iii*) public distribution system and (*iv*) social security programs. The focus of PTPs under (*i*) is the provision of productive assets to households in the target group or on the provision of credit to be used to purchase such assets as well as to invest in acquiring skills that would increase the ability of households to generate self-employment in productive activities. The most important self-employment program

that came into effect in April 1999 is the Swarna Jayanti Gram Swarozgar Yojana (SGSY). Programs under (*ii*), by providing gainful employment in public works programs have become a major mechanism for alleviating poverty. These programs include the Jawahar Gram Swarozgar Yojana (JGSY), Employment Assurance Scheme (EAS) and Swarna Jayanti Gram Rozgar Yojana (SGRY) and food for work programs. The public distribution system or PDS under (iii) is aimed at improving food security by providing essential commodities for consumption to the poor at subsidized rates. The programs under PDS are Antodaya Anna Yojana and Annapurna. Finally, social security programs under (iv) have come into existence to benefit poor households in the case of old age, death of the primary bread earner and maternity. Examples of these are the Krishi Shramik Samajik Suraksha Yojana (KSSSY), National Old Age Pension Scheme (NOAPS), National Family Benefit Scheme (NFBS), and National Maternity Benefit Scheme (NMBS). Table 7.1 presents a summary account of some of the major PTPs (exceeding INR 1 billion) as of 2001–2002 that are being implemented by the different ministries of the central government under CSS.

Self-employment and Wage Employment Programs

The National Rural Employment Guarantee Act (NREGA) passed in 2005 is a step forward in providing employment opportunities to the rural and urban poor. For the rural areas, the major programs being implemented are the Swarna Jayanti Gram Swarozgar Yojana (SGSY), of which an integral part is the Integrated Rural Development Program (IRDP), and the Sampoorna Grameen Rozgar Yojana (SGRY); for the urban areas Swarna Jayanti Shahari Rozgar Yojana (SJSRY) is a key employment generation program.

NREG Act

Under this Act, the state governments have to make available a scheme that provides 100 days of employment at minimum wages to voluntary workers from targeted families covering every poor household. Employment is given on public works programs subject to the conditions laid down in the Act. Thus, it is expected to serve the twin purpose of employment generation and building social infrastructure. 200 districts have been identified for the implementation of this Act in the initial stages. The government has allocated INR 113 billion (11,300 crores) for its implementation in fiscal 2005–2006.

Of the 200 backward districts identified under the Act, in 150 the National Food for Work Program was being implemented. A task force set up by the Ministry of Rural Development considered a number of parameters to identify the backward districts. These parameters include incidence of

poverty, unemployment rate, agricultural wage rate, per hectare agricultural productivity, productivity per agricultural worker, SC/ST population, susceptibility to drought and desertification, and rural connectivity.[6]

However, since the introduction of NREGA, serious questions have been asked about its approach and design. The first objection questioned the need of another such program when other employment generation programs were already in existence. The main difference between NREGA and previously introduced employment generation programs is that the former provides a guarantee of employment.

As far as the implementation of the Act is concerned, it was feared that the gains may not reach the target group. However, this seems unlikely as the program is self-targeting. Only if a person is unemployed or employed at a wage less than the stipulated minimum wage, would he or she, opt for this program. Another objection was regarding the cost involved in implementing NREGA. Calculations reveal that the government will require INR 282.61 billion every year for implementing the program in all the rural areas of the country (see Table 7.2).

Given the employment scenario in the country, the need for such a program cannot be denied. It ensures an alternative in case a person is unemployed. This is particularly important for India which has the twin drawbacks of unemployment and the absence of any social insurance scheme. However, for the success of the program, it is important that the focus should not shift from employment generation to asset building. The latter must be seen only as a bonus outcome of the program, and not the primary objective.

Swarna Jayanti Gram Swarozgar Yojana: SGSY

SGSY was launched in April 1999 with the objective of generating self-employment opportunities for the people below the poverty line. It has been conceived as a holistic program that can facilitate the development of micro enterprises through the social mobilization of the poor in rural areas. The funds of the SGSY are shared according to a ratio of 75:25 between central and state governments. Under SGSY, self-help groups (SHG) are organized to provide beneficiaries with training and income-generating assets through bank credit or government subsidy. Group formation is the focus under the SGSY. The self-help groups move through various stages:

- Social mobilization and formation of groups.
- Savings and internal lending among the members of the group augmented by revolving fund grants from the government and linkages with banks and other credit agencies.
- Obtaining micro finance.
- Setting up of micro-level enterprises.

TABLE 7.2 Cost of NREGA in the Rural Areas

States	Per 1000 Households in the Lower Middle and Below Category	Percentage of Households in the Lower Middle and Below Category	Total Number of Households in the State (1999–2000)	Households Targeted Under the Scheme	Minimum Wages (2000)	Cost
Andhra Pradesh	374	37.4	1.27E+07	4.76E+06	30	1.43E+10
Assam	638	63.8	3.69E+06	2.35E+06	45	1.06E+10
Bihar	646	64.6	1.50E+07	9.69E+06	37.88	3.67E+10
Gujarat	272	27.2	5.92E+06	1.61E+06	34	5.48E+09
Haryana	208	20.8	2.48E+06	5.16E+05	74.3	3.83E+09
Himachal Pradesh	203	20.3	1.07E+06	2.18E+05	26	5.66E+08
Karnataka	396	39.6	7.06E+06	2.79E+06	26	7.27E+09
Kerala	192	19.2	4.44E+06	8.52E+05	30	2.56E+09
Madhya Pradesh	619	61.9	1.12E+07	6.93E+06	49.46	3.43E+10
Maharashtra	410	41	1.16E+07	4.77E+06	39	1.86E+10
Orissa	694	69.4	6.35E+06	4.40E+06	42.5	1.87E+10
Punjab	164	16.4	2.76E+06	4.53E+05	69.1	3.13E+09
Rajasthan	364	36.4	6.37E+06	2.32E+06	60	1.39E+10
Tamil Nadu	416	41.6	9.37E+06	3.90E+06	54	2.10E+10
Uttar Pradesh	481	48.1	2.24E+07	1.08E+07	47	5.07E+10
West Bengal	585	58.5	1.13E+07	6.59E+06	62.1	4.09E+10
Delhi	14	1.4	7.06E+05	9.89E+03	93	9.19E+07
Total Cost						**2.8261E+11**

Source: IDF calculations.

One of the important features of SGSY is to assist the weaker sections of society; 50 percent of the SHGs formed and 40 percent of the individual swarozgaris assisted have to be allocated to women, 50 percent of swarozgaris should be SCs/STs and 3 percent of the assistance is for the disabled. Between 2001–2002 and 2004–2005, the total number of beneficiaries of SGSY were 5.12 million (see Table 7.4). Utilization of funds available for the years under consideration was around 68.3 percent. However, the percentage of utilization on infrastructure development and training/skill development has been relatively low, 13.96 and 3.89, respectively.

TABLE 7.3 Financial and Physical Progress under SGSY: 2001–02 to 2004–05

	2001–02	2002–03	2003–04	2004–05	Total/ Average*
1. Total Funds Available (million)	129.95	117.81	121.41	116.42	842.62
2. Total Funds Utilized (million)	97.03	92.11	104.42	61.07	562.42
- % of utilization to funds available	74.67	78.18	86.01	52.46	68.29*
- % of utilization allocation	125.28	121.78	97.97	45.83	89.99*
- % utilization on subsidy	86.16	80.10	148.35	32.22	72.72*
- % utilization on infrastructure dev.	19.79	18.01	4.83	6.17	13.96*
- % utilization on training/ skill dev.	6.23	5.44	2.36	2.66	3.89*
3. Total Swarozgaris assisted (million)	0.94	0.83	0.89	0.52	5.12
4. % of SHGs assisted	38.90	50.16	64.33	70.52	46.68*
5. % of SC/STs assisted	45.62	45.97	46.12	44.09	45.12*
6. % of women assisted	41.16	46.31	52.41	51.7	46.16
7. % of disabled assisted	0.65	0.74	0.95	31.13	0.84

* Average

Source: Government of India, Ministry of Rural Development. *Annual Report* 2004–05.

In place of annual targets, the SGSY has targeted 30 percent of families below the poverty line (BPL) insince 1999. The program has been well-targeted in the sense that 92.68 percent of the people who were given employment through the program were below the poverty line. 63.81 percent of them were women and 47.55 percent were from the SC/ST category.[7] However, the targets that were set in terms of coverage of the potential beneficiaries have not been accomplished by a wide margin. By the end of the third year, i.e., March 2002, only 2.56 million BPL families were covered which constituted less than 5 percent of the five-year target. Although SGSY came into effect in response to the unsatisfactory performance of IRDP,[8] the rate of coverage as well as the coverage of beneficiaries under SGSY was far less compared to that under IRDP; IRDP in the last two years of its implementation covered 17 percent more than what SGSY could accomplish in the first three years since its inception.[9]

One of the areas of concern regarding SGSY has been that the intended integration of different schemes under its purview has not happened.

TABLE 7.4 State-wise Number of Sanctioned and Operational Projects, Anganwadi Centers and Number of Beneficiaries under ICDS Scheme in India (As on 31.3.2004)

States/UTs	No. of ICDS Projects		No. of Anganwadis		No. of Beneficiaries		
	Sanctioned	Operational	Sanctioned by GOI	Operational	Children < 6 years	Women	Total
Andhra Pradesh	363	351	54,312	53,564	25,36,035	6,42,244	3,178,279
Assam#	196	195	25,416	25,302	12,35,299	1,70,565	14,05,864
Bihar	394	183	60,813	24,871	13,07,231	8,24,095	21,31,326
Chhattisgarh	152	152	20,289	20,277	13,98,938	3,35,476	17,34,414
Gujarat	227	227	37,961	35,441	15,60,731	2,56,199	18,16,930
Haryana	116	116	13,546	13,546	8,96,907	2,32,474	11,29,381
Himachal Pradesh	72	72	7,354	7,354	3,09,590	68,898	3,78,488
Jharkhand	204	152	15,505	14,967	4,58,954	1,88,670	6,47,624
Karnataka	185	185	40,301	40,301	25,87,430	4,94,029	30,81,459
Kerala	163	163	25,393	24,415	9,39,966	1,53,137	10,93,103
Madhya Pradesh	336	336	49,784	48,824	22,65,041	6,23,804	28,88,845
Maharashtra	370	368	62,716	58,109	40,55,941	6,09,237	46,65,178
Nagaland	54	54	2,770	2,770	2,29,829	37,918	2,67,747
Orissa	326	326	34,201	34,201	36,89,078	6,71,587	43,60,665
Punjab	142	142	15,829	14,016	4,21,575	1,06,801	5,28,376
Rajasthan	257	257	35,821	35,686	26,00,195	5,75,368	31,75,563
Sikkim	5	5	500	500	34,353	6,091	40,444

Contd

Table 7.4 *Contd*

States/UTs	No. of ICDS Projects		No. of Anganwadis		No. of Beneficiaries		
	Sanctioned	Operational	Sanctioned by GOI	Operational	Children < 6 years	Women	Total
Tamil Nadu	434	434	42,377	30,059	14,40,075	4,44,180	18,84,255
Uttar Pradesh	836	742	1,03,104	75,005	19,51,204	1,55,104	21,06,308
Uttaranchal	99	96	6,378	5,924	1,18,122	28,682	1,46,804
West Bengal	358	352	57,540	53,354	28,93,506	4,91,961	33,85,467
Andaman and Nicobar Islands	5	5	527	429	23,734	4,817	28,551
Chandigarh	3	3	300	300	31,095	7,184	38,279
Delhi	29	28	3,902	3,842	4,18,405	82,208	5,00,613
Dadra and Nagar Haveli	1	1	138	138	11,381	1,804	13,185
Daman and Diu	2	2	87	87	6,977	1,898	8,875
Lakshadweep	1	1	74	74	3,877	986	4,863
India	**5,451**	**5,068**	**7,28,759**	**6,33,583**	**3,35,57,675**	**72,43,338**	**4,08,01,013**

Further, the planning that is required to set up micro-level enterprises has been lacking. It is important that the schemes initiated under the program cater to the specific needs of the area. The identification of key activities and planning of activity clusters is an important component of SGSY, though it has been a weak link so far. However, it has been observed that the selection of key activities was undertaken without involving funding agencies like banks. Additionally, apart from select evidence that malpractices exist at the micro-level in the implementation of SGSY, audit checks on SGSY have revealed that of the INR 9.9 billion spent on SGSY, as much as 53.5 percent of the funds were either diverted, misutilized or misreported.[10]

Sampoorna Grameen Rozgar Yojana (SGRY)

The SGRY was launched in September 2001 with the objective of providing wage employment in rural areas and for providing food security, along with creating durable community, social and economic assets and infrastructure development. Similar to SGSY, the scheme operates on a ratio of 75:25 with regard to the financing of the project by the central government and state government. The SGRY was formed after integrating two erstwhile schemes, the Jawahar Rozgar Yojana (JRY) and the Employment Assurance Scheme (EAS). It also includes the Food for Work programs. Given the different schemes that fall under SGRY, its implementation requires coordination between three central ministries, namely Agriculture, Food and Rural Development. Since its inception and up to 2004–2005, the total funds available under SGRY have been INR 245.21 billion of which INR 180.34 billion was spent.

Given that SGRY is a relatively new PTP, it has not been fully assesed. Evidence from a recent study of SGRY in Andhra Pradesh reveals that its implementation has not been satisfactory particularly with respect to the selection of beneficiaries (affected by nepotism), the widespread use of contractors contrary to the scheme guidelines, and the prevalence of corruption and leakage of funds.[11] The impact of the scheme also varied across the villages that were selected for the study and the number of person days of employment created was also relatively low. Further, the study documents that wages paid under SGRY were too low in prosperous villages, and much higher than the prevailing wage rate in poor villages leading to the use of migrant labor in the former and crowding out of the real poor in the latter.

Swarna Jayanti Shahri Rozgar Yojana: SJSRY

Both SGSY and SGRY target the poor in rural areas. Urban poverty is structurally different from rural poverty and thus tackling it requires a different approach. More than deficiencies in nutritional requirements, in urban areas

poverty is characterized by the lack of access to other basic necessities like shelter, civic amenities, health care, education, etc. Thus schemes to reduce urban poverty are related to human development rather than employment generation.

The poverty ratio in urban India has decreased continuously from 54.9 percent in 1973–1974 to 25.7 percent in 2004–2005. At the same time the absolute number of poor in urban areas has increased over the years; between 1993–1994 and 2004–2005, the number of urban poor has increased from 76.3 million to 80.8 million. For many of the larger states like Andhra Pradesh, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, urban poverty rates are higher than those of rural poverty. This is also true for some small states like Goa and Lakshadweep.

The Swarna Jayanti Shahri Rozgar Yojana (SJSRY) is the only program that addresses the issue of urban unemployment. The program aims at generating employment opportunities through wage employment or self-employment. As in the case of SGSY, SJSRY also relies on community groups to provide support for local development. The 10th plan has allocated INR 5.41 billion for the scheme, out of which around INR 3.33 billion has already been utilized in the first three years.

Food Security Programs

Providing food security to the poor and vulnerable has been one of the key elements of PTPs in India. At present, several programs in India have acquired importance particularly in view of the MDGs of reducing poverty and eliminating hunger. Among these are the PDS including the Targeted Public Distribution System (TDPS) and the Integrated Child Development Scheme (ICDS) and the Mid-Day Meal Scheme (MMS).

The Public Distribution System

The public distribution system (PDS) has been one of the most important and far-reaching poverty alleviation programs in the country. Through the PDS, the government has sought to provide food security to poor households by supplying these households with six essential commodities at subsidized prices, namely wheat, rice, sugar, edible oils, kerosene and soft cake. Although till 1997, the access to PDS was universal, the government subsequently decided to restructure PDS and introduced a targeted PDS (TPDS) program in 1997. Special cards were issued to BPL families, and under the scheme, each poor family was allocated a certain amount of food grains per month at a subsidized price; while this amount was 10 kg of grain in the initial years of TPDS, it was increased in 2000 to 20 kg of grain per family per month at

50 percent of the economic cost, and to 25 kg per family per month in July 2001. Further, under the Antyodaya Anna Yojana Program, 25 kg of food grains are provided to the poorest of the poor families at a highly subsidized rate of INR 2 per kg for wheat and INR 3 per kg for rice.

Notwithstanding the fact that the PDS has been instrumental in providing food security in India, several problems have plagued PDS over the years. Important among these are that (*i*) PDS has benefited the poor only marginally (*ii*) the poor have to pay a higher market price in the presence of PDS (*iii*) procurement and transportation costs are high, and (*iv*) there have been leakages from the PDS to the open market. Problems that have been specific to the TPDS include: (*i*) identifying the poor through the income-based means test has not been foolproof and has led to both inclusion and exclusion errors,[12] (*ii*) inability of the poor to buy the allotted food grain quota of 25 kg due to the scarcity of cash (*iii*) the low quality of food grains, with some stocks as old as 16 years,[13] and (*iv*) weak monitoring, lack of transparency and absence of accountability in the implementation of the scheme.

Food Security for Children: ICDS

Given the existence of high levels of malnutrition among children in India, the Government of India introduced in 1975 the Integrated Child Development Scheme (ICDS) in order to improve health outcomes among children. ICDS is considered to be the largest of all food supplementary programs in the world.[14] The primary objectives of the ICDS are (*i*) to assist in the psychological and social development of the child (*ii*) to reduce infant mortality and morbidity and also maternal mortality rate (*iii*) to improve the nutrition and health status of children below 6 years, pregnant women and nursing mothers, and (*iv*) to enhance a mother's ability to provide proper child care through better health care and education. ICDS services are provided through village-based centers or *anganwadis* services related to supplementary nutrition, immunization, health check-up, referral services, treatment of minor illnesses, nutrition and health education to women, pre-school education to children and supports for water supply, sanitation, etc. As can be seen from Table 7.4, as of 2004, the total number of ICDS projects operational across all states was 5,267. The total number of beneficiaries among children under age 6 was 34.15 million, and among women, 7.35 million. While in a large majority of states like Andhra Pradesh, Assam, Madhya Pradesh, the number of projects operational was almost equal to the number of projects sanctioned, notable exceptions in this regard are Bihar, Jharkhand and Uttar Pradesh.

An important aspect of ICDS is the assistance received from The World Bank since 1990–1991. Under the various phases of this assistance, The World Bank ICDS project (WB-ICDS) covered 301 ICDS projects in Andhra Pradesh and Orissa during 1991–1997, while phase II of the project (1997–2002) covered 454 projects in Bihar and Madhya Pradesh. Phase III of the project (1998–2004) aimed at covering 461 projects in Andhra Pradesh, Kerala, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

While over the last three decades, the ICDS program has expanded and reached out to a large number of potential beneficiaries, what is worrisome is that it has made few inroads into reducing the incidence of malnutrition among children. Around 50 percent of children are still undernourished, 16 percent are acutely undernourished, 58 percent are not fully vaccinated and 14 percent are not vaccinated at all.[16] Further, supplementary nutrition is being provided to 34 million children as opposed to 160 million children, half of whom are under-nourished in the 0–6 age group. The coverage of settlements or anganwadis is also considered to be 'highly inadequate'; there are 0.6 million anganwadis in the country compared to an estimated 1.7 million which are required for universal coverage based on existing norms. Among the states that have made significant progress in administering ICDS are Kerala and Tamil Nadu.[17]

The Government of India is currently moving towards the universalization of ICDS to provide a functional anganwadi in every settlement and ensure full coverage of all children. This move has been reaffirmed by the Supreme Court in April 2004. As per the estimates of the National Advisory Council (NAC), universalization will require substantial investment in setting up new anganwadi centers as well as making the existing centers fully operational. The coverage of ICDS should be tripled, and with the doubling of unit costs, this would require a six-fold increase in ICDS expenditure from INR 16 billion to INR 96 billion a year. The number of anganwadi centers required to universalize ICDS in rural and urban areas as per estimates of NAC is presented in Tables 7.5(a) and 7.5(b).

Social Security Programs

Till the 1990s, India did not have a comprehensive system of old age protection. It was in 1995 that the National Social Assistance Program (NSAP) was introduced to assist poor households in the case of old age, death of primary bread winner and maternity. The NSAP has three components, namely the National Old Age Pension Scheme (NOAPS), National Family Benefit Scheme (NFBS) and National Maternity Benefit Scheme (NMBS). The NSAP is a 100 percent centrally funded program which seeks to ensure a minimum national standard of social assistance in addition to the benefits

TABLE 7.5(a) Number of Anganwadi Centers (AWCs) Required in Rural Areas to Universalize ICDS in Select States*

	Number of AWCs Required in 'Scheduled Tribe Dominated' Habitations	Number of AWCs Required in Other Habitations	Total
Andhra Pradesh	11,244	79,619	90,863
Assam	9,662	42,007	51,669
Bihar[a]	25,053	1,42,628	1,67,681
Gujarat	14,136	37,854	51,990
Haryana		21,734	21,734
Himachal Pradesh	867	16,516	17,383
Karnataka	3,570	59,971	63,541
Kerala	282	31,450	31,732
Madhya Pradesh[a]	47,373	84,078	1,31,451
Maharashtra	13,855	84,101	97,956
Manipur	2,130	1,576	3,706
Nagaland	2,470		2,470
Orissa	26,213	48,154	74,367
Punjab		23,846	23,846
Rajasthan	14,086	69,661	83,747
Sikkim	257	1,084	1,341
Tamil Nadu	1,572	64,720	66,292
Uttar Pradesh[a]	2,685	2,78,668	2,81,353
West Bengal	11,591	1,09,497	1,21,088
Delhi	23	1,355	1,378
Other Union Territories[b]	674	1,290	1,964
India (Rural)	**1,89,921**	**12,14,188**	**14,04,109**

Source: Government of India, National Advisory Council. 2004.

[a] 'Undivided'

[b] Andaman & Nicobar, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Pondicherry.

that states are already providing. The number of beneficiaries under NOAPS as of 2004–2005 was 7.79 million; the number of beneficiaries under NFBS as of 2001–2002 was 1.14 million and the total number of beneficiaries under NMBS as of 2004–2005 was 0.4 million.

The effectiveness of NSAP was evaluated in a sample of states (Andhra Pradesh, Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa and

TABLE 7.5(b) Number of Anganwadi Centers (AWCs) Required in Urban Areas to Universalize ICDS*

	Urban Population as per 2001 Census	Estimated Urban Population, September 2004	Number of AWCs Required
Andhra Pradesh	20,50,3597	2,13,11,034	21,311
Assam	33,89,413	35,15,291	3,515
Bihar	86,79,200	90,93,692	9,094
Chhattisgarh	41,75,329	43,65,333	4,365
Goa	6,68,869	6,87,457	687
Gujarat	1,88,99,377	1,97,05,345	19,705
Haryana	61,14,139	63,94,871	6,395
Himachal Pradesh	5,94,881	6,15,037	615
Jharkhand	59,86,697	62,18,793	6,219
Karnataka	1,79,19,858	1,86,03,630	18,604
Kerala	82,67,135	85,43,882	8,544
Madhya Pradesh	1,61,02,590	1,68,48,533	16,849
Maharashtra	4,10,19,734	4,26,76,931	42,677
Nagaland	3,52,821	3,61,411	361
Orissa	54,96,318	57,13,885	5,714
Punjab	82,45,566	85,51,794	8,552
Rajasthan	1,32,05,444	1,38,60,437	13,860
Sikkim	60,005	61,819	62
Tamil Nadu	2,72,41,553	28,21,4438	28,214
Uttar Pradesh	3,45,12,629	3,63,94,382	36,394
Uttaranchal	21,70,245	22,42,013	2,242
West Bengal	2,24,86,481	2,31,15,950	23,116
Delhi	1,28,19,761	1,32,82,816	13,283
Other Union Territories[a]	17,08,159	17,64,587	1,765
India (Urban)	**28,31,25,110**	**29,47,30,502**	**2,94,731**

Source: Ibid.

[a] Andaman & Nicobar, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Pondicherry.

West Bengal) three years after its implementation.[18] The study, conducted by the Operations Research Group concluded that the physical achievements for all three schemes in the first two years of implementation were relatively low. However, NOAPS achieved reasonable success in the third year surpassing

targets in most states. It is also observed that NOAPS is one of the PTPs based on the income criterion which has been successfully implemented with low targeting errors of both Type 1 and 2.[19] Further, the implementation of NOAPS has not been affected by corruption and interference that has been endemic in many other PTPs. NOAPS has also been considered effective in terms of reaching out to SC/STs and women; 40–60 percent of women have been accessed across states. One of the problems with NOAPS is that the provision of Rs 75 per month to 30 percent of the poorest people over age 65 has not changed since 1995 and is not indexed to inflation.

Overall, it is observed that NOAPS is a 'welcome contrast' to other PTPs in India[20] as it has been successful in delivering modest benefits in its entirety to intended beneficiaries. The other two NSAP schemes have been less successful; the use of benefits in income-generating activities was negligible for NFBS beneficiaries, and most NMBS beneficiaries benefited from the maternity benefit scheme only after childbirth.[21]

The Way Forward: Interventions for Poverty Reduction

Interventions to reduce poverty need to take place at three different levels, and need to work in an integrated manner. At the macro-level there are interventions aimed at income-poverty reduction through capital formation in human and physical resources, and achieving economic growth through fiscal incentives and expenditures; at the community or village/group level government interventions aim at directly providing basic social services that are the foundation of human capital formation and local infrastructure development. The third type of interventions target good health, nutrition, and education at the individual level. Poverty reduction efforts work most effectively when social sector policies are integrated with macro-economic ones. In strategies where one is absent, the impact of the interventions to achieve the other goals is reduced. Policies which focus on *economic growth* without much regard for income-poverty reduction or human capital formation are likely to accentuate unequal income distribution or the uncertainty of 'trickle-down effects', which will dampen economic growth prospects in the long run. Policies that focus only on *human capital formation*, but ignore other necessary conditions for economic growth and income-poverty reduction, may lead to a lack of employment opportunities for a better educated and skilled workforce. Policies that focus mainly on direct *income poverty reduction* (e.g., asset redistribution, food-for-work programs, cash transfers, or social security arrangements for formal sector workers) and human capital formation, and ignore macro-economic balances or ignore interventions to promote technological change that is critical to economic growth run the risk of both economic and social stagnation

or reversal, especially if the economy suffers from an adverse exogenous shock. To achieve this integration, it is crucial that fiscal, monetary, and growth policies are compatible with social sector requirements. The latter must also be compatible with macroeconomic constraints and supportive of the long-term growth process. Public expenditure must support the provision of basic social services—which are directly relevant to both the poverty-reduction objective through programs targeted at the poor, as well as through allocations to health and education. Similarly, public expenditure should support the creation and maintenance of infrastructure as well as investment in agriculture. Just such a synergy of interventions is to be followed in the Eleventh Plan (*Approach Paper to the Eleventh Plan* and the *Draft Eleventh Five-Year Plan*), which will be based on strategies to simultaneously promote economic growth, income-poverty reduction and human capital formation. The framework is designed to reduce poverty and focus on bridging the various divides that continue to fragment our society and the economy: widening personal income inequality; inter-regional and inter-state disparities; the rural–urban divide; and gender-based disparities.

A Multi-Pronged Approach to Poverty Alleviation

Given the chronic and multi-dimensional nature of poverty in India, programs have been introduced to address poverty through a multi-pronged approach. For a start, poverty is concentrated in the rural areas of certain states; it is also becoming increasingly identified with certain social groups and occupations, such as agricultural labor and artisan households in rural areas, and among casual laborers in urban areas, who are essentially 'distress migrants' from rural areas in states where the agricultural land-man ratio is very adverse, and where agricultural incomes have not been growing. The multipronged approach will focus on the varying needs of different groups of poor in the country. The poor also need a safety net if they are to break out of the cycle of periodic crop failures, or some adverse exogenous shocks, ill health and consequent loss of livelihood and descent into poverty. At least 18 million rural people in India are shelterless, and the rural housing program needs to address this issue. Similarly, the elderly, destitute, widowed and disabled among the rural poor need social assistance. The income-poor also suffer from low human capital. Household size is closely related to both malnutrition of adults and children, and to the inter-generational transfer of poverty. The *Approach Paper to the Eleventh Five-Year Plan* notes the developmental divide between urban and rural India, and has articulated a multipronged strategy to reduce this divide. The Bharat Nirman program is designed to address the gaps in rural infrastructure and covers irrigation, road connectivity, housing, water supply, electrification and telephony.

The National Rural Employment Guarantee Act provides a social safety net through guaranteed employment in rural areas, and can also help in building rural infrastructure. The Sarva Shiksha Abhiyan and National Rural Health Mission are programs for providing universal primary education and primary health. Most of the poverty eradication programs for local-level development are in the realm of local government functions. While national initiatives and investment are necessary for these to have the desired impact on poverty, experience over the past several decades has shown that results have not been commensurate with expectations. The efficiency of various poverty reduction programs needs to be vastly improved. The functioning of the government machinery at all levels from the state to district to village needs to become more effective. Accountability and transparency of the implementation processes need to improve significantly to reduce leakages and inefficiency. Attention should also be paid to strengthening the institutional framework that leads to the involvement of the community at large.

The Need for Decentralized Planning and Delivery

Most direct interventions by the government in the form of centrally sponsored schemes (CSSs) need to provide a central role to local governments for better results. There are several limitations in the present pattern of implementation of these schemes. What is needed is greater horizontal convergence or vertical integration; the schemes should have the flexibility to adapt to local-level development needs. The focus should be shifted away from expenditure to the quality of output and outcomes. Local governments have several inherent advantages: they are well positioned to look at local problems holistically and evolve cross-sectoral solutions; they can exploit local production possibilities and adopt technologies, and act more quickly at the local level being closer to the people; and local bodies can better identify local priorities and enter into partnerships with communities for the management of assets and facilities. Though they may not be efficient tax collectors, local governments are generally competent in mobilizing resources in the form of contributions and user charges. The key weaknesses of extending responsibilities to the lower tiers of local government are the (i) lack of technical capacity to evaluate and monitor the execution of the programs; (ii) inability within the governance system to assign the necessary capacity to the lower tiers of government; and (iii) vulnerability of the system to political exploitation. On balance, local governments at the district, block and village levels provide a good entry point to bring about more effective implementation of poverty reduction programs. For these outcomes to be realized, however, local bodies need to be strengthened through a strategy

that builds up their capacity for planning, monitoring and evaluation. There are two parts to this: Panchayati Raj Institutions' (PRI) involvement in the planning process, and their involvement in the delivery of services. This may call for a shift to integrated planning at the grassroots level leading to the preparation of district plans. Many of the schemes which will be discussed in this report, such as the Sarva Shiksha Abhiyan (SSA), Mid-day Meal scheme (MDM), Rural Health Mission, Pradhan Mantri Gram Sadak Yojana (PMGSY) and so on lend themselves to very effective grassroots-level planning.

Community Organizations

Self-help Groups (SHG) have revolutionized the manner in which formal credit can be brought to the poor and other individuals who may not have been able to access credit from formal institutions such as banks. The group approach to lending has made it possible to provide millions of individuals the means for saving and borrowing in a more transparent manner than ever before. Cooperatives had provided this momentum in the agricultural sector, although the approach faltered for a variety of reasons including the inability to separate service delivery from political considerations. The experience with SHGs points to their potential for smoothening of consumption expenditures, and they can be an important safety net for the poor. The local governments at the village level provide similar benefits in terms of identifying the needs of local people and designing measures to improve their livelihood opportunities. The experience in running systems such as drinking water supply or local school and health facilities should provide the basis for more intensive involvement of communities in poverty-reduction programs.

Public–Private Partnerships

The limits to the public delivery of services are apparent both in terms of financial resources and efficiency. Although in principle, financial resources would have to be provided by the government to meet the minimum needs of the population, which are increasingly recognized as 'rights', and the government is best placed to generate the resources, it is important to recognize that there are benefits of public–private partnerships (PPPs). PPPs have an advantage in meeting specific segments of the market for services and they also lead to efficiency gains through the involvement of the private sector in the delivery of social services. Poverty-reduction programs comprise interventions in the field of education, health and the building of local infrastructure. A number of non-governmental organizations or civil

society organizations are involved in delivering similar services either under government programs or independently. However, the involvement of the private sector in building rural infrastructure has been low. Reasons for this are the dispersed nature of the demand for services, relatively lower purchasing power of consumers and the relatively higher cost of providing these services which make delivery of fee-based services more difficult. The potential for involvement of the private sector exists, but what appears to be missing is a suitable design for developing PPPs.

The 'Universal Service Obligation' in some sectors such as telecom has greater promise of providing services to rural areas. The rural electrification schemes envisaged by the government aim to provide electricity to all villages and households within a specified time-frame. All the villages and habitations are to be connected by all-weather roads in a specified time-frame. The next 10 years are poised to see a quantum change in rural infrastructure, and PPPs appear the only logical choice to implement these schemes. However, it should be recognized that the scope for such partnerships is not limited to the establishment of infrastructure but also exists in the operation and maintenance of infrastructure, be it schools, roads or health facilities. Poverty reduction goals require an acceleration in the provision of these services, and opportunities to expand and improve the provision of basic minimum services should be utilized to the maximum.

Notes

1. The discussion below is largely drawn from two recent comprehensive accounts of PTPs in India, namely Srivastava (2004) and Dev and Galab (2005).
2. Mid-Term Appraisal of the Tenth Plan, Planning Commission.
3. All figures from the Mid-term Appraisal of 10th Plan.
4. A concurrent evaluation of the IRDP showed that of the 54 million beneficiaries, only 14.8 percent (that is one in 7) could cross the poverty line (CAG 2003) cited in Srivastava (2004)).
5. CAG, 2003 cited in Srivastava. 2004.
6. Ibid.

II

Strategies for Poverty Reduction: Focus on Infrastructure, Financial Inclusion and Social Sector Interventions

8 Social Sector Services and Poverty Reduction in India*

Since Independence, India's major concern has been the huge mass of poor across the country especially in the rural areas. Therefore, poverty reduction became one of the major goals in the planned development of the Indian economy. It was slowly realized that, at least in the Indian context, poverty is not only an economic phenomenon but also a social one. National Sample Survey Organization (NSSO) data shows that the head-count ratio of poverty based on minimum calorie requirement seems to have gone down substantially over the last decade or so. However, the absolute figures are still alarmingly high. Second, the non-income deprivations in terms of education, health, sanitation, drinking water, housing, etc., are far from satisfactory.

Undoubtedly, a harmonious society will have to be based on a high and sustainable economic growth rate as redistribution and poverty reduction need to draw from economic growth. Only through growth can productive employment and other income-earning opportunities be created. However, growth requires investing in basic social services and physical infrastructure and ensuring equal access to all members of society. Fortunately, policy choices for inclusive growth are being highlighted in the discussions for the Eleventh Plan.

In recent years, India has been growing at an unprecedented rate, unknown in its economic history. However, India will have to embrace inclusive growth to ensure that its thriving economy benefits the entire country. Carefully designed redistributive policies are part of an inclusive growth strategy. The purpose of the redistribution need not be to equalize incomes, but to promote equalization of opportunities and, in the process, reduce inequalities. Increasing inequalities, if left unchecked, could have significant negative social and economic impact and could undermine stability. They could also make reforms more difficult and lead to inefficient utilization of human capital, constrain economic growth and social development, and undermine the country's long-term prosperity. Currently, the challenges

* This chapter was prepared by Basanta K. Pradhan and R. Sundar.

facing India are arising mostly from increasing inequalities across individuals, regions and groups.

It may be noted that promoting equality of opportunities requires investment in education, health, sanitation, housing, physical connectivity, and other social services to expand human capacities, especially of wage earners, and strengthening social safety nets to prevent extreme deprivation and alleviate transitory livelihood shocks. Many observers, starting from Adam Smith to Amartya Sen note that the most important entitlements for an individual are health and education.

Currently, researchers and policy planners have started taking seriously the UNDP-defined concept of human poverty, which comprises deprivation of health, education, and income. Thus, the measure of poverty through calorie intake is not adequate, but should take into account education and health parameters. Therefore, the Government of India has aimed at providing livelihoods and better services through various schemes targeting the poor.

Understandably, health, education and effective employment are interactive processes. There is a three-way mutual dependence among them. For example, increasing inequalities in incomes lead to increasing inequalities in access to basic education and health care and vice-versa. Continued market and institutional reforms make factors of production more mobile across regions and sectors, and between urban and rural areas, and the economic structure more consistent with the country's factor endowments, thereby creating more employment opportunities. To take advantage of these employment opportunities, the poor need to have access to health and nutrition, and education and skills. There are externalities at work as well: for example, education and functional literacy may increase awareness about schemes and rights that promote economic and social justice, level playing fields, and prevent corruption.

In the short run, it is necessary to ensure larger income for people below the poverty line through state interventions by enabling the creation of self-employment, through wage employment National Rural Employment Guarantee Scheme (NREGS), and through direct subsidies made available by instruments such as the Public Distribution System (PDS) that provides food grain at subsidized prices. However, long-run strategies on poverty alleviation are related to endowing people with skills through education and training, thus making them employable.

India has made commitments to a wider spread of education both at the international level (through the Millennium Development Goals and Education for All) and at the national level (increasing public expenditure in education to 6 percent of GDP, universalizing elementary education, making available free and compulsory education to children in the 6–14 age

group). Two of the most important Central Government Schemes aimed at achieving these objectives are Sarva Siksha Abhiyan (SSA) and the Mid-day Meal Scheme. The Sarva Siksha Abhiyan was launched in 2001–2002 in an effort to universalize elementary education (UEE) through community ownership of the school system. The stress is on the quality of education and supervision with accountability to the elementary school system in the country. Performance has been generally impressive as a step forward. However, there are pockets where the benefits of SSA have not had the desired impact.[1]

Employment-generation programs, intended to reduce poverty, provide 'wage employment' and 'self-employment' and hence, their efficiency in reducing poverty depends on their efficacy in generating sufficient employment opportunities. Education enables a person to participate in the country's development process and improves their income-earning capacity. Elementary education is the foundation stone for the development process. In the post-liberalization era, the demand for skilled labor has been increasing both in the domestic and foreign markets. In a competitive environment, the upgradation of skills becomes a critical factor and the appropriate supply response would be forthcoming if the labor force is exposed to 'skill development' beforehand itself. In this context, vocational education plays a key role.

Vocational training is broadly defined as training which prepares an individual for a specific vocation or occupation. The aim is to impart training through 'hands-on' experience in necessary skills required for a specific vocation or trade, which makes a person employable or creates employment opportunities for her/him. The share of the labor force that has had formal vocational training is around 5 percent, far lower than that in many of the developed and developing countries. Even among those trained, the types of skills imparted have not kept pace with the changing business environment of the post-liberalization era.[2]

Until 2001, there was no significant development in the Mid-day Meal (MDM) scheme and it was limited to providing dry rations (uncooked food) in most states.[3] With Supreme Court orders and the political will of various states, hurdles were gradually removed. Today, MDM has become a daily school routine across the country. It has been fairly successful, but there are areas of concern relating to infrastructure, the continuation of caste discrimination, lack of sensitivity towards women's problems, etc.[4]

Health and poverty are related. If the health care system is adequate, people will be healthy and the incidence of disease and sickness especially for women and children would be lower. As a consequence, the qualitative (energy to work) and quantitative (reduction in man-days lost due to ill health) effects are expected to be positive. Also, if health expenditure is

reduced, income available for other 'necessaries' (food, clothing and shelter) is expected to be higher.

Human development is a process of enlarging people's choices. The most critical choices that lead to a long and healthy life are to be educated and to enjoy a decent standard of living.[5] It is also possible that poor health results in people's income being reduced.[6]

One can quote Jeffrey Sachs at this point, '…the National Health Mission is a transformative idea, and I would want that the public spending on healthcare is raised to even 5 percent of the GNP ($40 per person)'.

Macro Analysis

The Planning Commission estimates that the cost to the country of the Employment Guarantee Scheme is around Rs 25,000 crore, around 1 percent of the GDP. Hence, the cost is not as exorbitant as claimed by critics of this scheme.[7] Social sector expenditure (center and state government combined) as a percentage of total expenditure for the periods 2001–2002, 2002–2003, 2003–2004, 2004–2005, 2005–2006 and 2006–2007 is 21.4, 20.6, 19.7, 20.4, 22.0, 22.2 and 21.6 respectively.[8] Expenditure on education, health and other areas of the social sector (center and state government combined) to GDP is 3 percent, 1 percent and 2 percent, respectively,[9] which has been the trend since 2001–2002. In 2007–2008, public expenditure (center and state combined) on health, education and other areas of social expenditure as a percentage of total expenditure was 10.3 percent, 4.7 percent and 6.5 percent, respectively.[10] Budgetary provisions, trends in the expenditure incurred by the state and central governments towards poverty eradication and their impact during the Ninth and Tenth Plan periods and in the beginning of the Eleventh Plan period have been analyzed below.

Human Development Indicators: Global Scenario

In terms of HDI, India's position was 128 in 2005 which deteriorated to 134 in 2007. During this period, but the value of its HDI has improved from 596 to 612 but its HDI rank fell (Table 8.1).

TABLE 8.1 India's Global Position on Human and Gender Development

Country	Human Development Index (HDI)			HDI Rank			Gender Development Index (GDI)		GDI Rank	
	2005	2006	2007	2005	2006	2007	2005	2007	2005	2007
Norway	0.968	0.970	0.971	1	1	1	0.957	0.961	3	2
Australia	0.967	0.968	0.970	3	2	2	0.960	0.966	2	1
Sri Lanka	0.752	0.755	0.759	99	102	102	0.735	0.756	89	83

Contd

Table 8.1 *Contd*

Country	Human Development Index (HDI)			HDI Rank			Gender Development Index (GDI)		GDI Rank	
	2005	2006	2007	2005	2006	2007	2005	2007	2005	2007
People's Republic of China	0.756	0.763	0.772	81	99	106	0.776	0.770	73	75
Indonesia	0.723	0.729	0.734	107	111	111	0.721	0.726	94	93
India	0.596	0.604	0.612	128	134	134	0.600	0.594	113	114
Pakistan	0.555	0.568	0.572	136	141	142	0.525	0.532	125	124
Bangladesh	0.527	0.535	0.543	140	148	150	0.539	0.536	121	123
Nepal	0.537	0.547	0.553	142	144	144	0.520	0.545	128	119
Mozambique	0.390	0.397	0.402	172	172	172	0.373	0.395	150	145
Niger	0.330	0.335	0.340	174	182	182	0.355	0.308	155	155

Source: UNDP Human Development Report, 2007/2008 and 2009.

Ninth and Tenth Plan Expenditure in the Service Sector

For both the Ninth and Tenth Plan periods, at current prices, actual expenditure was higher than the budget outlay, the difference being 4.5 percent during the Ninth Plan period and 25.1 percent during the Tenth Plan period. At 1999–2000 prices, actual expenditure for 2002–2003, 2003–2004, 2004–2005, 2005–2006 and 2006–2007 is estimated at Rs 51,310 crore, Rs 55,023 crore, Rs 67,571 crore, Rs 81,990 crore and Rs 99,239 crore, respectively. The budget outlay at 1999–2000 prices works out to Rs 3,12,965 crore. Therefore, total expenditure for the five years ending in 2006–2007 at 1999–2000 prices is Rs 3,55,133 crore as against a budget outlay of Rs 3,12,965 crore. Expenditure is higher than the budget outlay by 13 percent. On similar lines, with reference to the Ninth Plan, actual expenditure at a 1999–2000 prices works out to Rs 2,04,122 crore as against the budget outlay of Rs 2,58,130. Actual expenditure is lower than the budgeted outlay by 21 percent. Between the Ninth and Tenth Plan periods, actual expenditure at 1999–2000 prices in real terms increased by 74 percent (Table 8.2).

Trends in Central Expenditure During the Tenth Plan Period

At current prices, total expenditure has steadily increased from Rs 18,240 crore in 1995–1996 to Rs 87,607 crore in 2006–2007. However, at 1999–2000 prices, total expenditure has increased from Rs 26,706 crore in 1995–1996 to Rs 65,869 crore in 2006–2007, which is an impressive average annual compounded growth of 8.6 percent (Table 8.3).

TABLE 8.2 Ninth and Tenth Plan Outlays: Service Sector (Rs crore)

Plan	Social Services	Education	Medical and Public Health	Family Welfare	Housing	Urban Development	Other Social Services
Ninth Plan Outlay1997–2002	183273	A	A	A	A	A	A
Annual Plan (Actual)							
1997–98	26,867	7,657	2,642	1,822	2,118	2,944	9,685
1998–99	38,738	9,684	5,412	2,343	3,143	2,821	15,335
1999–2000	38,439	10,000	3,569	2,969	3,516	2,823	15,563
2000–2001	40,920	11,691	4,055	3,200	3,588	3,143	15,242
2001–02	46,474	10,808	4,409	3,614	6,675	5,260	15,709
Total	1,91,438	49,839	20,086	13,948	19,040	16,992	71,534
% Diff. Actual over budget	4.5						
Tenth plan outlay 2002–2007	3,47,391	A	A	A	A	A	A
Annual Plan (Actual)							
2002–03	56,954	11,603	4,341	3,735	7,685	6,524	23,066
2003–04	62,726	13,069	4,649	4,230	8,476	6,704	25,597
2004–05	79,734	18,528	6,182	4,770	12,364	7,159	30,730
2005–06	1,03,308	25,586	8,509	5,400	12,776	9,758	41,278
2006–07	1,31,988	32,577	11,560	7,359	14,856	14,966	50,669
Total	4,34,710	1,01,364	35,241	25,494	56,158	45,112	1,71,341

Note: 'A'= Ninth Plan Tenth plan allocations were made at a broader sector level.

Source: Economic Survey 2006–07, Government of India.

TABLE 8.3 Central Expenditure (Plan and Non-plan) on Social Services and Rural Development (Rs crore)

Social Service	1995–96	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07
Education, Sports, Youth Affairs	3,630	8,642	9,885	10,928	13,985	18,018	23,530
Health & Family Welfare	2,542	5,977	6,521	7,195	8,191	9,988	12,941
Water supply, Housing, etc.	1,756	5,989	6,815	7,892	9,023	9,759	10,375
Information & Broadcasting	596	1,284	1,395	1,300	1,319	1,557	1,594
Welfare of SC/ ST and OBCs	800	1,093	1,152	1,132	1,322	1,482	1,763
Labor & Employment	507	847	771	883	1,002	1,262	1,478
Social Welfare & Nutrition	1,270	2,620	2,372	2,434	2,580	3,799	4,673
North-Eastern Areas	–	–	–	–	–	7,884	9,571
Other Social Services	530	2,010	438	713	1,701	2,220	802
Total	11,631 (63)	28,462 (72)	29,349 (63)	32,336 (66)	39,123 (73)	55,969 (75)	66,727 (76)
Rural Dev.	6,609	6,241	11,960	12,226	9,514	14,250	15,654
PMGY		2,533	2,600	2,400	2,766	–	–
PMGSY		2,500	2,500	2,325	2,461	4,220	5,226
Grand Total	18,240	39,736	46,409	49,287	53,864	74,439	87,607

Notes: PMGY: Pradhan Manttri Gramodaya Yojana, discontinued since 2005–2006; figures in the parentheses are the percentage share of social service.
Source: Budget documents, table taken from Economic Survey 2006–2007

Central and State Expenditure (Combined) During the Tenth Plan Period

At current prices, expenditure has increased over the years for all the sub-sectors. The compound annual growth rate for the five years ending in 2006–2007 was 11.7 percent for education, 14.5 percent for health and 26 percent for others. At 1999–2000 prices the corresponding growth rates were 6.6 percent, 9.8 percent and 7.6 percent, respectively. Relatively, real expenditure on health appears to have registered a higher growth rate compared to education.

TABLE 8.4 Trends of Social Sector Expenditure by Central Government (Center and State Government Combined)

Item	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Total Expenditure (Rs crore)	645	705	796	870	1,010	1,115	1,296
Expenditure on social sector (Rs crore)	138	145	157	177	222	248	289
Education (Rs crore)	68	73	77	86	103	118	128
Health (Rs crore)	29	31	35	39	50	57	61
Others (Rs crore)	41	41	45	52	69	73	100,
As percentage of GDP							
Total Expenditure	28.26	28.77	28.85	27.82	28.3	27.19	26.19
Expenditure on social sector	6.04	5.93	5.68	5.66	6.23	6.04	5.83
Education	2.98	2.96	2.79	2.74	2.88	2.87	2.58
Health	1.25	1.28	1.26	1.25	1.41	1.39	1.23
Others	1.81	1.68	1.64	1.67	1.95	1.78	2.02
As percentage of Total Expenditure							
Expenditure on social sector	21.4	20.6	19.7	20.4	22.0	22.2	22.3
Education	10.6	10.3	9.7	9.9	10.2	10.6	9.8
Health	4.4	4.5	4.4	4.5	5	5.1	4.7
Others	6.4	5.8	5.7	6	6.9	6.5	7.7
As a percentage of Social Expenditure							
Education	49.4	49.9	49	48.5	46.2	47.6	44.2
Health	20.7	21.7	22.2	22.1	22.6	23	21.1
Others	29.9	28.4	28.8	29.5	31.2	29.4	34.7

Source: Budget Documents of Union and State Governments, and RBI table taken from Economic Survey 2009–2010

Expenditure on the social sector as a percentage of GDP was around 10 percent during the entire Tenth Plan period. Among the sub-sectors, the percentage of education, health and others was 10.6, 4.4 and 6.4, respectively (Table 8.4).

Department-wise Budget During the Tenth Plan Period

Trends in the budget allocation for rural development from 2005–2006 to 2008–2009 are presented in Table 8.5. For the purpose of analyzing the trend the expenditure figures have been deflated using an appropriate price deflator. The budgetary expenditures have been expressed at 1999–2000 constant prices.

The share of departments of rural development, sanitation and water supply and land development in total expenditure has more or less remained the same during 2005–2006 and 2008–2009. At 1999–2000 prices the annual average growth rate of the total expenditure, between 2005–2006 and 2008–2009, works out to 14.3 percent. A growth of real expenditure at 14 percent per year is impressive. However, the subsequent analysis shows that the achievements are not so impressive.

TABLE 8.5 Department-wise Budget for the Different Periods: 2005–06, 2006–07, 2007–08 and 2008–09 (Rs crore)

Department	2008–09	2007–08*	2006–07	2005–06
Rural development	31,524 (74)	28,523 (76)	24,026 (76)	22,163 (78)
Sanitary and water supply	8,501 (20)	7,462 (20)	6,000 (19)	4,751 (16)
Land development	2,404 (6)	1,404 (4)	1,418 (5)	1,399 (4)
Total	42,429 (100)	37,389 (100)	31,444 (100)	28,313 (100)
Total (at 1999–2000 prices)	29,629	27,492	22,612	23,893

Figures in parenthesis are column percentages.
Notes: * Price deflator determined based on past trend.
Source: Ministry of Rural Development.

Impact on Poverty Reduction of Expenditure on Social Service

In this section, the elasticity of poverty reduction (PR) on expenditure on social services and the poverty ratio has been compared between two distinct periods, 1983 to1993–1994 and 1993–1994 to 2004–2005. Elasticity is defined as: the percentage change in PR/percentage change in expenditure by the center and states on social services at 1999–2000 prices.

For both periods, elasticity is less than 1. However, elasticity of PR with respect to expenditure falls steeply in the latter period. This suggests that the efficiency of the delivery mechanism has come down over the years.

Interestingly, the MIMAP report had indicated that '…one of the problems with anti-poverty programs is their multiplicity and poor implementation'.[11] The present analysis suggests that the problem of poor implementation has become more acute over the years.

TABLE 8.6 Expenditure (at 1999–2000 prices) in Social Services and Poverty Ratio

Period	Expenditure (Rs crore)	Poverty Ratio (PR percent)	Expenditure Percent Change Over Previous Period :	PR Percent Change Over Previous Period :	Elasticity
1983	14,203	44.5	62		
1993–94	22,978	35	194	21.3	0.34
2004–05	67,571	27.5	72	21.4	0.11

Source: Planning Commission and Employment Survey.

Education Sector: Indicators of Progress and Programs

The Theory of the Case

Education enhances economic opportunities, especially for poor households, thus leading to poverty reduction. Conceptually, school education takes place during childhood/adolescence and its impact is known after a considerable period of time, when the person concerned is qualified for employment based on the acquired education. At the macro level, therefore, the focus is on erasing the intergenerational transmission of poverty. While measuring the impact, one has to distinguish between education's impact on income and vice-versa. A key methodological issue is to separate the causal influence of qualification on earnings from the fact that individuals with particular characteristics may enroll in certain types of education.[12] 'There is a need to distinguish between higher earnings that are observed for better educated workers and individuals with greater earning capacity choosing to acquire more education.[13] It is also important to ask the question of whether the maginal returns of education on earnings for the identified sub-group (BPL population) are higher than the average returns for the population as a whole.

Harmon and Walker,[14] by using the compulsory increasing school-leaving age in 1947 and 1973 in UK estimated a return of 15 percent for an additional year of schooling for men between 46 and 53 years of age . This is relevant for the economically disadvantaged group since it is this group which is mostly unlikely to pursue education beyond the school-leaving age. According to Card,[15] the return to education through intervention in the school system is more than 20 percent of the previous estimates. One plausible explanation is that the marginal return to schooling for certain sub-groups

of the population—particularly those sub-groups whose schooling decision is mostly affected by structural innovations in the schooling system—is somewhat higher than the marginal returns to the population as a whole. A study by Derden et al[16] reveals that men and women from low-income families, who drop out at the age of 16, would have enjoyed substantial returns if they had stayed on.

Oxaal[17] notes that '[i]nvestment in Education as a poverty reduction strategy that can enhance skills and productivity among poor households'. The Human Capital theory further asserts that education creates skills which facilitate higher levels of productivity among those who possess them as compared to those who do not possess them. There exists empirical evidence of the above assertion, which points to the positive relationship between wages and salaries received at work. However, social economists argue that employers value non-cognitive values (individual traits developed from cultural and family background, etc.) inculcated at different levels of the education system. Education is thus judged to be responsible for reproducing social hierarchy of the society rather than enhancing the productive skills of the employee.[18] Therefore, the concept that education by itself is the source of enhanced individual productivity has been contested. This debate is confined to the formal sector where people are hired into occupational hierarchy and further progress is based on skills and ability. However, in the context of the informal sector (self-employmed, peasants etc.), it has been shown that primary schooling helps to increase productivity. Thus, the earnings of self-employed people are higher if they are educated. The Human Capital theory can also be interpreted as: an effective anti-poverty strategy that would enhance education which in turn would increase productivity in the informal sector and also increase eligibility for paid employment in the formal sector. Appleton[19] has shown that each year of primary schooling is associated with a 25.5 percent fall in poverty level and that lower secondary leaving has twice the same effect. Thus, the overall impact of education in poverty reduction is significantly positive.

The policy conclusions of the Human Capital approach are reflected in the World Bank approach to poverty reduction. In this context the Bank explicitly states that education—especially basic (primary and lower secondary) education—'helps reduce poverty by increasing the productivity of the poor, by reducing fertility and improving health and by equipping people with skills they need to participate fully in economy and society'.[19] The World Bank argues that there are high rates of return for investment in basic education in developing countries and that public spending on primary education favors the poor and disadvantaged groups.

The Probit Analyses reveal that educational attainment is the single most important poverty reducing factor in Paraiba, Brazil.[20] Other studies

for Brazil as a whole like Ferreira, Lanjouw and Neri[21] reveal that the level of education was a major factor determining the likelihood that a household would experience poverty. In the World Bank Study,[22] the status of the household—poor or non-poor—is regressed on relevant individual and household characteristics using the Probit regression technique. At all levels, from primary to tertiary, education is seen to reduce the probability of being poor.

Education indicators

Level of Illiteracy: Inter-country Comparison

In India the level of illiteracy is 39 percent, much higher than the world average of 20.6 percent.

TABLE 8.7 Percentage of Adult Illiterate Population

Country	Percentage
World	20.6
Afghanistan	63.7
Bangladesh	59.2
China, People's Republic of	15
India	39
Indonesia	13
Japan	15.3
Myanmar	58.6
Nepal	15.3
Pakistan	56.7
Sri Lanka	8.4
Thailand	4.4

Source: World Development Indicator database, World Bank 2004.

Growth of Elementary Schools

During 1990–1991 and 2004–2005, there was a spurt in elementary schools. For primary as well as upper-primary schools, growth has accelerated since the 1990s; growth has been even steeper for middle schools but the period 2004–2005 to 2007–2008 has registered a deceleration in the growth rates of both primary and middle schools.

TABLE 8.8 Growth of Primary and Middle Schools

Year	Primary		Upper Primary	
	Number	Compound Average Annual Growth Rate (percent)	Number	Compound Average Annual Growth Rate (percent)
1990–91	5,60,935		1,51,456	
1995–96	5,93,410	1.1	1,74,175	2.8
2000–01	6,78,738	2.7	2,06,629	3.5
2004–05	7,67,520	3.1	2,74,731	5.9
2007–08	7,85,950	0.79	3,20,354	5.25

Source: Annual Report, Ministry of Human Resource Development.

Growth of Elementary Schools by School Management

The period 1993–1994 and 2004–2005 witnessed a high growth of private-unaided schools, whose share increased from 11 percent to 21 percent. The share of government and local-body schools declined in this period. The annual growth rate in the share of private-unaided schools showed a steep increase of 43 percent between 1993–1994 and 2000–2001, and 36 percent between 2000–2001 and 2004–2005.

TABLE 8.9 Percentage of Primary and Upper Primary Schools by Management

Year	Primary			Upper Primary		
	Government and Local Body Combined	Private Aided	Private Unaided	Government and Local Body Combined	Private Aided	Private Unaided
1993–94	92.1	3.78 (-18.8)	5.37	79.45	9.53	11.02
2000–01	90.92 (-1.3)	3.07 (-16.9)	6.01 (11.9)	76.42 (-3.8)	7.81 (-18)	15.77 (43.1)
2004–05	90.21 (-0.8)	2.55	7.24 (20.5)	72.2 (-5.5)	6.41 (-17.9)	21.39 (35.6)
2007–08	86.73	5.76	7.51	73.60	9.3	17.10

Notes: Figures in parentheses are percentage growth rates in share from the previous period.

Source: Statistics of School Education 2007–08, Ministry of Human Resouce Development.

Trends in Enrollment

Both for boys and girls, enrollment has shown accelerated increase over time till 2004–2005. It is encouraging to note that for both primary and upper primary levels, the growth rate in enrollment has been steeper for girls compared to boys. But, surprisingly, enrollment rates have fallen for both girls and boys for time period from 2004–2005 to 2007–2008 which is not a good sign.

TABLE 8.10 Enrollment by Stages in Different Time Periods (millions)

Year	Primary			Upper Primary		
	Boys	Girls	Total	Boys	Girls	Total
1990–91	57.0	40.4	97.4	21.5	12.5	34.0
1995–96	60.9 (1.3)	46.2 (2.7) (1.5)	107.1 (1.2)	22.7 (1.1)	14.8 (3.4)	37.5 (2.0)
2000–01	64.0 (1.0)	49.8 (1.5)	113.8 (1.9)	25.3 (2.2)	17.5 (3.4)	42.8 (2.7)
2004–05	69.7 (2.2)	61.1 (5.2)	130.8 (3.5)	28.5 (3.0)	22.7 (6.7)	51.2 (4.6)
2007–08	71.3 (0.76)	64.8 (1.98)	136.2 (1.36)	30.7 (2.51)	26.1 (4.76)	56.8 (3.52)

Notes: Figures in parentheses are the annual average compound growth rates over the previous period.
Source: Annual Report, Ministry of Human Resource Development.

Trends in Enrollment: Scheduled Castes

For Scheduled Caste (SC) children as a whole, there has been a steady growth in total enrollment, with accelerated growth in upper primary schools but this growth has registered a decline for the period of 2004–2005 to 2007–2008. For both primary and upper primary schools, the growth rate in enrollment among girls was higher than for boys.

TABLE 8.11 Enrollment by Stages of Scheduled Caste Students by Gender (million)

Year	Primary			Upper Primary		
	Boys	Girls	Total	Boys	Girls	Total
1990–91	9,737	6,057	15,794	2,747	1,413	4,160
1995–96	11,284 (3.0)	7,892 (5.4)	19,176 (4.0)	3,453 (4.7)	1,992 (7.1)	5,445 (5.5)
2000–01	12,059 (1.3)	9,136 (3.0)	21,195 (2.0)	4,066 (3.3)	2,628 (5.7)	6,694 (4.2)
2004–05	13,762 (3.4)	10,995 (5.7)	24,757 (4.0)	5,100 (5.8)	3,597 (8.2)	8,697 (6.8)
2007–08	13,732 (-0.07)	12,604 (4.66)	26,336 (2.08)	5,307 (1.34)	4,598 (8.53)	9,905 (4.43)

Notes: Figures in parentheses are the annual average compound growth rates over the previous period.
Source: Annual Report, Ministry of Human Resource Development.

Trends in Enrollment: Scheduled Tribes

Growth rate in enrollment among Scheduled Tribe (ST) girls has been consistently higher than ST boys. In fact, for ST girls accelerated growth has been observed. It is heartening to note that the compound annual growth rate was as high as 12.5 percent during the period 2000–2001 to 2004–2005. It is interesting to note that between 2000–2001 and 2004–2005 there was a sharp increase in the growth rate of ST enrollment for boys as well as girls in both primary and upper primary schools but for the period 2004–05 to 2007–2008, the growth rate of ST enrollment registered a sharp decline for both boys and girls.

TABLE 8.12 Enrollment by Stages of Scheduled Tribe Students by Gender (million)

Year	Primary			Upper Primary		
	Boys	Girls	Total	Boys	Girls	Total
1990–91	9,737	6057	15794	2,747	1,413	4,160
1995–96	5,589 (2.4)	3,826 (5.6)	9,415 (3.7)	1,448 (5.1)	837 (7.8)	2,285 (6.0)
2000–01	6,330 (2.5)	4,665 (4.0)	10,995 (3.2)	1,804 (4.5)	1,107 (5.8)	2,905 (4.9)
2004–05	7,637 (4.8)	6,369 (8.1)	13,717 (5.7)	2,395 (7.3)	1,776 (12.5)	4,171 (9.5)
2007–08	7,708 (0.31)	7,074 (3.56)	14,783 (2.53)	2,579 (2.5)	2,107 (5.86)	4,686 (3.96)

Notes: Figures in parentheses are the annual average compound growth rates over the previous periods.

Source: Annual Report, Ministry of Human Resource Development.

In this section, we make a comparative analysis of enrollment between SC, ST and other communities. It is interesting to note that in every category, the growth of enrollment among SCs and STs is higher than that for 'others'. Comparisons over time reveal that for SCs, STs and 'Others', the maximum growth in enrollment was observed between 2000–2001 and 2004–2005.

TABLE 8.13 Annual Compound Growth Rate in Enrollment of SCs, STs and Others (%)

Year	Primary			Upper Primary		
	SC	ST	Others	SC	ST	Others
1990–91 and 1995–96	4.0	3.7	1.2	5.5	6.0	2.0
1995–96 to 2000–01	2.0	3.2	1.9	4.2	4.9	2.7
2000–01 to 2004–05	4.0	5.7	3.5	6.8	9.5	4.6
2004–05 to 2007–08	2.08	2.53	1.36	4.43	3.96	3.52

Source: Annual Report, Ministry of Human Resource Development.

Gross Enrollment Ratio (GER): Boys versus Girls

The GER is higher for boys as compared to girls. In the computation of the GER, the numerator is the number of children and the denominator is the specific age group. If number of under-aged/over-aged children does not change over the years then the trends in Table 8.14 can be interpreted. However, the assumptions have to be validated.

TABLE 8.14 Gross Enrollment Ratio (GER)

Year	Primary			Upper Primary		
	Boys	Girls	Total	Boys	Girls	Total
1990–91	114	85	100	77	46	72
1995–96	97	79	89	68	50	59
2000–01	105	86	96	67	50	59
2004–05	111	105	108	74	65	70
2007–08	116	113	115	81	74	78

Source: Annual Report, Ministry of Human Resource Development.

State-wise Gross Enrollment Ratio

In this section, we look at trends in enrollment across states between 2000–2001 and 2006–2007 with respect to children belonging to elementary school (classes I–VIII), In 2000–2001, Jharkhand was a part of Bihar, Chhatisgarh was a part of Madhya Pradesh and Uttarakhand was a part of Uttar Pradesh. Therefore, for making accurate comparisons between the years 2000–2001 and 2006–2007, Bihar and Jharkhand, Madhya Pradesh and Chhatisgarh, and Uttar Pradesh and Uttarakhand are looked at as per their pre-bifurcation status.

The following observations may be recorded (Table 8.14A):

1. The states of Gujarat, Assam, Lakshadweep and Nagaland registered negative growth rate.
2. The highest CARG percentage rate has been registered in Delhi (9.57) followed by Goa (9.07) and Uttar Pradesh (8.76).
3. With reference to the year 2006–2007, the top states in terms of GER were: Meghalaya (152.8), Manipur (140), Dadar Haveli (132), Mizoram (130.2) and Madhya Pradesh (130.1).
4. With reference to the year 2000–2001, the top states in terms of GER were: Sikkim (113.26), Lakshadweep (106.4), Dadar Haveli(105.29), Gujarat (103.26) and Maharashtra (103.26).

5. Time series analyses reveal that the relative positions of states according to GER has changed over a period of time

TABLE 8.14A Gross Enrollment Ratio for 2000–2001 and 2006–2007 in Select States

State	2006–2007	2004–2005	2000–2001	CARG
Andhra Pradesh	88.1	86.99	81.87	1.23
Assam	85.9	91.92	99.54	-2.43
Bihar	74.1	67.68 *	61.35	3.2
Goa	108.3	106.04	67.99	9.07
Gujarat	103.1	101.7	103.26	-0.03
Haryana	85.2	80.01	73.13	2.58
Himachal Pradesh	111.1	108.74	91.40	3.31
Karnataka	99.9	98.76	98.41	0.25
Kerala	95.5	95.35	91.03	0.80
Madhya Pradesh	130.1	121.99 **	91.8	5.98
Maharashtra	109.0	105.7	101.05	1.27
Orissa	98.9	108.47	90.54	1.48
Punjab	76.4	72.57	73.75	0.59
Rajasthan	106.4	102.67	99.06	1.2
Sikkim	114.4	111.49	113.26	0.17
Tamil Nadu	114.4	113.96	95.01	3.14
Uttar Pradesh	90.9	87.82 ***	54.91	8.76
West Bengal	90.5	94.3	86.00	0.85
A&N Islands	104.9	94.67	88.99	2.78
Chandigarh	83.1	107.97	67.23	3.60
Dadar Haveli	132	113.7	105.29	3.84
Daman & Diu	129.7	128.85	93.03	5.69
Delhi	101.1	91.84	58.44	9.57
Lakshadweep	59.6	58.75	106.4	-9.21
Pondicherry	127.1	121.34	84.04	7.14
All India	**92.3**	**91.70**	**76.52**	**2.66**

*: Includes Jharkhand, **: Includes Chhatisgarh, ***: Includes Uttarakhand
Source: Economic Survey 2009–10, Government of India.

The states that have been performing well in terms of GER as on 2000–2001, namely, Sikkim, Lakshadweep, Dadra and Nagar Haveli,

Gujarat and Maharashtra, their performance between 2000–2001 and 2006–2007 has been low as compared to other states. The growth rates of GER of these states have been well below the national average (2.95 percent). In particular, the states of Assam, Sikkim, Lakshadweep, Dadar Haveli and Gujarat have registered a negative growth rate.

Trends in Drop-out Rates

Between 2000–2001 and 2004–2005 the drop-out rate among boys remained the same for upper primary, whereas for girls there was a decline. However, in primary schools there was a fall in the drop-out rate between 2000–2001 and 2004–2005, both for boys and girls whereas between 2004–2005 and 2007–2008, the drop-out rate for boys has declined but it is the same for girls. However, the drop-out rates have declined for both boys and girls for upper primary.

TABLE 8.15 Drop-out Rate – Primary and Upper Primary

Year	Primary			Upper Primary		
	Boys	Girls	Total	Boys	Girls	Total
1990–91	40	46	43	59	65	61
1995–96	41	43	43	56	62	59
2000–01	40	41	40	50	58	54
2004–05	32	25	29	50	51	50
2007–08	26	25	25	44	41	43

Source: Annual Report, Ministry of Human Resource Development.

Gender Parity Index

Over the years, gender parity is on the increase, which is encouraging. Another interesting aspect is that at any point in time, GPI is higher for the primary level as compared to the upper primary. There could be many factors associated with this trend. More data is required for further analysis.

TABLE 8.16 Gender Parity Index (GPI)

Year	Primary	Upper-Primary
1990–91	0.75	0.61
1995–96	0.82	0.73
2000–01	0.82	0.75
2004–05	0.95	0.88
2007–08	0.98	0.92

Source: Annual Report, Ministry of Human Resource Development.

TABLE 8.17 Pupil-Teacher Ratios (PTRs)

Year	Primary	Upper-Primary
1990–91	43	37
1995–96	43	37
2000–01	43	38
2004–05	46	35
2007–08	46	35

Source: Annual Report, Ministry of Human Resource Development.

During the first three years under consideration, PTRs are constant. In 2004–2005, the PTR increased from 43 to 46 for primary schools and declined from 37 to 35 for upper primary schools and has remained at these levels for the year 2007–2008 also.

The Programs in the Education Sector

Sarva Siksha Abhiyan (SSA)

Sarva Siksha Abhiyan (SSA) is an effort to universalize elementary education with community ownership of the school system. It is a response to the demand for quality basic education and it includes supervision with accountability to the local community in the elementary school system (Department of School Education and Literacy, Department of Higher Education, Ministry of Human Resource Development, Government of India). Launched in 2001–2002, it is the largest program ever initiated on literacy, and a follow-up to the National Policy on Education (NPE) 1986, which was modified in 1992 and the broad objectives of which were to play an interventionist role in correcting social imbalances and empowering women, the socially disadvantaged and the minorities.

The goals of SSA are to:

- Cover all children in the 6–14 age group;
- Bridge all gender and social gaps at the primary education stage by 2007 and secondary stage by 2010;
- Focus on the quality of elementary education with an emphasis on education for life; and
- Have universal retention by 2010.

The SSA focuses on community mobilization, school infrastructure, girls' education, ensuring access and equity, inclusive education, and improving quality.

Community Mobilization

- Decentralized and community ownership of schools.
- A community-based approach: planning at the habitation level and monitoring at the school level.
- Schools as social institutions of the community where participation of community takes place through school-based activities.

School Infrastructure

Around 33 percent of the funds invested in a district are for infrastructure which includes innovative use of design, technology as well as school buildings, drinking water facilities, boundary walls, etc., all of which takes place through the local bodies.

Girls' Education

SSA intends to make the education system responsive to the needs of the girls through targeted intervention (pull factor to enhance access and retention of girls) and generate community demand for girls' education through training and mobilization. This would entail a strategic shift in educational planning: targeting female literacy pockets and reducing gender disparity and making special efforts to bring out-of-school girls, especially disadvantaged children, to school.

Ensuring Access and Equity

- Education incentives provided for socially disadvantaged groups such as SC, ST, and minority community as well as the girl child to offset the cost of education.
- Encouraging inclusive education.
- Aims at ensuring that every child with special needs irrespective of the kind, category and degree of disability is provided education in an appropriate environment.

Improving Quality

- To ensure quality education SSA provides support for teacher recruitment, and training, curriculum, textbook renewal, development and distribution of teaching and learning material, annual school grants and pupil assessment systems, etc.

Special Features

Provisions have been made to meet the special needs of children and institutions. These are mentioned below:

Education Guarantee Scheme and Alternative and Innovative Education (EGS and AIE)

- Educational facilities are set up in habitations with no primary school within a 1 km radius.
- EGS is a transitory facility untill a permanent school replaces it in two years.
- The formal curriculum is taught in the classroom.
- Free textbooks and mid-day meals are made available to enrolled children.
- The schools are run by local community bodies: Parent-Teacher Associations, Village Education Committees, Gram Panchayats.

Flexible strategies such as residential and non-residential bridge courses, back-to-school camps, seasonal hostels, drop-in centers, etc. have been devised for the education of children who cannot be directly enrolled in a school or EGS center:

National Program for Education of Girls for the Elementary Level (NPEGEL)

This scheme was launched in September 2003 and it has additional provisions for enhancing the education of underprivileged and disadvantaged girls.

Kasturba Gandhi Balika Vidyalaya (KGBV)

The scheme was launched in July 2004 to encourage girls' education at the upper primary level. 2,075 residential schools at the upper primary level have been sanctioned for girls belonging to the SC, ST, OBC and minority communities in educationally backward blocks which have high gender gaps and low female literacy. A minimum of 75 percent of the seats are reserved for girls from marginalized or minority community and the rest is for girls from BPL families.

Public–Private Partnerships

Several states have entered into partnerships with NGOs and civil societies. Examples of public–private partnerships are: the Learning Guarantee Program (with the Azim Premji Foundation in Karnataka), Reading Promotion Programs (with Pratham in Bihar), Capacity Building of Teacher Educators (Nandi Foundation in Andhra Pradesh), Resource Enhancement Program (with Digntar Ekalavya Vidya Society, Delhi University, in Uttar Pradesh, Haryana, Himachal Pradesh, Bihar, Jharkhand, Orissa), and the Computer-aided Learning Program (in Assam and Sikkim).

Evaluation

Micro studies reveal that in critical areas there has been a steady progress, as seen from the key indicators (Table 8.18).

EGS and NPEGEL

Till September 2009–2010, 25,961 EGS centers were functioning, with an enrollment of around 23.24 lakh children in 2009–2010; 1,06,136 EGS centers were upgraded to primary schools by September, 2009–2010.

Coverage of the NPEGL has increased during the last three years in terms of the number of blocks, clusters and funds allotted for the purpose (Table 8.19).

TABLE 8.18 Education: Achievements under Different Activities

Activities	Achievement
Access	99 percent of the rural population has a primary school within 1 km. 300895 new schools opened till December 2009
Gross Enrollment Ratio	Gross Enrollment Ratio GER increased in 6–14 age group to 114.61 in 2007–08 from 96.3 in 2001–02 at the primary level and to 77.50 in 2007–08 from 60.2 in 2001–02 at the upper primary level. (SES)
Gender Parity Index	Gender Parity Index (GPI) Improved from 0.83 in 2001–02 to 0.98 in 2007–08 at primary level & from 0.77 to 0.92 at upper primary level. (SES)
Drop-out rate at primary level	Reduced by 13.48 percent to 25.55 percent in 2007–08 from 39.03 percent (2001–02). Dropout rate for girls declined by 15.06 percent points. (SES)
Pupil-teacher ratio	2007–08 the PTR at the national level was 46:1 for primary and 35:1 for upper primary level. 10.22 lakh teachers were recruited by December 2009.
Enrollment of children with special needs	29.57 lakh children identified and 24.77 lakh children (83.78 percent of those with Special Needs identified) enrolled in school by 2009–10

Source: Annual Report 2009–10, Ministry of Human Resource Development.

TABLE 8.19 NPEGL: Coverage 2004–05 to 2006–07

	2004–05	2005–06	2006–07
Blocks	2,157	3,164	3,122
Clusters	19,575	28,917	38,748
Funds allotted (Rs Crore)	653.90	686.54	813.36

Source: Annual Report, Ministry of Human Resource Development.

Infrastructure Allocation

The SSA has identified over 399 districts with high SC population (61 districts), high ST population (109 districts) and high Muslim population (88 districts) for the period of 2009–10. Infrastructure allocations in these Special Focus Districts are presented in Table 8.20.

TABLE 8.20 Social Infrastructure Allocations 2009–10 (Rs in lakhs)

Heads	Total SSA Sanction	In Special Focus Districts	Percent in Special Focus Districts
Primary school	9,404	6,600	70
Upper-primary school	12,015	9,912	82
Classrooms	1,26,556	92,736	73
Teachers	52,369	38,716	74

Source: Annual Report, Ministry of Human Resource Development.

Students' Learning and Achievement Surveys

For designing quality improvement plans at the state level, there should be an appropriate base as a starting point. Inputs provided by the NCERT base-line survey completed in 2005–2006 could be used for this purpose. The findings of the survey reveal that the mean achievement in languages, mathematics and EVS were 59 percent, 47 percent and 50 percent respectively (in class V); the mean achievement in mathematics and language was 58 percent and 63 percent respectively (in class III); the mean achievement in mathematics, language, science and social science was 30 percent, 53 percent, 36 percent and 33 percent respectively (in class VII); and the mean achievement in mathematics, language, science and social science was 38 percent, 52 percent, 41 percent and 45 percent respectively (in class VIII).

Quality of Education

Growth in enrollment and decline in drop-out rates are the major indicators determining the development of education. Apart from socio-economic factors, the quality of education influences the growth in enrollment and decline in drop-out rates. The quality of education is essentially a supply-side factor and while studying its impact through empirical research, the demand-side factors have to be netted out. Netting out the demand-side factors is a complex exercise. However, the impact of a particular factor in relation to other factors can be estimated (on the assumption that demand-side factors remain the same for all factors). Relatively speaking, the impact of public expenditure on drop-out rates is higher than on enrollment rates and the impact on pupil-teacher ratios is the highest.[23]

The quality of education in India is poor and one of the main factors contributing to this is the quality of teaching. Inter-state disparities in education are attributable to the quality of education. These disparities have been more obvious at the primary level.[24] Identifiable parameters for analyzsing the quality of teaching are: teacher–student ratio, percentage of trained teachers, percentage of female teachers and percentage of schools with two or more teachers.[25] A development index for the quality of teaching can be generated to explain inter-state and rural–urban variations and, based on these variations, states can be ranked according to the development index, where through Principal Component Analysis, weights are assigned to different factors.[26] In other words, for the purpose of policy decisions, identified parameters can be targeted to attain a given level of development in education.

Areas of Concern

Recent studies have revealed that girls' participation has improved during the last decade, but according to UNESCO's *Global Monitoring Report* progress has not been sufficient in terms of gender parity and equality. As enumerated earlier, many schemes have been launched to increase the participation of girls in schooling. However, at the macro level, the desired results have not been achieved since the problem is too widespread and there are still several pockets with a wide gender gap. Within the BPL category, a large majority of illiterate people (87 percent) are in the rural areas. Thus, eradication of illiteracy needs to be conducted in a decentralized manner especially in the rural areas, by implementing policies through the Panchayati Raj institutions. Lower literacy rates among females in the BPL category could be an indication of improper targeting of the schemes. This trend is more pronounced among SCs and STs. The literacy rate in the BPL category across the country was 47.2 percent, 30 percent lower than the APL category.[27]

A major identifiable contributor to this situation is the inaccessibility of schooling facilities, and the solution lies in adding to the number of schools. However, the basic issue is the social factor and SSA does not appear to be equipped to tackle this. SSA should go beyond its functionary role. One cannot isolate SSA from the educational administrative process, which is too bureaucratic. The priorities of the government need to change to introduce some dynamism in the system, which involves active participation from the community and the implementing agencies.

Parents' education also makes a difference to the rate of child survival in school. Even today, we find a significant number of guardians of students, especially from the underprivileged sections of society, who do not value primary education and feel that returns from primary education are low. The all-India picture shows that when the head of the family has more than 12 years of schooling, it leads to a 100 percent child survival rate.[28]

Three factors may be pointed out as particularly influencing attendance behavior:[29] type of school, the education level of the female guardian, and per capita income of the family. Estimates based on regression analysis reveal that among slum dwellers, the lower the per capita income level, the more regular is the ward's attendance. This implies that food rations to poor children is a motivating factor for their parents to send their children to school. Furthermore, schools with better infrastructure (Kolkata Primary School Council) have better attendance.

Vocational Training

Vocational training is broadly defined as training which prepares an individual for a specific vocation or occupation. The aim is to impart training through 'hands-on' experience in acquiring skills in a vocation or trade, which makes them employable.

Formal Vocational Training

Classroom lectures are given in education or training institutions and are followed by a structured training program. After successful completion of the program, the trainee is awarded a certificate, diploma, or degree recognized by the state or central government, or public sector and other reputed concerns. Such training is referred to as formal vocational training. The NSSO 61st Round (July 2004–June 2005) collected comprehensive data on the status of educational and vocational training in the country (see Table 8.21).

TABLE 8.21 People Receiving Formal Vocational Training by Age (Number per Thousand)

Category of persons	Age Group				
	15–29	20–24	15–24	25–29	15–29
(1)	(2)	(3)	(4)	(5)	(6)
Rural					
Male	5	21	12	23	15
Female	7	15	11	16	13
Persons	6	18	11	19	14
Urban					
Male	19	72	45	69	52
Female	18	63	40	55	45
Persons	18	67	43	63	49
Rural + Urban					
Male	9	36	21	37	26
Female	10	28	19	26	21
Persons	9	32	20	32	24

Source: NSSO 61st round (July 2004–June 2005); table on the 'Status of Educational and Vocational Training in India'.

Types of Formal Vocational Training

The NSSO SURVEY also provides information on the distribution of trained persons (in VT) across various available 'areas' or 'fields', such as:

Mechanical Engineering Trades, Electrical and Electronic Engineering Trades, Computer Trades, Civil Engineering and Building Construction Related Works, Chemical Engineering Trades, Leather-Related Work, Textile-Related Work, Catering, Nutrition, Hotels and Restaurants-Related Work, Artisan/Craftsman, Handicrafts and Cottage-Based Production Work, Creative Arts/Artists , Agriculture and Crop-Related Skills and Food Preservation-Related Work, Non-Crop-Based Agricultural and Other Related Activities, Health and Para-Medical Services-Related Work, Office and Business-Related Work, Driving and Motor Mechanic Work, Beautician, Hairdressing and Related Work, Tour Operators/Travel managers, Photography, Childcare, Nutrition, Pre-School and Schools and Crèches, Journalism, Mass Communications, and Media-Related Work, Printing Technology Related Work and Others.

Category	Field
Rural Male	Computer Trade (21 percent), Electrical and Electronic Engineering Trade (19 percent), Driving and Motor Mechanic Work (17 percent) and Mechanical Engineering Trade (13 percent)
Rural Female	Textile Related Work (31 percent), Computer Trade (21 percent) , Others (13 percent) and Health and Paramedical Related Work (10 percent)
All Persons (rural)	Computer Trades (21 percent), Textile-Related Work (15 percent), Electrical and Electronic Engineering Trades (11 percent) and Others(11 percent)
Urban Male	Computer Trade (37 percent), Electrical and Electronic Engineering Trades (17 percent), and Mechanical Engineering Trade(10 percent)
Urban Female	Computer Trade (39 percent), Textiles-Related Work (18 percent) and Health and Paramedical Related work (9 percent).
All Persons (urban)	Computer Trades (38 percent), Electrical and Electronic Engineering Trades (11 percent
Male (rural +urban)	Computer Trade (30 percent), Electrical and Electronic Engineering Trades (18 percent) and Driving and Motor Mechanic Work (12 percent)
Female (rural + urban)	Computer Trade (31 percent), Textile Related Work (23 percent) and Others (10 percent)
All Persons (rural + urban)	Computer Trade (31 percent), Textile Related Work (12 percent) Electrical and Electronic Engineering Trades (11 percent)

Source: NSSO 61st round (July 2004–June 2005); table on the 'Status of Educational and Vocational Training in India'.

Institutions for Formal Vocational Training

The NSSO survey also provides information on the training of persons in specific institutions imparting such training. The distribution of persons trained in such institutions is given below.

List of institutions: Industrial Training Institutes/Industrial Training Centers, School offering vocational courses, UGC, Polytechnics, Community Polytechnic/Jansikshan, Hotel Management, Food Craft and Catering Institutes, Small Industries Service Institutes/District industries centers/Tool Room Centers, Fashion Technology Institutes, Tailoring, Embroidery and Stitch Craft Institutes, Nursing Institutes, Rehabilitation, Physiotherapy/Ophthalmic/Dental Institutes, Institutes giving diplomas in Pharmacy, Hospital and Medical Training Institutes, Institutes offering training for Agricultural Extension, Training provided by Carpet Weaving Centers, Handloom/Handicraft/Design Training Centres/KVIC, Recognized Motor Driving Schools, Institute for Secretarial Practices, Recognized Beautician Schools, Institutes run by Companies/Corporations, Institutes for Journalism and Mass Communication and other institutes.

Category	Institutions
Rural Male	Industrial Training Institutes (35 percent), Other Institutes (26 percent) and recognized Motor Driving Schools (13 percent)
Rural Female	Other Institutes (31 percent), Tailoring, Embroidery and Stitch craft Institutes (24 percent)
All Persons (rural)	Other Institutes (28 percent), Industrial Training Institutes (23 percent) and Tailoring, Embroidery and Stitch Craft Institutes (11 percent)
Urban Males	Other Institutes (41 percent) and Industrial Training Institutes (25 percent)
Urban Females	Other Institutes (45 percent), Tailoring, Embroidery and Stitch Craft Institutes (14 percent)
All Persons (urban)	Other Institutes (43 percent) and Industrial Training Institutes (17 percent)
Male (rural + urban)	Other institutes (35 percent) and Industrial Training Institutes (29 percent)
Female (rural +urban)	Other Institutes (39 percent) and Tailoring, Embroidery and Stitch Craft Institutes (18 percent)
All Persons (rural + urban)	Other Institutes (36 percent), Industrial Training Institutes (20 percent)

Source: NSSO 61st round (July 2004–June 2005); table on the 'Status of Educational and Vocational Training in India'.

Need for Vocational Training

In an intensely globalized and competitive market, the survival and growth of both small and large units are critically dependent on their modernization and technological upgradation. Even the informal sector which absorbs a large number of poor, needs technically upgraded skilled labor in such a situation. Hence, in India, where poverty alleviation is one of the major developmental goals, vocational training should receive due consideration.

Marketable Skills

A high percentage of the Indian population has no marketable skills (NSSO 61st round), so it is unsurprising (but also a matter of concern) that the informal sector for all practical purposes is left to its own devices. Only 5 percent of the Indian workforce in the age group of 20–24 years has received any vocational training (Second National Commission on Labour, Government of India 2002). Comparisons with other countries are made in Table 8.22.

TABLE 8.22 Vocational Trained People (aged 20–24 years)

Country	Percentage
India	5
Developed Countries	60–80
South Korea	96
Botswana	22
Mexico	28
Peru	17

It is obvious that India has lagged far behind other countries including other developing countries in the supply of vocationally trained people. A poverty alleviation strategy clearly lies in the development of rural industry, so the thrust on VT should go beyond industrial cities and cover rural areas.

Export-related Training

An increased inflow of FDI has led to a greater share of gross capital formation in all industries including the manufacturing industries, particularly evident in developing countries. This served to intensify the competition in national as well as international markets for small firms. Furthermore, India as a member of WTO has done away with quantitative and non-quantitative restrictions, which has further exposed it to stronger international competition which, in turn, has put more pressure on SSIs in the export market. These developments generate a demand for exports. Workers need to acquire new skills to work on plant and machinery that have been technologically upgraded.

Capacity Building: Human Resources

Demand by the industry for labor needs to match the supply of human resources. Therefore, there is a need to know the industry demand in the various fields and the demand for skills for a specific field. The supply of

human resources should match both the components of industry demand, that require structural changes in the courses in the various institutions and their curricula. Currently, no database is available on industry demand especially in the SSI and informal sectors. The government could commission reputed agencies to assess this demand, and the findings should form the basis for rescheduling the curriculum. The next step is to train the unemployed among vulnerable sections of society so that they can acquire the required skills as part of the capacity-building process. This issue is very pertinent for the future, where the growth in the demand for 'self-employment' as a result of various government employment generation programs is expected to outstrip the growth in the demand for 'wage employment'.

The Labor Market Information System (LMIS)

Currently, there is hardly any information at the macro level with regard to the labor market. Hence, there is a need to develop a Labor Market Information System. The LMIS will help in developing linkages with the community, access the qualitative dimension of skilled workers, and drop-out rates in the formal and non-formal streams.[30] Data generated from the 'base line survey' as suggested above could form the basis for developing a LMIS. The management of the LMIS should be assigned to reputed agencies to ensure that matching of the demand and supply of skill requirements takes place on a continuous basis.

Training of Trainees

Workers have to develop modern skills in tune with technological up-gradation. It is of prime importance that trainers themselves should not only be well-versed with modern skills but also proficient in the art of imparting skills to workers at large. India's expertise in the adaptation of 'software' is universally accepted. One can also explore the possibilities of application of various kinds of software.

Public-Private Partnerships

Collaborative partnerships are needed between the public and private sectors to achieve any success in the sphere of vocational training. In a post-globalized world, the private sector is expected to financially support the initiatives of the government in providing vocational training in its own interest. In fact, the Indian private sector ITIs have performed better than those managed by the government.[31]

Policy Framework

In India, training institutes are run by both by the central and the state governments (as well as the private sector). Vocational training education comes under the Ministry of Human Resource Development (HRD), whereas vocational training is looked after by the Ministry of Labor, and there are problems of coordination between the two.

Evaluation of the Vocational Training Initiatives

The craftsman training and apprentice training schemes are the main sources of supply of technical skills. But employers feel that the skills acquired by workers are outdated and barely relevant to industry, and trainees are used as cheap labor and paid only token amounts as apprenticeship allowances.[32] Currently, the Craftsman Training and Apprentice Training Schemes are running below the expected levels because of poor administration, a Central Apprenticeship Council that has not met for years and the absence of a regulatory authority to set standards of competitive conditions in the informal sector.[33]

Role of the Private Sector

Statistics on health and education reveal that benefits have not percolated down to the grassroot levels. Both the demand and supply of these services involve complex issues. The task is gigantic and complex, and calls for a dynamic approach and possibly not a bureaucratic one. Partial liberalization could infuse much-needed dynamism into the system. In this context, the role of the private sector has been examined in this section.

The accepted view is that governments and bilateral and multilateral agencies typically work towards the goal of education for all. This is based on the assumption that the poor cannot afford private schools, so their only choice is public schooling. It implies that the vast majority should not be allowed to make such choices (e.g. WEST CENT 1994). Some researchers have contested this assumption. Their seemingly controversial stand is based on their belief that private schools have certain features that render them superior to government-provided and funded schools. The vital question is what are these distinct features? Are they significant enough to offset the provision of public schools? If yes, in what proportion of private schools are such features in evidence? Lastly, if these private schools are limited in number, is it feasible to substantially increase their number and what would be the policy implications of any such action?

Numerous studies across developing countries have revealed that private schools are more effective educationally, even when posing constraints in

terms of socio-economic factors and the school selection bias, or possible bias, of parents who choose private schools for their more motivated children. The World Bank studies in Thailand, Columbia, and Tanzania reveal the proportional increase in achievement score if a randomly selected student, with the characteristics of an average public school student, was to attend a private instead of public school, holding constant the student's socio-economic background. In Columbia, the results showed that private schools were 1.13 times more effective than public schools for mathematics and verbal combined. In the Dominican Republic, the private school was rated 1.5 times more efficient in mathematics; the relevant figure was 2.63 in Thailand. The cost per student was compared between private and public schools to find out whether private schools had more resources, which thereby contributed to higher scores. In fact, the study revealed that the cost per student was higher in public schools. Based on these results, researchers simulated the effectiveness of private schools for a given level of resources and the results revealed that the difference varied from 1.2 times in Philippines to 5.74 times in Thailand. This showed that private schools are not only more effective in terms of educational output but also more efficient in terms of cost per student. Similar studies conducted in Lucknow revealed that students in private schools scored 30 percent higher in mathematics. Also, when the cost factor was introduced, it was seen that private schools could achieve the same results at half the cost incurred by public schools. Results not withstanding, critics have pointed to the fact that private schools predominantly serve the elite or upper-middle classes and so are irrelevant to the debate about reaching the poor.[34]

Choice for the Poor in a Competitive Environment: Public and Private Schools

Based on historical research, E. G. West[35] in his pioneering study of the origins of state education had argued that during the 1980s, without government intervention, literacy rates and enrollment rates among children in England and Wales were above 90 percent. In short, the poor could manage educationally on their own without the state, and if the market mechanism could work in the Victorian era, it should work today. His work was influential around the world. In fact, Milton Friedman, who became a leading school choice advocate, acknowledged that he had changed his mind after reading West. West's work has influenced policy makers to view the private sector's potential contribution to the universalization of elementary education.

In the Tenth Plan, the following measures have been suggested to involve the private sector in education: collaborative efforts with the private sector to improve the functioning of government schools, supporting the initiatives

introduced by private schools for deprived children, encouraging the opening of private schools without compromising on quality and using the expertise of the private sector in the area of computer education.

Past Trends

The NSSO surveys and other studies reveal that a sizeable proportion of children in the country (4.8 percent) attend non-recognized private schools.[36] The incidence is relatively high in Haryana (18.7 percent), Punjab (15.5 percent), Uttar Pradesh (10 percent) and Bihar (9.2 percent). The number of unrecognized private schools is doubling every five years.[37] Over a period of time, growth trends indicate a demand for private schools even from poor households. Thus the government needs to explore other options in education.

Since the 1990s there has been a surge in parental demand for education accompanied by small-fee charging private schools for the less privileged. The new phenomenon of private participation is encouraging, considering a government system that is struggling to cope with the enormous task of implementing UEE, with its problems of access and retention. During this period, private participation rates have been high both in prosperous and less prosperous states.[38] Private unaided schools have been major players in terms of contributing to the increase in the enrollment. The trend has been more pronounced in urban areas.

Freedom of Choice

Private schools can be broadly classified into three categories: private unaided recognized, private unaided unrecognized and private aided schools. There is heterogeneity between and within groups with regard to the development of private schools.

The main problem faced by private unaided schools is the lack of space, which should be weighed against the dilapidated condition of government schools. In some cases, because of the shortage of space, three or more primary schools operate in a single building. In fact, some field surveys have reported a shift of private schools from rented accommodation to another school.[39] Private schools are better maintained than government schools especially in urban areas, since they are located in the owner's house where water and electricity is generally available. However, facilities like playgrounds and libraries are poor. The more successful schools have a high pupil–teacher ratio, as there is a dearth of trained teachers in private schools and teacher turnover tends to be high. The advantage that private schools have is the sincerity of teachers and the high number of days spent in teaching activities. The curriculum in private schools is more or less standardized and does not differ from that in government schools. There is more emphasis on

teaching of English in private schools, which is one of the main attractions. Extra-curricular activities generally take a backseat in the private schools.

The reactions of parents and the preference for children from private schools by government-aided schools for secondary-level admission,[40] suggest that private schools are delivering more than government schools. This could be the major reason why parents prefer to spend on sending their children to private schools. School fees vary depending on location of the school and affordability of the household. Children in government schools have the lowest expenditure, which rises sharply for each category of private school. The scenario is different for upper primary schools, where there is a marked preference for government schools. The main reasons could be the non-sustainability of private schools in running upper primary schools (supply-side) and the fact that upper primary schools are viewed as part of secondary school (demand-side). In terms of health, nutrition, self-esteem and awareness, private school children are better off than children attending government schools. A class distinction is apparent in private schools, so scheduled caste parents are reluctant to send their children there; however, this has been declining of late. This also seems to be the case with regard to occupation status. Therefore, it is not surprising that a significant proportion of under privileged groups have complaints on this issue. Since private schools are perceived to have better quality, but are more expensive, there is a gender bias when parents decide to send their children to those. Hence, the percentage of girls is lower in private schools compared to government schools, especially in rural areas.[41] In this context, it has been found that among underprivileged households, children are initially sent to government schools and later on, if it is felt that they are not making progress, are shifted to private schools. This tendency is much higher for boys. A major problem facing private schools is sustainability. To conform to minimum standards, they have to spend more and consequently their fees are high from the point of view of underprivileged households. Therefore, private schools tend to resort to questionable methods such as prescribing text books for lower classes, fees for picnics or excursions, etc. Theoretically, these expenses are incurred for the all-round development of children, however, in practice, the benefits are not commensurate with the costs.

New schools have opened in response to the demand for education from low-income groups. The spurt in demand is attributed to the perceived linkage between job opportunities and education. The poor quality of government schools has dampened this newfound enthusiasm, and private schools, which have a reputation of being focused on quality of teaching and a serious academic atmosphere, are the alternative. The emphasis on English in private schools is an added attraction as fluency in English is associated

with attainment of good jobs and higher social status. In the rural areas, local nobles and *sarpanches* are enthusiastic about the concept of opening private schools,[42] and teachers are willing to teach at low salaries because of high unemployment.

As explained earlier, the fees charged by private schools have shown variations, depending on the location of the school and the socio-economic background of the target children. In other words, private schools are available for different income categories (demand-side). The only concern is the quality of schools (charging low fees) in terms of their infrastructure facilities. In this regard, pressure from the *sarpanch* as well as influential people of the locality and community should be exerted on the management of the school to deliver quality service. Managements should realize that if they do not deliver quality service, others may replace them. These issues can also be settled peacefully through the good offices of the community and representatives of the *gram sabha*. As observed in the past, playground space can always be created at a reasonable price with the aid of influential people in the locality and the community. Thus, through the combined efforts of the community, politicians, and village-level institutions, the shortcomings of private schools could be overcome to a large extent. If enrollment is sufficiently high, reasonable returns can be expected, thus making the schools self-sustainable. One may explore the possibility of getting the right kind of sponsors; contributions from philanthropists are welcome, but cannot be taken for granted. In other words, one can perceive a scenario where, through the forces of demand and supply, households have a choice of schools. With freedom of choice, social and economic discrimination can gradually be diluted.

Even in the new scenario, private schools may be unaffordable for a high percentage of BPL households and they will have to send their children to government schools. Given the new competitive environment, the quality of education is bound to improve in government schools, whose students will benefit. However, among the poor households (BPL included), there could be students who are academically high achievers, whose parents may want to send them to private schools even with the extra financial burden, as the returns from quality education are higher.

The Way Forward

The role of the private sector should be viewed as supplementary to the government's role in education. The focus, therefore, should be on school management. With regulation or control over unrecognized schools, efficiently run private schools could emerge. Since it is demand-driven, an environment should be created by the government for a healthy supply

response. The basic idea is to give families choices, which is possible in an environment where the market mechanism operates with regulation. The solution lies in moving from a bureaucratic framework towards a professionally managed system. New ideas and concepts should develop in response to a fast-changing environment with huge distributional concerns. The Second National Commission on Labor has expressed the need for an autonomous regulatory body for the sector.

The Mid-day Meal (MDM) Scheme

Notwithstanding some improvements in educational indicators over a period of time, universal elementary education is still a distant dream, especially for girls. Awareness of this has led to significant developments and the Mid-day Meal (MDM) Scheme is one of them. The MDM dates back to the 1950s, when Tamil Nadu launched a cooked MDM, which was expanded significantly in 1982. Gujarat introduced it in the 1960s, Kerala in the 1980s, and Madhya Pradesh and Orissa had started providing cooked meals in 1995.

Mid-day Meal as a centrally sponsored scheme was launched in August 1995. It was essentially meant to support universalization of primary education and improve the nutritional status of children at the primary stage. Apart from facilitating classroom attendance and enrollment and eliminating 'classroom hunger',[43] it provides opportunities (as experienced by some states) to overcome micro-nutrient deficiencies through health-related interventions (such as mass-deworming). In addition, the MDM can play a useful socialization role by bringing together children from different classes, castes and communities through meal-sharing. Both in the urban and rural areas we find child employment among poor households to augment family income. By feeding children, the MDM could act as an incentive for parents to send their children to school rather than for work.

Recent Developments

Until 2001, there were no significant developments in the scheme, which was limited to providing dry rations (uncooked food)[44] in most states. With Supreme Court orders and political pressure, hurdles were gradually removed.

The program was revised in September 2004 to provide a cooked mid-day meal with a minimum nutrient content of 300 calories and 8–12 grams of protein for children studying at the primary level in government-, local body-, and government-aided schools and in Education Guarantee (EGC) and Alternative and Innovative Education (AIE) centers.

Over the years, critical issues have emerged that need attention, such as the inadequacy of the MDM (i.e., 300 calories and 8–12 gm of protein), of assistance to states and provision for infrastructure, particularly for kitchen sheds. Based on the recommendations of the sub-committee of the National Steering-cum-Monitoring Committee (NSMC) the scheme was revised in 2006. The nutrient content was enhanced to 450 calories and 12 gm of protein. The main components of the scheme were: free foodgrains (100 gm per child per school through the Food Corporation of India), assistance for cooking (Rs 1.50 per school per child), reimbursement of transportation charges (Rs 100 per quintal for special category of states and Rs 75 per quintal for other states and union territories), assistance in constructing kitchen-cum-stores (Rs 60,000 per unit), assistance for kitchen and cooking devices (Rs 5,000 per school), assistance for management, monitoring and evaluation (MME) and assistance for MDM during summer vacations in drought areas.

Today, MDM has become a daily school routine across the country. It has been fairly successful in both attracting and retaining children in school.[45] However, there are areas of concern related to infrastructure and the continuation of caste discrimination, and a lack of sensitivity to women's issues, etc.[46]

Special Features

Some of the states and union territories have special features as part of their MDM schemes such as issuing health cards, observing School Health Day (Tamil Nadu), providing gas bag cooking (Karnataka), the Rajeev Gandhi Scheme where, in addition to a meal, a glass of milk and biscuits are given (Pondicherry), active involvement of the Bal Sansad (Bihar) to oversee the distribution of the MDM, *mithanis*, mobilized by the State Health Resource Center to monitor the daily school-level program in the Koriya district of Chhattisgarh, providing micronutrients and de-worming medicines under the MDM in Chhattisgarh, Madhya Pradesh and Gujarat.

Evaluation

Over the years, progress has been made in both qualitative and quantitative terms. According to the Ministry of Human Resource Development, around 12 crore children across 9.5 lakh schools have benefited. In addition to the intake of foodgrains, some states have introduced eggs, fruits, micronutrients, de-worming medicines, etc. With regard to the administrative machinery, management committees have been constituted at the district, block and school levels. At the macro-level, the scheme has generated employment.

Parents are generally enthusiastic about the MDM and acknowledge that the scheme is an incentive to send their children to school. The encouraging signs cut across gender and caste. Findings of various micro-studies have also revealed encouraging results, such as an increase in enrollment, school attendance, social equality, and employment opportunities for women. However, in certain pockets, there have been reports of caste discrimination among children and in the appointment of cooks.[47] These issues have been discussed in detail below.

Enrollment and Attendance

Enrollment in schools has increased especially among girls and SC and ST children (study by the Prathichi Trust in Birbhum district, West Bengal). According to an analysis on the MDM by the University of Rajasthan, apart from the increase in enrollment, school attendance has improved considerably. The MDM has led to an increase in enrollment in primary school, especially among girls. Dreze and Kingdon[48] found that the provision of the scheme halves the proportion of girls excluded from the schooling system. It is, thus, encouraging to note its significant impact on reducing the gender bias. Similar encouraging results emerge for SC and ST children. Even the enrollment rate in the 6–14 age group is estimated at 76.2 percent during the beginning of 1996, which is 5 percent higher than 1991 census estimates.[49]

Gender and Social Equality

The social impact of the MDM has not been uniform, as revealed by recent field studies. A study conducted by the University of Rajasthan reveals that the program has contributed to social equity (since children sit together and share a common meal) and gender equity (by giving employment opportunities to women). Field studies by the Centre for Equity Study and Collaborate Research and Dissemination also reveal similar trends. However, the study conducted by Indian Institute of Dalit Studies and Samaj Pragati Sansthan reported caste discrimination (Table 8.23), as have studies by Throat and Lee,[50] Jain and Shah,[51] and Pushpendra and Sood).[52] In Tamil Nadu and Rajasthan access to MDM among dalit children was hampered by social discrimination).[53] The study also reports segregation of children by caste and by type of food served. Class discrimination is also in evidence in Bihar.[54] Even in the appointments of cooks, there is reportedly discrimination against dalits and other minorities.

Nutrition and Health

The nutrition and health impact depends on the quality and quantity of food provided. The net impact of the MDM on a child depends on the food the child receives at home, which is directly related to his/her socio-economic condition. The vital question, therefore, is whether the MDM is a substitute or supplement. For children from BPL households, more often than not it is a substitute, in which case the net impact should be positive. However, this does not justify any compromise on the quality of food as prescribed by the Supreme Court as 'minimum standard'. The two key issues on the 'minimum standards' prescribed by the Supreme Court orders are: whether the order is being followed, and whether the quantity prescribed by the order is adequate.

Some studies indicate that the amount of food does not meet the Supreme Court norm.[55] In Delhi, parents have complained about inadequate quantities, while in Tamil Nadu and Karnataka the amounts seem to be adequate. There have been reports of children falling ill after consuming the food in different parts of the country.[56] There have been complaints of monotonous food from Rajasthan and Madhya Pradesh. It is worth mentioning that the lack of variety in the menu stems not from the prices of vegetables, but from the very small quantities that are bought.[57] However, there are signs of improvement in most states.[58] Also, positive results have been revealed from the survey conducted in the most backward villages of Madhya Pradesh by the Samaj Pratap Sahyog. In Tamil Nadu and Gujarat there is a provision for micro-nutrients and de-worming tablets, which are low-cost, simple interventions.

Infrastructure

Various field studies have revealed that there is lot to be done in this area. Most of the earlier studies had found that water facilities were inadequate. In majority of the schools, kitchen sheds are lacking. Buildings are not maintained,[59] and a shortage of storage space has been reported in some schools.[60] According to a Supreme Court order dated 24 April 2004, women and dalits are to receive preference as cooks, but these norms are not being followed according to most studies. More often than not, cooks are paid less than the statutory minimum wage.

However, recently, thanks to government intervention, there have been signs of improvement.[61] The findings of the field studies are presented in Table 8.23.

TABLE 8.23 Evaluation Based on Field Studies

Study Details	Enrollment Attendance Retention	Infrastructure (proportion reporting availability of infrastructure)	Parent/Teacher Views on the MDM	Caste Discrimination
Lokh Adhikar Network Rajasthan (61 schools in 41 villages of Barmer (October 2002)	36% for girls in Class I	Cooks (all)		-
Centre for Equity Studies (CES) Rajasthan, Karnataka, Chhattisgarh, 324 households, 9 districts (early 2003)	14.5% increase in Class I enrollment: 19% for girls	Cooks (100%) Kitchen (100%) Water (100%) Storage (6%)	91% parents, 84% teachers want the MDM to continue; 86% parents feel that the quality of the meal is satisfactory	1% parents feel that their child faced discrimination during mid-day meal
Indian Institute of Dalit studies A.P., Bihar, Rajasthan, Tamil Nadu, UP (531 villages and 30 districts) (April–June 2003)				37% reported caste discrimination; 48% reported opposition to dalit cooks; 9% reported segregated meals and unfavorable treatment in food allotment
Samaj Pragati Sansthan Madhya Pradesh (70 schools, 280 households, seven districts (Dec 2004–Jan 2005)	36% increase in Class I enrollment; 38% for girls and 43% for dalits; 15% increase from classes 1–5	Cooks (71%) Kitchen (7%) Water (66%) Storage (14%) Knives (51%)	96% parents and 93% teachers want MDM to continue	5 dalit cooks out of 82

Contd

Table 8.23 *Contd*

Study Details	Enrollment Attendance Retention	Infrastructure (proportion reporting availability of infrastructure)	Parent/Teacher Views on the MDM	Caste Discrimination
Chindwara survey M.P. (63 schools in Chindwara) (January–February 2004)		Kitchens (none) Water (all) Cooking utensils (all)	60% satisfied with *daliya* meal, 80% satisfied with *suruchi bhojan*	
Pushpendra and Sood Bihar (19 schools, two districts) (December 2004 and February 2005)		Kitchen (1 out of 19) Water (7 out of 12)		
Pratichi Trust (2004) (30 schools, 300 households in one district)	Attendance up by 10%			
Sewa Mandir (2005) (8 school in one district)	3 out of 6 teachers recalled substantial increase following introduction of MDM; 5 out of 8 teachers reported 'surge' in daily attendance attributed mainly to MDM	Cooks (7 out of 8) Kitchen (none)	13% parents reported that child had stomach ache after consuming meal; 96% children like the school food	
Collaborate Research and Dissemination (12 schools, 60 households) (mid-2005)	Teachers and parents reported that children attend school more regularly	Inadequate water for drinking and washing hands before and after meals	65% parents feel that the meal should be continued	No caste discrimination

Role Models

Some states like Gujarat and Tamil Nadu have gone beyond the norms laid by the Supreme Court. In these two states the MDM has a long history and was initiated long before the launch of the national scheme in 1995. It was started in 1956 in Tamil Nadu and in the 1960s in Gujarat. In both states, the inclusion of children according to age, has progressed well beyond the prescribed central norm. Destitute people and widows are also covered in Tamil Nadu. In Gujarat, the state provides cooked meals to children from grades 1 to 7. In both states, the administrative set-up is strong at all levels, and coordination among the different state departments is relatively better than in other states. In terms of nutrient content, the provision is in excess of the central norms.

The Way Forward

The MDM Scheme has resulted in a significant increase in enrollment of children, which has been established by micro-studies. It is also encouraging to note that the increase in enrollment is more pronounced among girls and SCs and STs. The foremost task is to tackle issues relating to the quality and quantity of meals. There is scope for further improvement in the areas of nutritional and social benefits. Policy makers and the political establishment are aware of the problems, and through their efforts steady progress has been made in recent years, with hope for the future. Consequently, more funds are available to improve the physical infrastructure and manpower to meet the demand for cooks and helpers. Innovative methods introduced recently, such as the involvement of self-help groups, mothers' committees and community institutions, are bound to have a positive impact. Finally, the extent of success will depend on the sustained efforts of the political establishment, public participation and constant evaluation and monitoring. In this regard, recent trends are encouraging.

Health Sector: Indicators of Progress and the Programs

Indicators of Progress

With reference to Life Expectancy at Birth, India (64) is below the world average (69), and stands below Sri Lanka, Bangladesh, Japan, Iran, Nepal Pakistan, People's Republic of China, Malaysia and Singapore among the Asian countries. In the world ranking, with reference to Under-5 Mortality Rate, India (69) is marginally higher than the world average (62). The incidence of Infant Mortality Rate for India (52) is higher than the world average (28); India is below Pakistan and Zimbabwe.

TABLE 8.24 Basic Indicators: International Comparisons

Country	Life Expectancy at Birth (years)	Under-5 Mortality Rate	Infant Mortality Rate	Under-5 Mortality Rank*
Bangladesh	66	54	43	58
China, People's Republic of	73	21	18	102
India	64	69	52	49
Japan	83	4	3	172
Malaysia	74	6	6	158
Nepal	67	51	41	60
Pakistan	67	89	72	42
Russian Federation	67	13	12	130
Singapore	80	3	2	189
Sri Lanka	72	21	17	110
UK	79	6	5	158
USA	79	8	7	149
Zimbabwe	44	96	62	38
World	69	62	28	90

Note: * Ranked according to under-5 infant mortality rates; the lower the rank, the higher the rating.

Source: The State of the World's Women and Children 2010, UNICEF.

Weight at Birth

In India, the percentage of children who are underweight at birth is higher than that in all the countries in Table 8.25, except for Pakistan. At a global level, 28 percent of children in India are underweight compared to the world average of 16.

TABLE 8.25 Children with Low Birth Weight (2003–2008)*

Country	Percentage
Bangladesh	22
China, People's Republic of	4
India	28
Japan	8
Malaysia	9
Nepal	21
Pakistan	32
Russian Federation	6

Contd

Table 8.25 *Contd*

Country	Percentage
Singapore	8
Sri Lanka	18
UK	8
USA	8
Zimbabwe	11
World	16

Note: *Data refers to the most recent year available during the period specified in the column heading.

Source: The State of the World's Women and Children 2010, UNICEF.

Shortage of Manpower in Health Services

There is shortage of manpower in all categories of health services, from doctors to block extension educators. The shortfall is particularly acute for specialists, pediatricians and physicians (in community health centers), surgeons and health workers (male), and male multi-purpose workers (MPWs).

TABLE 8.26 Shortfall in Health Manpower (Government) in Rural Areas (September 2004)

Manpower Type	Requirement	Shortfall	percent Shortfall to Required
Doctors at primary health centers	23,109	880	3.8
Specialists: community health centers	12,888	5,335	41.4
Paediatricians: community health centers	3,222	1,607	49.9
Physicians: community health centers	3,222	1,457	45.2
Obstetricians and gynecologists	3,222	1,607	49.9
Surgeons	3,222	1,121	34.8
Multi-purpose workers (female)/ANM	1,65,764	11,191	6.8
Health workers (male)/MPW (male)	1,42,655	67,621	47.4
Health Assistant (female)	23,109	3,198	13.8
Health Assistants (male)	23,109	5,137	22.2
Nurse-midwife	45,663	12,722	27.9
Lab-technicians	26,331	6,344	24.1
Pharmacists	26,331	1,869	7.1
Block extension educators	4,163	1,294	31.1

Source: Health Information of India 2005, Directorate General of Health Services, Government of India.

Maternal Care Facilities

Even today, a significant percentage of mothers do not avail of various facilities. However, there has been progress over time.

TABLE 8.27 Pregnant Women Availing of Maternal Care (percent)

Facility	NHS3 (2005–06)	NHS2 (1998–99)	NHS1 (1992–93)
Mothers who had at least 3 antenatal check ups	50.7	44.2	43.9
Mothers who consumed IFA for 90 days or more	222.3	NA	NA
Birth assisted by doctors ANMs, etc.	48.3	42.4	33
Mothers who received 3 doses of DPT	40.7	33.6	26.1
Mothers who received post-natal care	36.4	NA	NA

Source: National Health Survey 3 (This is NFHS – National Family and Health Survey), International Institute for Population Sciences.

Immunization

Over the years, progress has been made on the BCG and polio vaccines. However, Table 8.28 reveals that apart from these, a sizeable percentage has not availed of childcare facility.

TABLE 8.28 Immunization of Children (12–23 months) (percent)

Facility	NHS3 (2005–06)	NHS2 (1998–99)	NHS1 (1992–93)
Fully immunized	43.5	42.2	35.5
Received BCG	78.2		
Received 3 doses of polio vaccine	78.2	68.2	53.6
Received 3 doses of DPT	55.3	55.1	51.2
Received measles vaccine	58.8	50.7	42.2
Received vitamin dose	25.0	NA	NA

Source: National Health Survey 3, International Institute for Population Sciences

Programs in the Health Sector and Poverty Alleviation

A General Review of the Underlying Principles

Although healthier people may be more productive, more productive people may also allocate more resources to creating and maintaining their good

health. Because of this two-directional relationship, the association between individual health and personal productivity is not a satisfactory estimate of the causal effect in only one direction.[62] Therefore, one needs to consult a variety of indicators of health status to understand the true relationship.

Labor Productivity

The relationship between labor productivity and the indicators of health data and nutritional status has been analyzed in a growing number of low-income countries through different approaches:

1. The intake of calories as an endogenous demand decision by individuals and families made in response to factors including local prices of nutrients.[63] This is extended to other nutritional intakes, such as proteins and nutritional status proxied by Body Mass Index (BMI: weight-to-height index)
2. Strauss estimated the marginal product of agricultural labor in Sierra Leone, where he hypothesized that large labor might be more productive when family workers were supplied with more calories. He estimated the household agricultural production function including an interaction between endogenous supply of calories and the labor input into farm production.[64] Strauss used community variation in the price of nutrients as an instrumental variable to predict the family's supply of calories. He found calories driven by food prices raised the marginal product of family labor, especially at low calorie levels.
3. Subsequent studies by Deolalikar for wage earners in India, Sahn and Alderman in Sri Lanka, Haddad and Bouis in Philippines and Foster and Rosenzweig in India and Philippines.[65] In urban Brazil, Thomas and Strauss (1997) estimated the joint effects of hourly earnings of calories, proteins and BMI, all these three endogenously instrumented on local relative food prices, while also controlling for education and height.[66] Strong effects with diminishing returns were found for endogenous nutrition and health variables. They estimated elasticity of earnings with respect to exogenous height for men and women, which was found to be small but significant.
4. Living standard measurement surveys coordinated by the World Bank from 1985 to 1989 in Cote d'Ivoire and Ghana which allow joint estimation of the effects on wages of height, BMI, life time migration and years of schooling for men and women.[67]

The results are reproduced below in respect of Living Standards Measurements Survey (LSMS) in Cote d'Ivoire and Ghana.

TABLE 8.29 Alternate Estimates of Human Capital Wage Return for Schooling, Mobility and Nutrition Health: Cote d'Ivoire and Ghana

	Sample size	Years of Education	Migration from Birth Place (Migrant = 1)	Height in Centimeter	Weight to Height Squared (BMI)
Cote d' Ivorie LSMS: 1985–1987					
Males	1,692				
1. OLS: In wage effect		0.109	0.715	0.00862	0.0451
		(16.4)	(8.73)	(2.00)	(4.55)
2. IV: In wage effects		0.107	0.691	-0.015	0.159
		(3.88)	(3.09)	(0.56)	(3.00)
Females	1,180				
3. OLS: In wage effect		0.0730	0.891	0.00146	0.0613
		(7.18)	(8.26)	(0.62)	(6.88)
4. IV: In wage effects		0.0731	0.961	-0435*	0.0950**
		(3.58)	(4.80)	(1.78)	(2.50)
Ghana LSMS: 1987–1989					
Males	3,414				
5. OLS: In wage effect		0.0437	0.348	0.0148	0.530
		(9.86)	(6.75)	(5.02)	(6.80)
6. IV: In wage effects		0.0445	0.218	0.0569**	0.0739
		(2.46)	(2.26)	(3.45)	(1.95)
Females	3,400				
7. OLS: In wage effect		0.0375	0.531	0.129	0.0420
		(7.26)	(8.46)	(3.63)	(7.63)
8. IV: In wage effects		0.0356*	0.361	0.0748**	0.0981**
		(2.69)	(2.98)	(3.44)	(4.11)

Source: Schultz, 2005.

Public Spending and Redistribution of Benefits: International Perspectives

The studies by World Bank during the 1990s based on the results from 1970s and 1980s suggest that education attainment increases both wages and labor productivity in agriculture and the informal sector.[68] Some findings are: In Indonesia, rates of return on primary and secondary education exceeds 10 percent, in Tanzania it is 6–9 percent, in Madagascar, the return is around 10 percent for salaried workers in the formal and informal sector. Several studies undertaken in Indonesia show that access to health care has a positive effect on income.

Education has an impact on health and vice versa, making overall effects of gain more than the sum of the direct effects of these two factors. Results with reference to studies conducted in 20 African countries, Madagascar, Tanzania and Peru are presented in the table below.[69]

TABLE 8.30 Impact of Parental Education on Selected Variables

Country	Variable	Impact on Child
20 African countries	Mother can read	Increased size (especially for girls)
Tanzania	Mother has access to media, parents can read	Increased size Brings schooling at early age
Peru	Mother: number of years of schooling	Size increases as a function of this number
Madagascar	Father: number of years of schooling	Likelihood of medical visits depends on this number
	Paternal care (depends on mother's number of years of schooling	Size depends on parental care

Source: Christian Morrison. 2002. Health, Education and Poverty Reduction Policy Brief No.19, OECD Development Centre.

On similar lines, health status generates externalities as school performance depends in part on the child's health.[70] This interaction between education and health works in the opposite direction in the case of illiterate parents i.e., children of illiterate parents tend to be less healthy, enroll in school later and leave at an early age, and perform less well in school, all of which lowers their future earning potential. Thus according to Morrisson,[71] education and health must be taken together to estimate their overall impact on poverty.

Estimates for Indonesia, Madagascar and Peru reveal that higher the level of education considered, the less spending is redistributive. The primary education is always 'progressive' (share of spending allocated to the poor is greater than or equal to their share in the population). Similarly, health spending becomes less distributive as one rises from the village health center to the city hospital.

Various results confirm the hypothesis of Lanjouw and Ravallion,[72] that there is a positive correlation between the rate of coverage of public service and is progressive in character. When the service offered is limited to say 25–50 percent of the population, generally higher and middle income households have the first access and when it is increased to 80–100 percent, then it is the poor families that are benefited the most. In this manner by increasing the budget, relative benefits to the poor could be increased.

The demand factor is also relevant in the assessment of the distribution of social services. Demand among poor households is sensitive to price (negatively) and quality (positively) according to the World Bank study of Indonesia, Madagascar and India. A number of studies in India indicate high reliance on private health care providers even among the poor[73] on account of quality considerations. As a result, the poor are forced into out-of-pocket expenditure to seek medical care from private sector health care providers, and hospitalization and chronic illnesses often lead to liquidation of assets and indebtedness. On paper, education or medical care could be free, but the household has to meet other ancillary expenditure and the impact of this would be higher among poorer households. In this context it is worthwhile to divide BPL households into say 'poor' and 'very poor'. However, in India there are serious methodological issues in identifying BPL households, and the disaggregation of this group is currently not possible.

One needs to have a fresh look at the choice of indicators, and it is generally agreed that indicators of outcome should also be given consideration.[74] The author has quoted the World Bank study, where the indictors reveal that in Cameroon and Senegal, the level of spending in primary education relative to GDP is nearly the same, whereas outcome in terms of educational attainment in Cameroon is three times that in Senegal. Composite indicators may be developed by combining the resource indicators and outcome indicators. UNDP has developed such indicators. For instance, UNDP's Human Development Index includes not only per capita income and life expectancy, but also the literacy rates (outcome) and school enrollment rates (resources). The poverty indicator combines medical care (resources) and under-40 mortality rate (outcome). Given the discrepancy between these two types of indicators (for primary education in five francophone African countries, for the FAO calorie consumption standard and childhood nutrition in 19 African countries), it would be preferable to combine either resource indicators or outcome indicators Morrisson Christian.[75]

In majority of the poor countries, education and health are both signs and causes of poverty and hence the UNDP's poverty indicator includes education and health indicators e.g., indicators of health and percentage of literate adults.[76] However for inter-country comparisons, composite indicators may be misleading, especially in situations where one country has a serious health handicap (Asian country) while for the other country the key issue is illiteracy (African country).

Programs in Health Sector and Poverty Alleviation: India

A number of studies in India indicate the high reliance on private health care providers even among the poor.[77] The poor are forced to spend on private

sector health care providers, and hospitalization, and chronic illnesses often lead to liquidation of assets and indebtedness. As estimated, over 40 percent of hospitalized Indians borrow heavily or liquidate their assets to meet these expenses, and over 25 percent of hospitalized Indians fall below the poverty line because of hospital expenses.[78] Poor households in India are disproportionately affected by diseases and have little access to quality health care services, in spite of the fact that over the years, India has created a vast network of health centers and hospitals under the public health system.

Public Expenditure on the Health Sector

Public spending on health care forms only a miniscule proportion of the total spending on health in the country, and resource allocation has also remained low over the years. In fact, public expenditure (central and state governments) on health as a percentage of total government expenditure has remained around 3 percent and the combined expenditure on health as a percentage of GDP has remained around 1 percent between 1992–2003 and 2003–2004.[79] Though India's public health expenditure as a percentage of GDP is comparable with its neighboring country Pakistan, it is much lower than that of the corresponding share for countries like Sri Lanka, Malaysia, PRC, Brazil and Thailand.[80] India proposes to enhance public expenditure on health from 0.9 to 2–3 percent of GDP in the coming years.

In real terms, the per capita public expenditure on health has increased very nominally from Rs 89 in 1992–1993 to just Rs 122. In nominal terms while the all-India per capita public expenditure is Rs 214.62 for 2003–2004, there is wide variation among states. While states like Delhi, Kerala, Karnataka, Punjab, Tamil Nadu and Maharashtra spend above the national average, per capita public expenditure on health is pathetically low in states like Bihar, Madhya Pradesh, Orissa and Uttar Pradesh, indicating that states that most need to improve the health status of the people, have spent very little on health care.

The present UPA government, under the Common Minimum Program proposes to increase expenditure in the health sector, especially in primary health care, from the current level of 0.9 percent of GDP to 2–3 percent of GDP in the next five years.

State of Primary Health Care Services

Since Independence, the country has created a vast network of public health infrastructure to deliver promotive, preventive and curative health care services. In rural areas primary health care services are provided through a

network of sub-centers, primary health care centers (PHCs) and community health care centers (CHCs). A sub-center is the first peripheral contact point between the primary health care system and the community and the official norm is to have one sub-center for every 5,000 people in the plains and 3,000 people in the hills. Similarly, the primary health center is the first contact point between the village community and the medical officer; the norms are that a PHC has to cover 30,000 people in the plains and 20,000 in the hills. Similarly the CHCs which function at the block level are expected to cover 1,20,000 people in the plains and 80,000 in the hills. In 2006, across the country as whole, 1,46,026 sub-centers, 23,236 PHCs and 3,346 CHCs were functioning, but there are shortfalls in the rural areas. While a number of states have fulfilled the norms, there is a significant shortfall in states like Bihar, Uttar Pradesh and West Bengal (for Orissa and Maharashtra, only in sub-centers).[81] The government has thus not been able to spread health services equally across states and the states with a low health profile are those which seem to lack in health infrastructure as well.

Even if health centers do exist, they do not always deliver quality and efficient services for various reasons. A recent evaluation by NCAER on the functioning of health sub-centers in some states points to the following reasons which affect service delivery: lack of permanent buildings, shortage of staff especially male staff (half the SCs are functioning without male staff), lack of training to meet new responsibilities, lack of sensitization of staff especially towards the downtrodden and irregularity in the disbursement of salaries.[82] It was also found that the average population and average number of villages covered by each SC are fairly high and hence difficult to manage effectively.

A number of studies have reported that the working of the PHCs and CHCs is far from satisfactory. The PHCs face a shortage of doctors (especially female doctors), medicines, and transport facilities for field visits and a lack of equipment; in many instances they are difficult to access by people. For instance, an evaluation of the functioning of PHCs under the Social Safety Net Program (SSNP) by the Planning Commission showed that not a single PHC under the SSNP was equipped with complementary facilities, including female doctors, that are required for promoting institutional deliveries. As a result there was poor utilization of PHCs for deliveries.[83] The study also found that because of the high absenteeism of doctors (though in their absence, available para-medical staff was treating common ailments) and lack of diagnostic facilities at PHCs, patients preferred to visit the district hospitals. For almost similar reasons, rural inhabitants bypass CHCs, to directly visit district hospitals resulting in overcrowding of the already overstretched facilities. Though CHCs are supposed to have 30 beds

for in-patient treatment and an operation theater, these are grossly under-utilized because of the shortages of staff and other complementary facilities, and due to mismatch between required facilities. For instance, even if an operation theater exists, the center may not have an anesthetist or a surgeon. If there is an ambulance, there may not be a driver or funds for fuel to run the vehicle. Not only is the functioning of the CHCs far from satisfactory, the shortage in the number of CHCs is as high as 58 percent. As mentioned in the National Health Policy document, the public health infrastructure suffers from insufficient funding, a shortage of medical and para-medical staff, poor availability of consumables and essential drugs, obsolete and unusable equipment and dilapidated buildings. As a result, the utilization of public health facilities is low, forcing even the poor to spend out of pocket.

The National Health Policy announced in 2002 (NHP-2002) realized that the quality and efficiency of the existing public health infrastructure were far from satisfactory and attempted to address some of these issues to narrow the gap between the various states as also the gap across the rural–urban divide. NHP-2002 emphasized the need for enhanced funding and an organizational restructuring of national public health initiatives to ensure more equitable access to health facilities. It mentioned the possibility of using the vast reservoir of practitioners in the Indian system of medicines who have undergone formal training, to implement public health programs, and thus increase the reach of health care. Based on examples from some states, the NHP-2002 examined the possibility of devolving health programs and funds through different levels of the Panchayat Raj institutions.

The National Rural Health Mission

Within two years of announcing the NHP-2002, the government launched the National Rural Mission (NRHM), which began operations throughout the country in April 2005 with a focus on 18 states with weak public health indicators and/or weak infrastructure. The NRHM was meant to address most of the concerns spelt out in the NHP-2002. The main aim of the NRHM is to provide 'accessible, affordable, accountable, effective and reliable primary health care facilities, especially to the poor and vulnerable sections of population'. In a way it is an articulation of the government's commitment to enhance public spending on health from the present 0.9 percent of the GDP to 2–3 percent of GDP. The NRHM is expected to cover all the villages in the 18 states through a cadre of 'Accredited Social Health Activists' (ASHAs) who are to act as a link between health centres and villagers.

Goals of the NRHM

- Reduction in the infant mortality rate (IMR) to 30/1,000 live births and in the maternal mortality ratio (MMR) to 100/1,00,000 live births by 2012;
- Universal access to comprehensive public health services such as women and child health care, water, sanitation, hygiene, immunization and nutrition;
- Prevention and control of communicable and non-communicable diseases including locally endemic diseases;
- Population stabilization, gender and demographic balance; and
- Revitalizing local health traditions and mainstreaming ayurvedic, yoga, unani, siddha and homeopathy systems of health (AYUSH).

Promotion of Healthy Lifestyles

The plan of action under the NRHM includes the:

- Creation of accredited social health activists (ASHA). One ASHA in every village/large habitation is to be chosen to act as an interface between the community and the public health system, and is accountable to the panchayat;
- strengthening of sub-centers—which includes the allocation of a United Fund of Rs 10,000 per annum, supply of essential drugs, both allopathic and AYUSH, and the sanction of new sub-centers according to the 2001 population norms, and upgrading existing sub-centers, including the buildings;
- strengthening of PHCs by ensuring adequate, regular supply of essential drugs and equipment, and providing 24 hours service in half the PHCs by addressing the shortage of doctors through mainstreaming AYUSH practitioners;
- strengthening of CHCs by making existing CHCs (with 30–50 beds) operate as 24-hour First Referral Units (FRUs), including posting of anesthetists, setting norms for infrastructure, staff, equipment, management, etc., for CHCs and promotion of stakeholder committees for hospital management;
- preparation and implementation of an inter-sectoral District Health Plan prepared by the District Health Mission, including drinking water, sanitation, hygiene and nutrition, so that districts become the core units of planning, budgeting and implementation;
- converging sanitation and hygiene under the NRHM by making District Health Missions guide sanitation activities at the district level;
- strengthening disease-control programs;

- promoting public-private partnerships for public health goals;
- introducing new health financing mechanisms including risk pooling for hospital care; and
- re-orienting health and medical education to support rural health issues.

The NRHM expects the PRIs play an important role. For example, the Zila Parishad can lead the District Health Mission, ASHAs can be selected by and be accountable to the village Panchayat, the Village Health Committee of the Gram Panchayat could prepare the Village Health Plan, and so on. The duration of NRHM is from 2005 to 2012.

Highlights of Progress under the NRHM (from the Annual Report of the Ministry of Health and Family Welfare, 2006–07)

- In all states, state health missions have been constituted and state departments of health and family welfare have been merged;
- By March 31st, 2006, 1,27,729 ASHAs were selected; training modules for ASHAs have been finalized and state/district/block-level trainers completed;
- A facility survey has been completed in 1,452 CHCs and 2,045 CHCs have been selected for upgradation; 8,080 Rogi Kalyan Samitis have been set up at various levels and 129 integrated district health plans have been prepared in various states; 22,655 doctors, ANMs and other paramedics have been appointed by states on contract basis to fill critical gaps; block-pooling of doctors has been initiated to ensure that there is at least one functional health facility in each block;
- Various training activities have been undertaken for ANMs, medical officers, etc.;
- The RCH-II is being implemented; legal changes have been made to allow ANMs to dispense medication and MBBS doctors to administer anesthesia; a short course for anesthesia is being proposed; the mobilization of children for immunization by ASHAs and *anganwadi* workers will increase coverage and convergence of nutrition with immunization.

Though it is too early to judge the outcomes of the Mission, there have been some concerns about its success. While selecting someone from the village to be trained as an ASHA maybe a good idea, it is not very different from the Voluntary Health Guide (VHG) scheme launched in 1997. It is important to learn from the failure of the VHG scheme. An ASHA must not be a replacement for trained health functionaries. There could be some ambivalence in the role and location of the ASHA at the village level, as she has to operate as a bridge between the ANM and villagers while also being accountable to the panchayat.

Need for Private Sector Participation

The public health infrastructure can cater to only one-fifth of the population. In rural India, both health infrastructure and the quality of public health services are poor. In many states, the number of sub-centers is below the prescribed official norm (one sub-center for every 5,000 people in the plains and for every 3,000 people in the hills). The same is true of PHCs and CHCs.[84] There is also a shortage of trained health care providers.[85] Most health problems that people face in rural areas and urban slums are curable.[86] Because of the deficiencies in public health care facilities and the poor delivery system, a high proportion of rural poor rely on private health care providers.[88] Currently, the reliance of the rural poor on private services takes a heavy toll on their already weak financial status.[89] It is estimated that out-of-pocket expense pushes 2.2 percent of the population into poverty.[90] In the light of inadequate provision in the budget (around 3 percent of government expenditure and 1 percent of GDP)[91] and no dramatic change in the foreseeable future, there is urgent need for intervention. The vital question is whether the private sector has the capacity to augment services provided by the public sector, with efficient delivery and at rates that are reasonable from the point of poor households.

Over the years, the private sector has grown at a rapid pace.[92] Currently, 93 percent of all hospitals, 64 percent of beds, 80–85 percent of doctors and 57 percent of inpatients are in the private sector. From the point of view of accessibility, management and efficiency of delivery, the private sector rates well above the public sector. Around 80 percent of the registered doctors in India work in the private sector.[93] In developing countries such as Bolivia, Gautemala, Indonesia, and Paraguay, more than 50 percent of acute respiratory infections and diarrhea cases are treated in the private sector.[94] In urban and rural India, more than 80 percent of households go to private health care practitioners for childhood illness.[95] Taking cognizance of this fact, state governments in India have been exploring the possibility of involving the private sector in the health care system.

Private Sector Involvement: Feasibility

Public sector institutions are financed by state revenues from government departments, semi-autonomous bodies, civic bodies, etc. The private sector comprises health care providers who fall outside the public domain, and can be broadly classified as commercial (profit-making, for-profit or FP) and non-commercial (not-for-profit or NFP), also called non-government

organizations (NGOs). Private sector profit-making enterprises can be reclassified as informal, for-profit (such as a small nursing home) and for-profit (corporate).[96]

In India, NFP NGOs account for an insignificant proportion (less than 1 percent) of health care provision. NFP services are generally clustered in large hospitals or charitable trusts. Most NFPs are financially supported through donations. They are generally established on a financially sustainable basis. Since by definition profit is not their motivating factor, they can attract dedicated workers at below market rates. Such institutions cater to the needs of the poor, and also take up projects where profit margins are low or negligent. However, organizations which survive on donations cannot be a long-term supplement to public services, as donors can withdraw support at any time. Service providers should be self-sustainable, which is feasible only through the involvement of for-profit (FP) private sector institutions. The FP sector is essentially a heterogeneous group comprising hospitals of international quality, small private clinics, private practitioners with varying abilities, some qualified and some not qualified, etc. Each FP segment has different objectives, so the quality of services and resource availability vary. The target population (urban/rural rich, urban/rural middle income, urban/rural poor) availing their services also varies accordingly. Therefore, they are not appropriate to tackle the health care needs of the poor where the focus should be on quality treatment at affordable price.

Clearly, infrastructure is available in the private sector, but there is no regulation. The solution lies in evolving a model that optimizes the use of available resources to provide low-cost, quality services for the poor. Public–private partnerships are one such model which is being applied in various states. In the redefined role, the public sector largely performs a stewardship function and creates an environment in which the private sector helps the state achieve its health objectives.[97] Government partnering with the private sector would help improve its accountability and competency, and extend service reach to the maximum.[98] The guiding principle is that the private sector delivers the good in a market-friendly environment and in the event of a failure of the market mechanism, the public sector plays a corrective role. The government can use a variety of instruments including financing, regulation, provision of information and mandates to correct the failure of markets.[99] Stewardship by the government is defined as a 'function of a Government responsible for the welfare of the population and concerned about the trust and legitimacy with which its activities are viewed by the citizenry'.[100] Public financing is a powerful instrument for affecting the behavior of the private sector.[101]

Incentives

Government incentives can be broadly classified as: financial options, regulation and information dissemination.

- Financial support: outsourcing, financial incentives such as tax benefits, subsidies, using government resources to increase coverage, etc.
- Regulation of instruments: need for government regulation, types of regulation, laws and regulation-based strategies, government's capacity to initiate and maintain an effective regulatory system and limitations of current regulatory policies.
- Information dissemination: policy-level strategies, provider-level strategies and community-level strategies.

Strategies and Instruments

Factors that should be taken into account in the public–private mix should be country-specific. The major factors are listed below.[102]

The haves versus the have-nots, rural versus urban, primary and preventive versus curative and tertiary and public versus private goods and services. National priorities and ground realities are known with regard to government spending. Once the imbalances are identified, distinct markets can be segregated as private and public.

Models practiced in India

In most states, the common PPP model is contractual appointment of health care personnel. Other forms of PPP in health care include: (*i*) subsidised land (Delhi, Punjab and Rajasthan), excise duty exemptions on machinery imports and other fiscal incentives to the private sector to set up specialized hospitals; (*ii*) handing over the management of PHCs to NGOs, while financing remains with the government (Gujarat); and (*iii*) industry management of health centres (Tamil Nadu).

In the last model, an industry adopts a local primary or sub-center and is responsible for its maintenance, maintaining the building and equipping the facility, while the state government provides staff and medicine.[103] Vivekanada Girijan Kalyan Kendra (VGKK), an NGO operating in Karnataka, has adopted some PHCs, and has outside doctors providing medical care to the patients.[104] In Rajasthan, the M.R. Muraka-GDC Foundation (set up by an industrialist) has adopted 35 of 135 villages in Nawalgarh, in the Jhunjunu district of Rajasthan. In these villages, space has been provided either in homes or shops for a makeshift PHC. The

foundation provides volunteers and medicines and mobilizes doctors from nearby government hospitals.[105]

Case Studies

In Madhya Pradesh, the Rogi Kalyan Samiti (RKS) is willing to partner with all local-level stakeholders, including the administration, charitable organizations, donors, leading elected representatives and hospital staff.[106] RKS raises funds and provides management at the local level. Users and service providers (doctors and para-medicos) are directly involved in running the public hospitals.[107] This program was extended to cover more than half the 1,200 public hospitals in the state. Under the new management system, patients are charged a user fee, but those who cannot afford it are treated free of cost. A notable feature of the scheme is that self-certification is a valid proof of poverty. 'The system works', observed a UNICEF team which assessed the impact of RKS at the end of 2000.[108] However, the main concern is that the RKS body is looked after by the district collector, and his involvement in it becomes crucial to its functioning. The bureaucracy is too overburdened to devote sufficient time to health care, but this will seriously affect the smooth functioning or continuity of the scheme.

RKK was launched in Badanagar township in Badanagar tehsil in Ujjain district of Madhya Pradesh. Its initial funding came from the business community of Badanagar with the active involvement of Dr Kapadia, a trained surgeon posted as physician in a hospital.[109] At that time, the hospital (1979) did not have the requisite infrastructure for surgical operations. A decade later, enthusiastic businessmen sought the advice of Dr Kapadia on how best to use the funds that they could raise themselves and from the business community, and the RKK was formed in June 1996 with Kapadia as secretary. Other members include presidents of the local janpath panchayat and municipality. There are facilities for pathological tests, X-rays, and surgery. BPL households are exempt from paying user charges and receive free medicines. Through user charges, RKS earned Rs 7.51 lakhs in the seven years ending March 2002. Over the years, the complex has added a medicine shop, canteen and bathroom facilities apart from rapid expansion in other areas such as pathological blocks, special blocks, and the number of beds. This is a good example of an organization which has flourished with the involvement of local businessmen, philanthropists, youth, educated persons and the state department to become a well-equipped hospital.

Experts from different fields feel that RKS is not an individual-driven concept, but a movement which has changed the face of hospitals for better health care facilities. Because of its success, government hospitals are more

open to citizens' involvement in decision-making and the functioning of government hospitals has become more transparent, accountable and sensitive to the needs of patients.[110]

The Way Forward

One cannot generalize the findings of the studies based on small samples. Of greater importance are the lessons to be drawn from success stories of partnerships between public and private entities which work as a safety net for the poor. For these schemes to be successful at the macro level, similar efforts need to be forthcoming at a much larger scale. This success story is the result of a team comprising doctors, the community, bureaucrats, politicians (especially MLAs), businessmen, philanthropists, etc., and is basically a micro-level concept. For the scheme to be successful at the state level, the program will have to be planned district by district.

Conclusions and Recommendations

It is now widely recognized that the measure of poverty through calorie intake is not adequate, but should take into account education and health parameters. Besides, the provision for education and health enhances the income-earning capabilities of individuals through the accumulation of human capital. This is especially true for poor persons, as labor is their most important economic endowment.

The social sector provisioning by the government—center, states and local, as well as their adequacy and effectiveness in terms of quality and quantity, have been subject to much scrutiny by various experts and groups including government agencies. Our conclusions are derived from these sources.

The impact of the Mid-day Meal Scheme on enrollment and attendance is indisputable. This has been collaborated by several research studies. However, its impact on health, social inequalities and gender discrimination has not been significant. In other words, the mid-day meal platform has not had the desired effect of sensitizing children in terms of these key issues. Also, infrastructure facilities need to be improved. The impact on health can be measured only if both the quantitative and qualitative aspects are considered. The quantitative aspects relate to the supply chain, which could be strengthened by coordinating with existing government schemes such as the Sampoorna Grameen Rozgar Yojana (SGRY), National Slum Development Program, Urban Wage Employment Program, etc. The qualitative aspect should focus on a balanced diet with the prescribed nutrient content. Deficiencies in this regard, reflect a poor delivery system, and lack

of monitoring, supervision, social auditing, etc. These issues have to be tackled urgently.

The Sarva Siksha Abhiyan has resulted in an improvement in accessibility to school, increase in the enrollment rate, decline in the drop-out rate and decrease in gender disparity. However, we still have a long way to go if we are to attain the goal of full enrollment and retention of children. The retention rate is generally low among children from poor families. Factors associated with quality of retention are: children's association with activities interfering with the social menu provided by the school, inability to cope with the curriculum and failure to get promoted to the next class. This could also be a reflection of quality of the teachers and poor management. With regard to female participation in education, efforts have been made through schemes such as Mahila Samkhaya, National Program for Education of Girls at the Elementary level, Kasturba Gandhi Balika Vidayalayas, etc. However, the associated social problems are so widespread that efforts complementing these initiatives are required. This calls for team effort involving experts from various fields. Community volunteers, NGOs, parent–teacher associations, etc., should be encouraged to actively create a conducive atmosphere and their efforts integrated with government initiatives.

In India, only 5 percent of the work force in the age group 20–24 years has formal vocational training, which is very low as compared to several developed and developing countries. The NSS 61st round reveals that around 98 percent of the Indian population has no marketable skills. It is therefore not surprising (and also a matter of concern) that the informal sector, for all practical purposes, is untouched. Further, the training imparted by institutes does not cater to the demands of industry. Therefore, there is a need to know the industry demand for various fields and the demand for skills for a specified field. The supply of human resources should match both components of industry demand. This requires structural changes in the courses and curricula offered by various institutions. Currently, no database is available on industry demand especially in the small-scale and informal sectors. The government needs to commission recognized agencies to assess this demand, which will form the basis for rescheduling the curriculum. The next step is to train the unemployed, especially those among the vulnerable sections of society, to acquire the required skills, as part of the capacity-building process. This issue is gaining in pertinence as the growth in demand for 'self-employment' through various government employment generation programs would be steeper than the growth in the demand for 'wage employment'. A Labor Market Information System also needs to be developed. These issues can be tackled through the active involvement of professionals as against the currently followed bureaucratic structure.

The launching of the National Rural Mission (NRHM) in April 2005 to provide 'accessible, affordable, accountable, effective and reliable primary health care facilities, especially to the poor and vulnerable sections of population' is a major development. The NRHM is expected to cover all the villages in 18 states through a cadre of 2.5 lakh village-based Accredited Social Health Activists (ASHAs) to serve as link between health centers and villagers. It is too early to judge the outcomes of the NRHM, but economist, Jeffrey Sachs believes that the NRHM is a transformative idea. Public expenditure on health is targeted at 3 percent of GDP from its current level of less than 1 percent, which implies that the government has to drastically increase the budget—something that looks highly improbable in the short run. Sachs even recommends a health budget of 5 percent of the GDP. Therefore, alternative sources of funding like public–private partnerships need to be explored to reduce the gap. The issue of delivery systems needs immediate attention through involvement of trained medical professionals and effective supervision by local community (NGOs, PRIs, welfare associations, etc.). The local community through their representatives should be empowered to make PHCs accountable. There is a need to evolve a system of health regulation and health information.

Bureaucratic hurdles mark the functioning of the entire government machinery, from the state to the zila parishad, panchyat and gram sabha levels. A lack of accountability and non-democratic functioning are the hallmarks of the implementation of most programs in most locations. Thus, poor institutional arrangements are responsible for a lack of awareness and involvement of the community on crucial issues, resulting in problems that are multidimensional. As a result of all these problems, the desired impact is not felt at the macro level. Hence, attention should be paid to strengthen the institutional framework and involve the community at large.

It is recommended that accounts, expenditures, beneficiaries, etc., and the whole implementation process should be computerized at the block/village level for onward transmission and monitoring. The active involvement of PRIs, gram sabhas, civil societies, NGOs, community-based organizations, etc., is required in the implementation and monitoring processes. In fact, at least two-third of the members of the principal monitoring committee should consist of beneficiaries of the programs.

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9 Beyond Micro-credit: Financial Inclusion and Micro-enterprise Development for Poverty Reduction*

The Growth and Poverty Context

Lauding the macro-economic performance of the Indian economy in 2006–2007, the final year of the Tenth Five Year Plan, the Economic Survey 2007 noted that growth 'exceeded expectations'. In the three years before the global economic crisis of 2008–2009, GDP growth averaged more than 9 percent per year. The impressive GDP growth rate in the 10th Plan period is mainly attributed to the double-digit growth of the manufacturing and services sector. Agriculture virtually ceased to employ additional labor and so did the organized, or 'formal', non-farm sector. Since both these sectors account for close to 70 percent of all employment[1] and contributed almost no new jobs, the burden of providing additional employment to the growing Indian labor force fell upon the unorganized (or informal), non-farm sector. Rural employment growth rates collapsed to less than 0.7 percent, pulling down overall (rural plus urban) employment growth rates to unacceptably low levels, pushing up recorded rates of unemployment[2] and easing some people out of the labor force altogether.[3]

As has been discussed in previous chapters, over the last five and a half decades, India has made systematic efforts at alleviating poverty. The incidence of poverty expressed as a percentage of people below the poverty line declined from 54.9 percent in 1973–1974 to 36 percent in 1993–1994 and 27.5 percent in 2004–2005 (Table 9.1). However, the reduction in poverty over the last 10 years is much less than anticipated and the BPL numbers remain high.

Those living in poverty are unevenly distributed across the country with concentration of poverty in some states. In 2004–2005, eight states of India accounted for 64.6 percent of those in poverty. These are Uttar Pradesh, Uttaranchal, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh,

* This chapter has been authored by Aasha Kapur Mehta, Suparna Das and Trishna Satpathy.

TABLE 9.1 Incidence of Poverty—Percentage of Population and Number of People Below the Poverty Line: 1973–1974 to 2004–2005

Year	% Population below Poverty Line	Number of People below Poverty (in millions)
1973–74	54.9	321.3
1977–78	51.3	328.9
1983	44.5	322.9
1987–88	38.9	307.1
1993–94	36	320.3
1999–2000	26.1 (different method)	260.2 (different method)
2004–05	27.5	301.7

Source: Government of India, Planning Commission. Draft Ninth Five Year Plan (1997–2002).
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Maharashtra, West Bengal and Orissa—states where a very high proportion of population has lived in poverty for decades.[4] The incidence of poverty is highest in Orissa at 46.4 percent.

Entry into Poverty and Escape from It: A Preliminary Framework

Poverty is not static; while some poor households manage to escape poverty, others are stuck in poverty and some non-poor households descend into poverty over time. An analysis of the NCAER panel data for over 3,000 households in rural India shows that there is both substantial persistence and substantial mobility into and out of poverty. More than half (52.61 percent) the households that were poor in 1970–1971 remained in poverty over a decade later. At the same time, a little less than half (47.39 percent) the households below the poverty line in 1970–1971 escaped from poverty and became non-poor. Conversely one-fourth of the households who were non-poor in 1970–1971 became poor a decade later.[5]

There are a large number of factors that drive people into poverty, that keep people poor or maintain them in poverty, and that enable them to escape from it or interrupt persistent poverty. Most households undergo a variety of shocks and uncertainties over time, such as crop failure or losses due to price volatility or the onset of ill health. Their ability to go through these periods without significant reduction in income levels depends on their initial levels of assets and other conditions affecting income which may be related directly to themselves or embedded in their physical, social or political environment.[6]

During the last few years, there have been reports of severe agricultural distress and farmer suicides from Andhra Pradesh, Kerala, Maharashtra, Karnataka and Tamil Nadu. This is cause for serious concern for many reasons. One can argue that the farmers who committed suicide viewed it as the only means of escape from a hopeless present and future. The lack of timely and effective intervention is indicative of both state failure and community failure. Also, the fact that many small landowning farmers and farming households are facing extreme distress, that too in reportedly relatively better performing states, has significant implications for future national poverty trends.[7]

Entry into poverty is also caused by loss of income and a drain on resources due to ill health. Mortality and morbidity rates are unacceptably high, both in relative and absolute terms, even though we can successfully and significantly reduce their incidence. 'India contributes 2.4 million of the global burden of 10.8 million under 5 child deaths—the highest for any nation in the world'.[8] Ahluwalia noted that 'India's maternal mortality ratio (per 100,000 live births) is 407 compared with 56 in People's Republic of China, 213 in Indonesia and 95 in Vietnam'.[9] The unsatisfactory health indices are, in turn, an indication of the limited success of the public health system in meeting the preventive and curative requirements of the general population.[10]

Financial allocations to the health sector have been declining. Public expenditure on health is only 0.8 percent of India's GDP, in contrast with the stated objective of 4 percent. Most of the communicable diseases are caused by the lack of safe drinking water, sanitation facilities, clean surroundings, etc. CMDR's estimates of morbidity levels in the states of Maharashtra and Orissa are estimated to be as high as 27 percent.[11]

Furthermore, lack of access to credit especially in times of difficulty can lead to entry into poverty for the non-poor and greater deprivation for those who are already in poverty. Possible 'interrupters' that may enable poor households to escape poverty include asset transfers, skill formation and micro-enterprise development supported by access to micro-credit. A preliminary listing of some of the many possible 'drivers', 'maintainers' and 'interrupters' of poverty is given in Table 9.2.

It is generally recognized that 'the poor are poor only because they have no assets—no land, no livestock, no house and often no education. Their only assets are time and labor. The challenge therefore lies in enhancing the economic value of the time and labor of the poor'.[12] Ratnapandi Nadar (see box below) and millions like him are not able to move out of poverty or are in chronic or persistent poverty because they are stuck in a low wage-high drudgery-tough job groove with little opportunity for escape.[13]

TABLE 9.2 Plausible 'Drivers, Maintainers and Interrupters': An Initial Identification

Drivers	Maintainers	Interrupters
Health shock (e.g., Tuberculosis, cancer)	Illiteracy/lack of education/skills	Literacy and Education (Lok Jumbish/Shiksha Karmi).[14]
Sudden disability	Poverty combined with Disability and/or Old Age	Access to health care (WHO for tuberculosis medicines/RKS but need to move from passive to proactive health care systems and clean drinking water).[15]
Large social expenses	Social exclusion (SCs/ STs)	Social and political action (MKSS Jan Sunwayi, Right to Information).[16]
Forced borrowing for consumption loans at high interest	Alcohol/addiction	Skills transfer; value addition and linkages with market (Gum Karaya).[17]
Investment failure	Remote location (STs in India)	Access to water for irrigation, Watershed Management (Pani Panchayat, Ralegan Siddhi).[18]
Crop failure (market related/ adverse climatic conditions/ pest attack)	Poor access to health care facilities	Asset transfer (Operation Barga)
Drought/flood/ earthquake/ Cyclone/disaster	Lack of availability or information about income earning opportunities or health facilities	Access to credit at reasonable rates of interest, IGPs, Non farm employment (Self Help Groups)
Loss of productive assets (natural disasters, property sub-division, loans)	Forced sale of assets to meet a crisis	Infrastructure development in the village (Ralegan Siddhi)
	Indebtedness	Social protection-Grain Banks (Ralegan Siddhi, MSSRF)[19]
Macro policy change (suicides by Sircilla powerloom weavers)	Bonded labor	Linkages with urban areas
Loss of employment (macroeconomic factors, ill-health, lack of new skills)	Low employment opportunities	Leadership (Anna Hazare, Sulankhe, Aruna Roy/MKSS)[20]
Conflict (social, economic classes)	Governance failure	Growth, increased productivity and higher wages

Notes: Some examples are given in parentheses.
Source: Based on Bhide and Mehta. Correlates of Incidence. See note 5.

Box 9.1 Beyond the Margin : The Risky Climb of Ratnapandi

Ratnapandi Nadar lives in Ramnad in Tamil Nadu and has what must rank as one of the tougher jobs in the world. He climbs fifty date palm trees daily, some of them thrice a day to tap juice for panaivellam (date palm jaggery). That could mean 150 trips—up and down—trees that might be 20 feet in height. His work begins at 3 in the morning and lasts up to 16 hours. He can earn as little as five to eight rupees a day… Prosperity is reserved for the middlemen, traders and wholesalers in the jaggery business. Ratnapandi does not own or control a single one of the trees he risks his neck to climb.

On a lighter day, Ratnapandi has to attend to at least 40 trees. Even if these were shorter ones, between 15 and 20 feet, it means he could be climbing up to 5,000 feet a day. This is roughly equivalent to walking up and down a building of 250 floors daily, using the staircase. Only Ratnapandi isn't using a staircase. Nor even a ladder. He shins up using his hands and legs. The risks accompanying him are also, quite obviously, far greater. Ratnapandi's wife boils and cooks the juice he collects in their huge open vessel. She then pours the paste into empty coconut shells where it solidifies into neatly shaped lumps of date palm jaggery. That huge vessel they use is their only possession of any worth. They own no land and their hut has no belongings of even minimal value. They sell their jaggery to a commission agent to whom they are already indebted. This ensures a much lower price for the tappers than what the agent will command on the market.

But the *Panalyri Nadars* are not only very poor; they are also quite backward, and often illiterate. 'They have the toughest job, the lowest pay and the maximum danger,' says a Tamil Nadu Kisan Sabha activist. 'But no development schemes—and there aren't any, anyway—will help improve their conditions. Not unless we can break the debt cycle, place them in control of these trees and fight for decent prices.'

Source: P. Sainath. 1996. pp. 1136-1141. Cited in Mehta and Shah. Chronic Poverty in India. See note 4.

Enhancing the economic value of the time and labor of the poor, as Swaminathan suggests, can be achieved through value addition and 'by building the assets of the poor through a transition from unskilled to skilled work. Asset building and community development have to be the pathways for poverty eradication. This will call for a paradigm shift in the

developmental mindset, a shift from a patronage and 'do good' approach to one of genuine partnership with the poor…. 'The rural poor can take to new technologies like fish to water, provided they are enabled to learn through practical work experience and not through classroom lectures. The asset building exercise is based on micro-level planning, and micro-enterprises supported by micro-credit'.[21]

Micro Credit

Credit without collateral has traditionally been available only at exorbitant rates of interest. History provides considerable evidence of how the combination of illiteracy, poverty, lack of assets and lack of access to institutional credit resulted in a whole saga of indebtedness, bonded labor and immiserization of the Indian peasantry.

The poor traditionally have difficulty in accessing credit from formal financial systems due to illiteracy combined with a lack of ownership of land and assets that can be used as collateral. A recent World Bank–NCAER survey showed that 67 percent of the rural poor do not have access to credit from a formal source.[22] Credit was identified as a major constraint on women's ability to earn an income. In response to this, and to strengthen empowerment through collectives, self-help groups were formed and micro-credit-based activity was promoted.[23]

Micro-credit has gained increasing prominence and credence within the last decade following the 1997 Micro-credit Summit in Washington and the UN declaration of the year 2005 as the International Year of Micro-credit. Professor Muhammad Yunus established the Grameen Bank, a micro-credit initiative in Bangladesh, which has improved the lives of millions of poor Bangladeshis, especially women, and for which Professor Yunus received the Nobel Prize for Peace in 2006.

What is Micro-credit?

The micro-credit summit held in Washington DC, 1997, defined micro-credit programs as those 'extending small loans to poor people for self-employment projects that generate income, allowing them to care for themselves and their families.' These loans are given for short durations while repayments happen as frequently as possible. Micro-credit can be extended through Self-help Groups (SHGs), the Grameen Bank model, joint liability groups, or directly to individuals.[24]

Micro-credit has Certain Peculiar Characteristics

- The amount disbursed under micro-credit is very small.
- The loans are not backed by any collateral.

- Borrowers are essentially poor people, who have very little access to formal credit.
- Typically the loan is disbursed in groups.
- It has been observed that NGOs have played a crucial role in forming these groups and controlling the disbursement of loans.

The most prevalent method of providing micro-credit in India is the self-help group (SHG). An SHG is a group of 5 to 20 individuals who contribute their savings to a common fund from which members access loans as decided by the SHG. Typically banks lend to SHGs to the extent of four times the internal savings of the SHG. Such loans are usually given on the condition of joint liability.

Over the last few years there has been considerable debate regarding the 'claims made by development agencies and practitioners that micro-credit is or could be a panacea for rural development'.[25] Roth also raises issues regarding the 'frenzied promotional activity' in the context of micro-credit and points out that micro-credit schemes often treat the symptoms and not the causes of poverty.

The results of the few empirical studies that have assessed the impact of micro-credit schemes on the 'poorest of the poor' seem to suggest that they benefit the uppermost segment of the poor—as shown by the results of the studies of the impact of 13 micro-credit schemes in Asia, Africa and South America in improving incomes. Concerns regarding micro-credit have also been shared by NGOs and women's groups:[26]

- Interest rates charged by the group are usurious.
- Micro-credit is increasing indebtedness among the poor.
- Women are taking loans for husbands who often don't pay back the loans, thus increasing their vulnerability.
- The burden on children, particularly girls, has increased with children working longer hours to assist their mothers.
- The rules leave no space for flexibility for savings and this puts a huge burden on women, whose incomes are uncertain.

The study by Hulme and Mosley[27] found that the same result obtained in 10 micro-finance institutions which were surveyed:[28]

- Over half the institutions simply excluded the 'poorest of the poor' outright or allowed only a very small percentage to take part in their schemes.
- Of those who engaged with the poorest, the result of the loans in respect of increases in asset holdings seemed inconclusive—a mix of increased asset holdings and high rates of enterprise failure.

- None of the institutions influenced investment in risk-reducing activities.
- Less than a third of all the institutions provided accessible savings/storage facility.
- Only two of the recorded institutions gave additional entitlements during crisis periods.

They concluded, however, that whether these trends were global and inherent to micro-finance institutions in developing countries was open to debate. All the same, it was clear that the 'poorest of the poor' would always benefit the least from any such scheme.

This is due to a number of factors:[29]

- The wealthier the individual or household the greater the range of investment opportunities. The poorest households or individuals are often only able to invest in the least lucrative investments.
- Those with higher incomes have access to a greater volume of information, i.e., they have a greater ability to buy and assimilate market information.
- The richer poor have the ability to take on riskier, more rewarding investments, without threatening their minimum need for survival.
- Related to limited investment opportunities is the fact that rural markets have a limited capacity to absorb new products and the market can saturate relatively quickly with current goods and services. Very poor entrepreneurs will often not be able to trade the goods or services they produce in urban centers or internationally (because of limited funds).
- The richer poor are able to invest more in absolute terms and thus reap much bigger rewards in absolute terms.
- If the use of the loan is not specified, the 'poorest of the poor' will tend to use a greater proportion of the loan for consumption than the middle or upper income poor.
- The 'poorest of the poor' often exclude themselves from larger loans, 'not wanting to jeopardize their access to future credit by gaining a reputation for being un-creditworthy'.

Furthermore Mahajan,[30] cites the limitation of micro-credit as a tool for poverty eradication and questions its key assumptions:

- The focus on essentially providing 'credit' is 'myopic' as credit is not the only 'key' requirement of the poor. The poor in fact attach a higher premium to savings and insurance.
- Credit does not automatically guarantee a successful enterprise, as there are many additional inputs that are required, such as, 'identification of livelihood opportunities, selection and motivation of the micro-entrepreneurs, business and technical training, establishing market

linkages for outputs and inputs, common infrastructure and sometimes regulatory approvals'.

- Given a choice the poor, especially the poorest would choose stable 'wage-employment on or off the farm' over starting their own business. However, the proponents of micro-credit assume that the poor want to be self-employed.
- Most micro-credit programs benefit the relatively 'better-off' poor and those slightly above the poverty line, rather than the poorest. However, this does not amount to 'mis-targeting' and may in fact generate employment opportunities for the poorest.
- The notion that micro-credit institutions can provide credit in a financially sustainable way is debatable. Even Grameen Bank took 20 years to become financially sustainable while India's SHGs could only expand because of external support. Studies by CGAP show that only 100 out of the 10,000 MFIs globally are financially sustainable.

In comparison to the above, there are other studies that show that micro-credit has a host of positive effects on families that receive it. A World Bank study in 1998 reported that 5 percent of Grameen Bank and BRAC borrowers move out of poverty each year. A recent World Bank study by Shahid Khandkar shows that micro-credit programs operating in Bangladesh over a long period have produced a greater impact on extreme poverty than on moderate poverty.[31] 'The results of this study strongly support the view that micro-credit not only affects the welfare of participants and non-participants, but also the aggregate welfare at village level'.[32]

Micro-credit, Micro-finance and Financial Services

Although micro-credit has expanded in the country, and one of the world's biggest SHG-bank linkage program has been established by NABARD, its reach among the poorest and marginalized especially in rural areas, is limited. Micro-credit is one component of micro-finance. NABARD defines micro-finance as: 'Provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi-urban and urban areas enabling them to raise their income levels and improve living standards.'[33]

Financial services include basic banking services such as access to deposits and remittance facilities, savings, loans and insurance services by the formal financial system.[34] It is estimated that only about 3 percent of the 75 million poor households in India who need access to credit, receive financial services from the formal financial institutions and the micro-finance sector put together. Another study estimates that on average, nearly 500 million persons or 100 million households are in need of credit, based on the notion

that one household consists of five family members.[35] Credit coverage ranges from a high of 89 percent for Kerala and 84 percent for Haryana, Chandigarh and Delhi to 33 percent for Bihar, 27 percent in Manipur and 21 percent in Nagaland. The under-banked states are Bihar, Orissa, Rajasthan, Uttar Pradesh, Chhattisgarh, Jharkhand, West Bengal and Northeastern states. There are 10 states where more than half the adult population does not have a deposit account.[36]

Current discourse supports the argument that providing quality financial services to the poor does play an important role in mitigating poverty as it enables the poor to deal with sudden shocks such as illnesses or disasters, maintain a level of security, build assets and participate and benefit from the growth process.[37]

Financial Inclusion and Exclusion

Financial inclusion has gained currency in India in recent times, especially within the banking sector, in the context of more equitable growth and poverty reduction. The Rangarajan Committee on Financial Inclusion constituted in 2006, defines financial inclusion as 'the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.' In other words it is concerned with providing banking or financial services to all, especially the poor, and covering 'geographical regions' that have been neglected. The objective of inclusion is to abolish *'the state of social exclusion in the economy.'* Those who are financially excluded comprise marginal farmers, landless laborers, oral lessees, self-employed and unorganized sector enterprises, urban slum dwellers, migrants, ethnic minorities and socially excluded groups, senior citizens, the disabled and women.

With regard to facilitating credit provision in rural areas, cooperatives played the key role from the decade of the 1950s to mid-1960s while the 1970s and 1980s saw the establishment of regional rural banks (RRBs) and an expansion of commercial banks. The post-reform period since the 1990s has seen the emergence of SHGs and MFIs.[38]

The current rural financial infrastructure comprises:

- 33,553 rural and semi-urban branches of commercial banks.
- 13,932 rural and semi-urban branches of RRBs.
- 1.09 lakh primary cooperatives.
- 1,000 NGO MFIs 20 registered as companies.
- Nearly 3 million NGOs.
- Informal agents.

While the concept is fairly recent, India had envisaged more 'inclusive' banking much before the notion caught on in the international sphere. In the 1950s, the RBI survey on rural credit pointed out the deficit in agricultural credit and highlighted a more 'proactive role for the cooperatives'.[39] 'In 1969, the National Credit Council set up to guide the branch expansion program, found that not even 1 percent of India's villages were served by commercial banks.... Nationalization was aimed at redressing these inequities'.[40] RBI's policy of 'social coercion' based on the requirement that for every branch opened in a banked area, four branches would have to be opened in unbanked areas, led to significant growth in the number of bank offices opened in unbanked areas.

The number of rural bank branches increased from 1,443 in 1969 to 30,572 in 2006 while the population served by a branch on average fell from 1,40,000 in 1961 to less than 15,000 in 2000.[41] The existing infrastructure consists of only 30,000 bank branches for 600,000 villages spread across

Box 9.2 Regional Rural Banks—Reaching out to the Rural Populace

Established under the RRB Act, 1976, RRBs have played a crucial role in providing institutional rural credit. RRBs fundamentally provide loans and advances to small and marginal farmers, agricultural laborers and rural artisans. RRBs are jointly owned by GOI, respective State government and Sponsor Banks in a 50 percent, 15 percent and 35 percent ratio respectively. RRBs covered 525 districts out of 605 districts on 31 March 2006.

- 91 percent of the total workforce of RRBs is posted in rural and semi-urban areas.
- Account for 31 percent of rural deposit accounts.
- RRBs command a 37 percent share of loan accounts in rural areas.
- Of all Scheduled Commerical Banks, RRBs account for 34 percent of branches in NE, 30 percent in East and 32 percent in Central regions. The Rangarajan Committee on Financial Inclusion notes that these are regions with high financial exclusion.
- Of the total 29.25 lakh SHGs linked by the banking system, 31 percent linkage is by RRBs.
- The more backward regions have a greater share of RRBs, i.e., 56 percent in NE, 48 percent in Central Region and 40 percent in Eastern Region.

The Rangarajan Committee on Financial Inclusion suggests that RRB coverage be expanded to unbanked areas and their credit-to-deposit ratio increased. It also recommends that RRBs play a major role in facilitating the SHG-Bank Linkage program.

Source: Rangarajan Committee on Financial Inclusion. 2008.

6,000 blocks and 600 districts. As mentioned before, much of the coverage which has been undertaken through branches of commercial banks in rural areas and RRBs, have not been adequate to address this unmet demand.

To ensure the availability of adequate credit to farmers, in June 2004 GOI announced a credit package envisaging 30 percent growth in credit flow to agriculture during 2004–2005 and doubling it over a period of three years.[42] The progress in the implementation of the credit package as on 31 March 2006 indicated that the total disbursement by all agencies was at 1,57,480 crore, exceeding the target by 12 percent and registering a 26 percent growth over the period.

TABLE 9.3 Agency-wise, Year-wise Kisan Credit Cards Issued (lakh)

Year	Co-operative Banks	Rural Banks	Commercial Banks	Total
2001–02	54.36	8.34	30.71	93.41
2002–03	45.79	9.64	27.00	82.43
2003–04	48.78	12.74	30.94	92.46
2004–05	35.56	17.29	43.95	96.80
2005–06	25.98	12.49	41.65	80.12
Total*	**304.12**	**68.78**	**218.03**	**590.93**

*: Since inception of the scheme.
Source: NABARD. 2006. Annual Report. See note 44.

Institution-wise, GLC flow from commercial banks, co-operative banks and RRBs increased by 30, 19 and 3 percent, respectively. During the period of five years (2001–2006), the share of commercial banks increased (54 to 67 percent) and of RRBs remained almost stagnant (8 to 9 percent), while the share of co-operative banks declined (38 to 24 percent).

The benefits of these initiatives have accrued mostly to the economically better-off of the excluded categories. For instance, around 66 percent of 'large farmers' hold deposit accounts while 44 percent have access to credit. However, 87 percent of marginal farmers/landless laborers do not have access to credit from the formal banking sector.[43] From 1991 to 2002, the banks have added only 4 percent of rural households as their customers.

RBI has now taken the lead in promoting the idea of 'financial inclusion' and has issued several guidelines for its implementation. Governor Dr Y.V. Reddy expressed concern over the exclusionary policy of the banks, which 'tend to exclude rather than attract base sections of the population, in particular pensioners, self-employed and those employed in the unorganized sector. While commercial considerations are no doubt important, the banks have been bestowed with several privileges, especially of seeking public deposits on a highly leveraged basis and consequently they should be obliged

TABLE 9.4 Agency-wise Ground Level Credit Flow (Rs Crore)

Agency	2001–02	2002–03	2003–04	2004–05	2005–06	Growth Rates During		
						2001–04**	2004–05*	2005–06*
Co-operative Banks	23,524	23,636	26,875	31,231	37,252	7	16	19
Regional Rural Banks	4,854	6,070	7,581	12,404	14,076	25	64	13
Commercial Banks	33,587	39,774	52,441	81,481	1,06,152	25	55	30
Other Agencies	80	80	84	193	NA	2	130	-
Total	**62,045**	**69,560**	**86,981**	**1,25,309**	**1,57,480**	**18**	**44**	**26**

*: percentage Changes over the previous year.

**: Annual Compound Growth Rate.

NA: Not Available.

Source: NABARD.

to provide banking services to all segments of the population, on equitable basis'.[44]

Financial exclusion can be viewed in terms of (*i*) not having a bank account and (*ii*) not having access to formal sources of credit and therefore being forced to access the informal exploitative sources of credit. Thorat notes that only 59 percent of the Indian adult population had saving bank accounts as of 31 March 2004.[45] However, only 39 percent of rural adults have access to saving accounts vis-à-vis 60 percent of urban adults. Further, only 14 percent of the adult population had access to loans from the formal credit system. The northeastern, eastern and central regions have the highest unbanked population and lowest credit coverage (see Table 9.5). In 15 states, including BIMARU states, West Bengal, Gujarat, Jharkhand and Chhattisgarh, 'less than 1 in 10 adults has a loan account'.[46] Therefore, the unmet financial needs of a large percentage of India's rural population and unorganized sector are enormous.

Disparities in Access to Credit

What makes matters worse is that there are significant disparities in access to credit between Scheduled Tribes, Scheduled Castes and Others. 3.7 percent of all small borrowers from the institutional system are STs, 6.7 percent are SCs while 87.4 percent are Others. The disparity is a little lower in the case of ST and SC women as compared to others. The average amount outstanding per account was Rs 18,786 for STs, Rs 18,309 for SCs and Rs 27,045 for others (see Table 9.6 below).

TABLE 9.5 Percentage of Adult Indians having Access to Financial Services

Region	No. of Savings Accounts to Adult Population (as % of adult population) (2005)	No. of Loan Accounts to Adult Population (2005) (as % of adult population)
Northern Region	80	12
Northeastern Region	37	7
Eastern Region	34	8
Central Region	52	9
Western Region	60	13
Southern Region	66	25
India	59	14

Source: The Deputy Governor, RBI, Usha Thorat in her speech at the HMT-DFID Financial Inclusion Conference 2007, Whitehall Palace, London, UK, 19 June 2007. Available at: http://www.rbi.org.in/scripts/bs_viewspeeches.aspx

TABLE 9.6 Distribution of Small Borrower Accounts by Social Group as on 31 March 2004

Social Group	Percent Share				Average Amount Outstanding per Account (Rs)	
	Number of Accounts		Amount Outstanding		All	Women
	All	Women	All	Women		
Scheduled Tribes	3.7	5.3	2.6	3.9	18,786	16,132
Scheduled Castes (including neo-Buddhists)	6.7	10.0	4.6	7.0	18,309	15,411
Others	87.4	83.4	90.0	87.2	27,045	22,818
Unclassified	2.2	1.4	2.7	1.9	32,895	29,876
	100.0	100.0	100.0	100.0	26,284	21,769
	(61,900)	(11,244)	(1,62,700)	(24,477)		

Source: RBI, Survey of Small Borrowal Accounts, 2004. Table 12.

'The extent of exclusion from credit markets can be observed from a different view point. Out of 203 million households in the country, 147 million are in rural areas—89 million are farmer households. 73 percent have no access to formal sources of credit'.[47] Only 5 percent villages in India have a bank branch.[48] Based on data from the 59th Round of the NSSO Survey the Rangarajan Committee on Financial Inclusion[49] note that 45.9 million farmer households, i.e., nearly 51.4 percent out of the total

89.3 million farmer households in the country do not have access to credit either from institutional or non-institutional sources. 'Only 27 percent of total farm households are indebted to formal sources (of which one-third also borrow from informal sources). In other words, 73 percent of farm households do not have access to formal credit sources.' Rural credit, thus, assumes critical importance in the face of increasing levels of farmer indebtedness to non-institutional sources and the prevalent agrarian crisis.

SHG-Bank Linkage

The effort to link Self-help Groups (SHGs) with the banking system has emerged as the major micro-finance program in the country. In his Budget speech 2005 the Finance Minister noted that 560 banks including 48 commercial banks, 196 RRBs and 316 cooperative banks were now actively involved in the program. Indeed, the number of SHGs linked to banks has grown from 255 SHGs in 1992–1993 to 2.24 million SHGs in 2005–2006 with bank loans growing from Rs 0.29 crores to Rs 11,397 crores (see Table 9.7). By the end of February 2007 the numbers had risen further to 2.58 million SHGs with total bank credit extended at over Rs 14,479 crore. During the year 2006 to end February 2007, 346,000 new SHGs were linked to banks and the additional credit extended was Rs 3,082 crore.

TABLE 9.7 Self-help Group-Bank Linkage Program: Cumulative Progress (in Rs Crore)

Year end March	No of SHGs linked	Bank Loan	Refinance Assistance
1992–93	255	0.29	0.27
1993–94	620	0.65	0.46
1994–95	2,122	2.44	2.13
1995–96	4,757	6.06	5.66
1996–97	8,598	11.84	10.65
1997–98	14,317	23.76	21.39
1998–99	32,995	57.07	52.06
1999–00	1,14,775	192.98	150.13
2000–01	2,63,825	480.87	394.98
2001–02	4,61,478	1,026.34	790.24
2002–03	7,17,360	2,048.67	1,412.71
2003–04	1,079,091	3,904.20	2,118.15
2004–05	16,18,456	6,898.46	3,085.91
2005–06 (P)	22,38,565	11,397.55	4,153.63

Source: NABARD. Handbook of Statistics on Indian Economy. September 2006. Table 71 http://rbi.org.in/scripts/PublicationsView.aspx?id=8621

Another important trend in this regard is that there has been a skewed growth of SHGs across the regions with the southern region of India accounting for two-thirds of the SHGs and hence three-fourths of SHG credit. The poorer regions like northeastern, eastern and central regions account for only 0.2, 4.1 and 6.9 percent of SHG credit.[50] Many States with high incidence and large numbers of poor have underperformed in the SHG-Bank Linkage Program.

Institutional and Non-Institutional Credit

The share of 'non-institutional borrowing has increased and this is a cause for concern. The share of institutional credit in total rural indebtedness has decreased from 64 percent in 1991 to 57 percent in 2002 while the share of moneylenders in the debt pie of rural households has increased.[51] 'Among the non-institutional credit agencies, moneylenders—both professional and agricultural—and in that order, were found to be important sources for household borrowings in rural areas, their shares standing at 20.6 and 9.6 percent, respectively.'[52] The Rangarajan Committee on Financial Inclusion notes that, indebtedness to the moneylender is a sign of exclusion as it makes evident that a majority of this populace has been '*denied access to institutional credit*.' The Survey of Indebtedness undertaken by NSSO, showed that one out of four rural households and four out of five urban households do not have a bank loan.[53] At the all-India level, 48.6 percent of farmers were indebted and of them, 26 percent were indebted to cooperatives, 27 percent to banks and 41 percent to moneylenders. Therefore, hardly 12 percent of farmers had taken loans from cooperative institutions. The average loan per farmer household was Rs 12,585 and the percentage of loan taken was 19.8 percent from cooperatives, 35.6 percent from banks and 30.9 percent from moneylenders and traders.[54]

NSSO data (59th Round) shows the inability to access credit from formal sources out of the 89.3 million farmer households is at a high of 95.91 percent, 81.26 percent and 77.59 percent in the North Eastern, Eastern and Central Regions respectively. Borrowing from banks, moneylenders and traders also implies paying higher rates of interest. Rath draws our attention to the fact that the 'high incidence of farmers suicides in Andhra Pradesh fits in well with the fact that while 82 percent of the farmers there were indebted, the moneylenders and traders accounted for more than 58 percent of their total outstanding debt.'

'At the all-India level, the prevalence rate of indebtedness of farmer households in different social groups was 36.3 percent among Scheduled Tribes, 50.2 percent among Scheduled Castes, 51.4 percent among Other Backward Castes and 49.4 percent among Others. Thus, excluding farmer

households belonging to Scheduled Tribes, around half of the households in all other social groups were indebted'.[55]

The share of loans from formal sources increases with the size of land, i.e., marginal and small farmers taking loans from formal sources varies between 22.6 percent to 58 percent (Andhra Pradesh, Punjab and Tamil Nadu are the three states where dependence is highest), while it varies from 65 to 68 percent for medium and large farmers.[56]

Exclusion from rural credit is not confined to the 'farm level', but also extends to a significant number of organized non-farm enterprises which act as shock-absorbers during 'poor employment growth in agriculture and industry' and can provide a viable alternative.[57] In fact, the levels of exclusion among such enterprises are 'severe', as 'according to data in one NSSO round, only 4.13 percent of these enterprises had access to institutional credit and another 4.10 percent had access to non-institutional credit including those from relatives and moneylenders. Thus, of the estimated 58 million of enterprises as of March 2007, a preponderant number, therefore, is without institutional credit support'.[58]

Identifying Key Reasons for Exclusion and Enabling Interventions

The key reasons why people are excluded from receiving or demanding financial services[59] include: illiteracy, low awareness, lack of substantial income /assets, social exclusion, lack of informed opinion on managing resources, disability, old age, socio-cultural constraints for women, and lack of time on the demand side. On the supply side the factors are: geographical remoteness (as seen in northeastern states being most excluded), long distance from the branch, timings and more importantly complicated procedures especially documentary proofs (a problem for slum dwellers and migrants) which intimidate the poor and illiterate and keep them from demanding credit. This is exacerbated by the fact that local 'money lenders' are comparatively easier to access despite the high interest rates.

As a first step towards more inclusion RBI issued guidelines to banks in 2005–2006 to provide 'no-frills accounts' which entail nil or very minimum balance as well as charges. The focus is on simplifying the procedures and making them transparent. Consequently, the Union Minister of Finance in his budget speech of 2007–2008, taking the recommendations of the Financial Inclusion Committee, announced the Financial Inclusion Fund to be set up with NABARD for developmental and promotional interventions and the Financial Inclusion Technology Fund, each with an overall corpus of Rs 500 crore. Other initiatives being worked out are a national financial literacy campaign, building linkage with informal sources by establishing guidelines, etc.[60]

Box 9.3 The Mangalam Project: Leading the Agenda

Indian Bank, Chennai, was the first bank to implement the Financial Inclusion Project on a pilot basis in Mangalam Village, in the Union Territory of Pondicherry on 30 December 2005. This became the first village in India where all the households in the village were provided banking facilities. The project spearheaded by Indian Bank involved all the 144 branches of 37 banks operating in the UT of Pondicherry, government departments, insurance companies and NGOs.[61]

RBI in the 2006–2007 Annual Policy Statement highlighted the financial inclusion project implemented by the bank in UT of Pondicherry, and advised State Level/Union Territory Level Banker's Committees (SLBC/UTLBC) convener banks in all States / UTs to allocate villages to banks operating in their respective States/UTs for achieving 100 percent financial inclusion on the lines of the initiative taken in Pondicherry. Progress would be monitored in the SLBC/UTLBC meetings.

Source: (i) M.S. Sundara Rajan. 2007. 'Financial Inclusion: The Indian Experience'. CAB Calling (special issue). College of Agricultural Banking. 31(3). July–September.

(ii) RBI, India website: http://www.rbi.org.in/home.aspx

The 2007–2008 Annual Policy Review, reports that 100 percent financial inclusion has been achieved in the UT of Pondicherry and 28 districts in eight States of Andhra Pradesh, Haryana, Himachal Pradesh, Gujarat, Karnataka, Kerala, Punjab and West Bengal. The outcome of these initiatives is to be evaluated by an external agency, as proposed by the RBI. RBI had constituted two working groups to suggest measures for distressed farmers and to examine processes and procedures for agricultural loans respectively. They have suggested financial and livelihood counseling by way of opening centers by the banks. As a result of this recommendation, RBI has proposed that the State Level Banker's Committee be set up on a pilot basis, and a financial literacy-cum-counseling center be started in any one district.[62]

RBI has also constituted several working groups to strategize on improving banking infrastructure in less developed states like Uttarakhand, Chhattisgarh, Bihar, Sikkim and those in the northeastern region. SLBCs and Regional Offices of the Reserve Bank are monitoring the implementation of the recommendations of these groups. The northeastern region is being monitored by a high-powered committee. The RBI has additionally recommended a working committee for the UT of Lakshadweep. Some banks have initiated pilot projects using 'smart cards/mobile technology'

and biometric identification.[63] IT services also enable banks to record and process the transactions of millions of households. In a very innovative move, banks are linking up with post offices as 'agents of branchless banking'.

The reach of private players is still limited as they are essentially urban-centric and are new entrants in the field. Most SHGs for instance, are linked to public sector banks due to their reach. NABARD has recently initiated programs to involve private banks such as ICICI Bank, HSBC, ABN-AMRO, etc., with venture capital funds and social venture capitalists.[64] For instance, ICICI Bank has now increased to over 2.5 million clients and 350 million dollar assets.[65] In addition to credit they have provided 1 million insurance policies covering life, health, personal accident and even weather insurance (ibid.). The emergence of commercial (private) banks in the sector may increase competition amongst the MFIs in the market for loans, which will lead to efficiency and financial sustainability).[66] However, this may further reduce loans to the core poor while benefiting wealthy borrowers (ibid.).

Despite these efforts, the World Bank estimates that Indian microfinance reaches only 4 percent of the poor.[67] The annual supply-demand gap of credit is in the range of Rs 2,234–Rs 4,629 billion[68], i.e., supply is well below demand. Another estimate indicates that providing access to all adult members of the population would mean an additional 600 million clients while the cumulative total of all commercial banks shows 466 million deposit accounts).[69]

India would require the creation of atleast 200 MFIs across the country, each of which would need to serve at least three districts with an average population of two million if we are to provide access to 500 million poor or 100 million households.[70] They have further outlined certain strategies to improve the outreach of the MFIs. These include:

- Changing credit limits which would meet client requirement and prevent him/her from borrowing from multiple external sources.
- Providing non-cash credit, i.e., making available credit for goods such as grains and durables. For example, *Spandana,* an MFI in India provides various commodities through its store, offering a more attractive package for the poor.
- Focusing on 'business development' or 'productivity enhancement' along with provision of money, such as good quality feed, artificial insemination, etc.
- Delivering products with 'high social returns'—such as smokeless *chulha*s with credit, as being undertaken by two NGOs in partnership with the Shell Foundation.
- Using technology to increase the MFIs' virtual reach.

Box 9.4 Credit for Drought-prone Areas

IIM-A in collaboration with NABARD and Swiss Development Cooperation conducted a field study to identify policy options for providing rural credit in drought-prone areas. Recognizing that a commercial bank cannot enter into regions that may be loss-making for them, they suggested providing special fiscal incentives to the banks. 'Social objectives have to be supported by fiscal policies if commercial nature of an organization is to be retained.' The incentives could be in the form of tax rebates, compensating certain costs in 'low-deposit' regions or subsidizing costs of manpower in backward areas.

The study also stresses providing greater flexibility of payment for the poor residing in regions that are ecologically poor or bereft of other natural resources, since the returns from an investment will take a much longer time to break even. The repayment schedule should also be different for small, medium and large farmers.

Banks generally fund a single crop. However, in dry regions multiple crops are cultivated to reduce risks. Further, in such regions, agriculturists tend to undertake different economic activities together such as crop, livestock, craft and labor. Thus the banks have to go beyond funding standalone economic activities or inputs such as a particular crop or only cattle. Finances should be provided for the entire portfolio of initiatives, although the farmer may seek credit for one activity only.

Source: Anil Gupta. 1983. 'Credit Arrangement for Drought Prone Regions: Policy Prescriptions and Planners Reactions'. Ahmedabad: Indian Institute of Management.

With regard to providing credit facility to women through SHGs, the Planning Commission Report of Subgroup on Gender and Agriculture stressed the importance of providing credit in the right amount and the right time to farm-women for income-generating livelihood activities, production, housing and emergency needs of the family. It also suggested gender sensitization of the bank staff to enable them to understand the needs of rural women clients better.

Beyond Micro-credit

If the purpose is to enable the poor to escape poverty, access to credit alone many not be enough and a combination of enabling factors would be necessary. As Roth points out, credit is only one ingredient in the mix of factors necessary for a successful enterprise. To respond effectively to a potential demand for a good or service, a rural micro-entrepreneur may require access to one or more of the following: transport, communications,

power, water, storage facilities, a legal system for enforcing contracts and settling disputes, etc.[71] Credit alone is not enough for generating income. Without substantial support services that include training, savings mobilization techniques and group formation, market incentives and infrastructure, borrowers are likely to remain in debt, as they have limited options to make profitable investments.[72] BASIX, a leading NGO in the micro-credit sector, undertook an impact assessment study of micro-credit six years after introducing it to its customers. The findings showed that 52 percent of the customers using credit for over three years reported an increase in income, 23 percent reported no change while 25 percent reported a decline. The reasons were 'unmanaged risk, low productivity in crop cultivation and livestock rearing and inability to get good prices from the input and output markets'.

In several countries a large and growing number of recipients of micro-enterprise credit are women. For example, female entrepreneurs comprise 93 percent of the Grameen Bank's current portfolio of 1.2 million borrowers, an increase from the 39 percent in the early 1980s.[73] In India, some of the womens' self-help groups have been extremely successful in starting thrift and credit that have moved on to off-farm income generation activities based on micro-credit or very small borrowing by the group. The non-farm activities in which rural women are engaged can be divided into the following broad groups of activities.

- Trading activities such as vending vegetables, fish, milk and fruits, breaking bulk and grading or sorting or simply hiring out bicycles or utensils.
- Activities based on traditional skills and using local raw materials such as leaf plate making, brooms, embroidery, bead work, making ropes, mats, bamboo products, laces, pandal making, durrie weaving, fabric weaving, pottery, etc.
- Production and trade in processed foods such as parboiled rice, jams, jellies, fruit bars, papads, honey, bread, biscuits, snacks, tamarind powder, spices, salt, etc.
- Collection, processing and sale of non-timber forest produce such as gums, resins, leaves, herbs, etc.
- Traditional service activities, such as running small hotels, provision stores and tea stalls or hiring out bicycles or utensils.
- Non-traditional activities such as making cards, notebooks, files, envelopes, raising broiler chickens, running small hotels, provision stores, tea stalls, etc.
- Skill-based non-traditional service activities such as hand pump repair, radio repair, running STD booths, cycle repair, photography, plumbing, welding, zip repair, etc.

An analysis of 10 financial models based on field work conducted prior to the formulation of the Rural Women's Development and Empowerment Project in the mid-1990s showed that trading activities such as vending milk and vegetables and hiring out cooking vessels yield relatively high returns. Trading products on a daily basis implies availability of immediate information on changes in market demand, prices and needs and automatic adjustment in purchases for supply, thereby minimizing the dangers from losses incurred in inventory pile-up. Parboiling rice also involves quick turnover, and high return when sale is to a niche market such as that based on assured demand from identification of migrants from rural areas who live in small towns or cities. Drudgery is high and returns low in the case of sewing garments for rural folk while drudgery is low and so are returns in the case of cycle hiring. Investment in large cooking vessels seems extremely lucrative and requires virtually no work. However ensuring demand is critical for recouping the initial investment.

Further, substantial improvement in the returns from any of these activities is possible with marginal interventions. For instance, women in trading activities such as vegetable vending could benefit substantially from access to timely and adequate credit on commercial terms. The local moneylender charges as much as 120 percent. Even if the SHG charges 18 percent this is relatively much lower. Similarly linkages could be established with larger markets thereby enabling higher net returns. Monitoring and regulatory systems are needed to check malpractice and charging of exploitative interest rates by MFIs and SHGs.

It needs to be noted that if the credit intervention is for existing off-farm activities the initial returns are high. If the credit intervention is for a new activity without determining marketing conditions and linkages, the risk is high.

Constraints

There are several factors constraining the promotion of off-farm activities among poor women, which include:

- Women have problems in getting access to credit due to lack of ownership of land and property that can be used as collateral.
- Low levels of literacy.
- Lack of knowledge with regard to bookkeeping and accounts.
- Rigid mindsets, parternalistic behavior and lack of gender and poverty sensitivity at multiple levels.
- Lack of familiarity with the external environment beyond the village thereby limiting mobility.

- Lack of confidence in dealing with officials in the districts and in sector-based corporations resulting in poor access to existing infrastructure.
- Since most of the women in the target group are at or below subsistence level, the cost of making incorrect choices is very high. In cases where the raw material is provided to groups of women and the product is marketed by an intervening agency, the women are far from empowered:
  - the women remain at the level of wage labor, and perhaps graduate to piece rate work.
  - Payment levels are extremely low and there is a sense of exploitation as well as dependency.
  - The agency may not have marketing knowhow and the women would get blamed for inventory pile-up.
  - There is no link between the women and the customer so the women producers receive no feedback regarding quality/market need.
  - Dependency of the womens' groups on the agency.
- NGOs may not have skills in identifying appropriate activities for income generation.
- If credit is taken for developing new skills or activities without ensuring adequate market demand the risk is high.

A Best Practice Case: ToeHold Artisans Collaborative

While access to micro-credit is an important first step, a combination of support measures are needed to ensure that the enterprise can, in a short period of time, become self-sustaining and grow without external support. While SHGs are an effective entry point for social and economic interventions, beyond saving there is need for investment of saving for economic growth of the individual and the group. As the Committee on Financial Inclusion notes, the challenge is *'to induce SHGs and their members to graduate into matured levels of enterprise, factor in livelihood diversification, increase their access to the supply chain, linkages to the capital market and appropriate production and processing technologies'*. In this section we look at the case of the ToeHold Artisans Collaborative to highlight that it is possible for enabling interventions to trigger sustainable growth of group-based micro-enterprise, reduce debt and bondedness, and increase income.

The ToeHold Artisans Collaborative (TAC) is an export-oriented women's group enterprise engaged in the making and marketing of handcrafted leather footwear of top quality, exquisite design and superior comfort in the small town of Athani in Belgaon district, about 720 km from Bangalore in Karnataka. The artisans' collective has been set up as a business enterprise with a customer-centric approach to the markets.

It is owned and governed by the artisans through women's self-help groups and has taken the traditional '*Kolhapuri*' footwear to 'couture' status in the trendiest mainstream international fashion markets. Athani is home to about 200 such families of artisans from a community with a rich legacy. Footwear craft is their only livelihood. However, prior to 2000 most worked as low wage, bonded labor in footwear factories owned by traders.

The process of transforming the artisans to entrepreneurs was supported by the Asian Center for Entrepreneurial Initiatives (ASCENT), a Bangalore-based not-for-profit social enterprise for entrepreneurship, partnered by the National Leather Development Programme (NLDP) and Central Leather Research Institute (CLRI), Chennai and UNDP. The project was executed from January 1999 to December 2002. The artisans incorporated their organization called ToeHold Artisans' Collaborative in October 2000 with their own brand 'ToeHold'. 150 women organized themselves into 11 women's self-help groups and jointly own the collective. A Common Facility Center and Raw Material Bank with a Design Studio has been set up at Athani where the artisans, women and men, receive training in design development, entrepreneurial skills and leadership and soft skills. Direct exposure to international markets has improved the understanding of international customers and their demands in terms of quality, delivery commitments and design. Each family now acts as a micro-enterprise where the woman and man are 'co-preneurs'. The financial stakes are with women but men are equal partners in all other activities and inputs. A vast collection of contemporary new designs has been developed. The ToeHold Artisans' Collaborative exports to very competitive mainstream international fashion markets.

The primary impact of the project was on the lives and livelihoods of 168 families. In addition there was secondary impact on other artisans who were not part of the collaborative. The impact was through:

1. Improvement in the product, its design, quality and price.
   - In 1997 there were about 25–30 popular designs but now there are more than 450 designs with the artisans and every year at least 30–40 new (demand driven) designs are being added. There are more artisans now who can turn out new design samples compared to earlier.
   - Use of high-quality basic raw material such as leather, new-age bonds and patterns, standardization and size consistency have become common practices with all ToeHold artisans. The product now meets very stringent quality standards and delivery commitments required by export markets like Japan and Italy.
   - In 2004 the price obtained per pair was around Rs 110–220 (ToeHold order) and around Rs 70–75 for (KVIC or Trader), as against the

price per pair in 1997, Rs 45–65 (LIDKAR or KVIC purchase). The margin per pair in case of a ToeHold order would range between Rs 20 to Rs 70.

2. Increased work, access to markets, development of business skills, quality assurance processes, credit worthiness and access to credit:
   - Increased productive engagement hours for artisan ranging from 700 to 1100 hours in 2004, compared to only about 500 to 700 hours during the 'bad patch' (1990–1997).
   - Higher return on invested time in 2004, as the products have moved up the value chain fetching a better margin.
   - Identity as members of a business entity (registered body empowered to conduct business). It has made it easier for suppliers, buyers, bankers, etc., to do business with the artisans.
   - Direct access to international markets. Apart from being a source of revenue these markets have provided excellent learning opportunities to the artisans.
   - Reduced dependence on Middle Tier Traders and better ability to negotiate with the middle traders for better deals.
   - Production systems and quality assurance processes have made significant difference to the product as well as the image of the artisans' collective.
   - At least 40 to 50 percent men and around 25 percent women have acquired basic business skills.
   - A few male artisans had limited exposure to some markets like Mumbai, Hyderabad, Miraj and Kolhapur. Now men and women are exposed to various markets due to active and guided participation in fairs, etc., thereby enabling understanding of customer needs / demands and delivery commitments, etc.
   - All artisans enjoy formal banking support through their SHGs. Several artisan families have individual credit limits of upto Rs 50,000. About 5 to 6 years ago suppliers of raw materials never gave any credit to the artisans. Now almost all suppliers extend about 15 to 30 days credit line to most artisans of ToeHold.
   - Even after the project and formation of ToeHold, the artisans continue to maintain their supplier-buyer relationships with all earlier buyers like the local Sahukars, exporters from Miraj, buyers in Hyderabad/ Mumbai as well as KVIC and LIDKAR. Interestingly buyer relations have improved due to the artisans' more mature business behavior and improved skills and ability to negotiate.
3. Increase in Income, Savings and Investment and reduction in Debt and Bonded Labor

- The annual income of family was around Rs 45,000–55,000 in 2004 compared to approximately Rs 16,000–28,000 in 1997 showing a 100 percent increase in many instances.
- All families now have savings ranging from Rs 10,000 to 60,000. In 1997 no family had savings beyond Rs 2,500. The total savings available with the SHGs itself is about Rs 3.25 lakh.
- The artisans invest their savings in Bank Fixed Deposits or Post Office Savings. Such investments are usually earmarked for children's higher education or marriage. Some families have invested in gold and ornaments. Three families have invested in constructing houses.
- In 1997 the average debt per family was around Rs 9,000 and the money was borrowed at interest rates ranging from 24 percent to 60 percent, usually leading to debt traps and bondedness to chappal traders. In 2004 there are only about 25 to 30 families with debt of more than Rs 2000.
- In 1997 close to 90 families under the ToeHold umbrella had at least one artisan bonded (economic bondedness; debt trap) to local chappal traders. In 2004 there are only about 25 ToeHold families with bonded members, i.e., a decrease of about 70 percent in bondedness. There have been three instances of debt repayment to the extent of Rs 30,000. In other cases the repayment is in the range of Rs 8,000–Rs 15,000. However there are about 60–65 non-ToeHold artisan families even now with at least one member bonded with debt burden around Rs 8,000–17,000.

4. Negotiation Skills, Networks and Knowledge
   - Artisans have learnt to negotiate better payment terms from other buyers as well. The price they get per pair of footwear from traders / other buyer, has increased by about 15–20 percent.
   - There have been instances of more than one family getting together to obtain and execute a large / complex order.
   - Artisans have learnt to outsource components for footwear from other artisan families. At peak production times they employ especially skilled persons for certain operations.
   - Three artisans have started petty shops, etc., with their own investment—they continue to make chappals but one family member runs the shop. An artisan has attempted to start a footwear shop in partnership with a relative in Agra.
   - Compared to 1997, artisans' knowledge and understanding of various markets and segments of customers, varying tastes, requirements like finish and comfort have all improved. They appreciate the role of e-commerce in this business and understand that the computer, digital

camera, and the Internet are effective tools of communication with the buyers. Direct exposure to international markets, outside cultures and buyers have broadened their thinking not only in business but also in terms of social issues like education for girl child, importance of higher education, etc.

- There is marked improvement in self-worth among the ToeHold artisans and increased confidence in dealing with local administration, banking and financial institutions, and in interacting with outsiders (buyers, visitors, etc.).
- Artisans have now networked and built relationships with several stakeholders and their relationships with the local traders; KVIC and LIDKAR as well as chappal factory owners have not suffered.
- Changes in caste dynamics: A general improvement in the mainstreaming of the so-called 'Samagaaras' (SC) is felt both by the artisan families as well as the general public of Athani.

5. Health, Nutrition and Literacy have improved
   - Families are buying more grocery with less seasonal variation. The purchase is now weekly and by payment of own money. Consumption of vegetables, milk and eggs and meat has increased. Clean drinking water is now available in the artisans' colony. The colony is cleaner now due to awareness and demand and hence more frequent cleaning by the town municipality workers.
   - A block of common toilets with water facility is made available on a pay and use basis.
   - Hygiene has vastly improved in the last 5–6 years.
   - Incidence of repeated ailments have come down in the last 6–7 years.
   - Adult numeracy has increased from 85 percent for males in 1997 to 90 percent in 2004 and 45 percent for females in 1997 to 65 percent in 2004.
   - Adult literacy has increased from 65 percent for males in 1997 to 70 percent in 2004 and 10 percent for females in 1997 to 30 percent in 2004.
   - There are (approximately) 145 children of schoolgoing age—85 boys and 60 girls. In 1995–97 school enrolment was about 60 percent for boys and 30 percent for girls. In 2004 it was about 85 percent for boys and 70 percent among girls. Some children now even go to 'Balwadis' (nursery school) while none went in 1997. About 20 percent children now go to renowned schools paying fees ranging from 1500 to 3000 per annum. There are two B.E. Computer Science degree holders (boys) and two B.A / B.Com degree holders (girls) among the children.

The model used involved a choice of institutions at different levels. The institutions chosen are depicted in Table 9.8 below:

TABLE 9.8 Choice of Institutions

Institution	Level	Functions	Legal Personality
Women's and Men's SHGs	Grassroots	Savings and credit Organizing production from member households	Informal
ToeHold Artisans' Collaborative	Cluster Level	Collecting orders from SHGs and making payments to them for their work; collective marketing, establishing linkages with external resources institutions	Section 25 Company
ASCENT	National	Not-for-profit social enterprise for fostering entrepreneurship, individual and group enterprise development, capacity building, technology transfer, business models with social processes, etc.	

Source: Adapted from Chatrapathy ToeHold Artisans Collaborative, Solution Exchange res11070725.

The ToeHold Case is a successful model or pathway out of poverty for a group of 150 women organized into 11 SHGs. Support provided by a range of specialists and institutions such as the Government of Karnataka, ASCENT, CLRI, NLDP and UNDP enabled the moneylender-indebted and bonded artisans to develop business skills, design skills, credit worthiness and become micro-entrepreneurs. Can this be replicated? Can it be scaled up?

Conclusions

Most of India's 301.7 million people in poverty do not have access to banking services or formal sources of credit. Credit without collateral has traditionally been available only at exorbitant rates of interest. The poor lack access to land and other assets. Illiteracy, poverty and lack of access to institutional credit resulted in widespread indebtedness and immiserisation of the Indian peasantry. The financially excluded primarily comprise marginal farmers, landless laborers, oral lessees, self-employed and unorganized sector enterprises, urban slum dwellers, migrants, ethnic minorities and socially excluded groups, senior citizens, the disabled, and women. Efforts are being made to include the financially excluded but mere opening of bank accounts

will not make a dent on poverty. Providing access to credit at reasonable rates of interest and financial services at affordable prices are important first steps but are not enough for poverty reduction. As the ToeHold case shows, enabling people to get out of poverty in a sustainable way requires a combination of support measures that go well beyond just access to micro-credit.

Notes

1. NABARD has identified 13 such States. The Rangarajan Committee (2007) on Financial Inclusion has recommended that NABARD should open dedicated project offices in these states.
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10 Infrastructure Development and Poverty Reduction*

Introduction

The acceleration in India's economic growth in the last 25 years has led to expectations of faster reduction in the incidence of poverty. This expectation has not been entirely belied although it is now increasingly clear that concerted efforts are needed to reduce poverty because it is much more difficult to push the 'hard core' poor above the poverty line than those who are close to the poverty line (Working Group on Poverty Elimination Programs 2006). The estimates based on the latest consumption expenditure survey of households show a decline in the percentage of households below the poverty line in rural India to 29.18 in 2004–2005 as compared to 37.26 in 1993–1994, which is a decline in the head count ratio of rural poverty by 1.97 percent per year.[1]

Researchers usually give greatest weightage to agricultural productivity among the determinants of rural poverty in India. Dev[2] lists the determinants of rural poverty as agricultural output, inflation rate or relative food prices, non-agricultural employment, government's development expenditure and infrastructure and human development. Besides these 'meta factors' the individual characteristics of the poor highlight the reasons why there is 'hard core poverty'. For example, the social backwardness, lack of education, poor health status and assetlessness easily describe a large proportion of the poor. There are thus layers of factors that determine the income level of individual households: the meta factors or factors that affect all the households in the same manner such as village size, village characteristics, characteristics of the district or state and the micro level characteristics such as the social status of the household, education status, health status, housing conditions and so on. The infrastructure is generally referred as the facilities at the

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village level such as whether the village is connected by a 'pucca road', whether the village has access to electricity or whether the village has a telecommunication facility.

Poverty reduction programs have aimed at addressing many of these deficiencies at different levels: regional, household and individual. The recognition that economic growth alone is not sufficient to bring down incidence of poverty has led to measures that can make a direct impact on the income of the poor. For instance, employment guarantee programs, child nutrition programs, improved access to primary health and education services in rural areas have been designed to provide certain minimum essential services and minimum income levels to the rural poor. But increased public expenditure on anti-poverty programs is possible only when the government's ability to spend also improves, which is possible with higher economic growth. Economic growth, while not a sufficient condition, is important for achieving poverty reduction both directly and indirectly. The segmentation of labor markets and output markets make participation of the poor in the opportunities created by economic growth difficult as they are not equipped with the skills that may be necessary.

One of the factors often cited as a constraint on economic growth is 'physical infrastructure'. Services from infrastructure sector such as power, transportation and communication are essential inputs for economic activity. Poor state of infrastructure facilities would mean that the production process is likely to be inefficient, thus reducing the opportunities for further economic growth. Infrastructure facilities were generally provided first in urban areas rather than rural areas mainly because of the relatively lower cost of supplying these services to more densely populated urban areas and partly because these services were critical to sustain the industrialization process which is again 'urban centered'. The spread of electricity supply to rural areas was motivated by the need for expansion of irrigation rather than rural industrialization. Improving 'road connectivity' of the villages was meant to provide greater access to markets.

The poverty reduction programs focus on direct poverty alleviation rather than growth-induced poverty reduction. Infrastructure development happens to be important for both these channels of poverty reduction as a number of anti-poverty programs also lead to the construction of assets including rural roads. Physical infrastructure development, therefore, has significant implications for poverty reduction in rural areas.

In this chapter we review the channels by which infrastructure development has led to poverty reduction in rural areas and the scope for exploiting these linkages further to reach the goal of elimination of poverty. Having reveiewed the available literature—both Indian and international—on the channels by which infrastructure development affects poverty reduction,

we will indicate the gaps in infrastructure development in rural India to highlight the efforts that are needed to bring about more sustainable economic development in rural India.

Channels of the Impact of Infrastructure Development on Poverty Reduction

The UN Millennium Development Goals (MDGs) include halving of extreme poverty and hunger by 2015. Poverty was initially regarded simply as being a state of economic deprivation. Thus, all measures were directed to ameliorate this deprivation by either supplementing the income of the poor through employment or through subsidized transfers. But now poverty is understood in a more holistic manner, and it is clear that the multi-dimensionality of poverty and the heterogeneity of the poor are central to poverty reduction strategies.

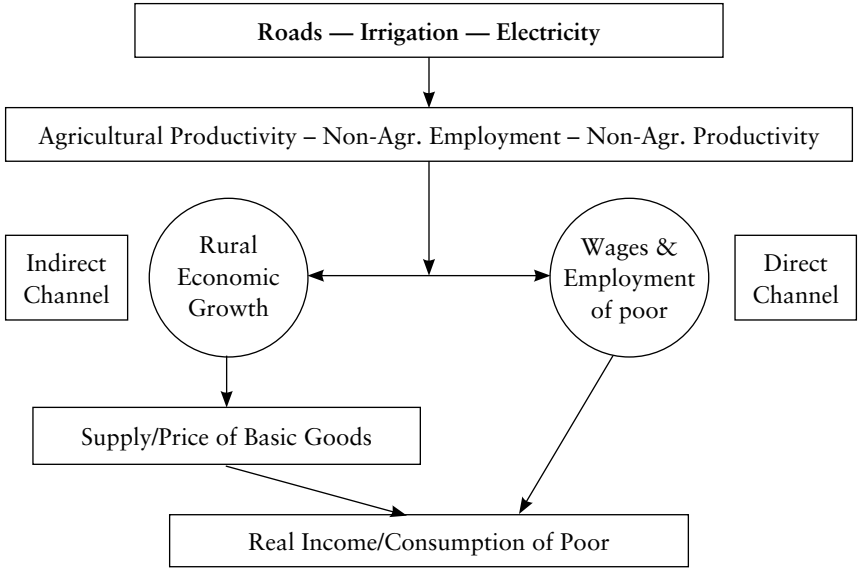
The diverse features of poverty have led to different strategies of poverty reduction. The *World Development Report* (2000–2001) discusses three pillars of poverty reduction—promoting opportunity (access to resources, services and productive employment), enhancing security (reducing vulnerability to shocks), and facilitating empowerment (increasing participation of poor people in decision-making).

There are two broad layers of factors that influence the incidence of poverty and its dynamics. There is the set of household or individual level characteristics or the 'micro factors' and then the set of 'meta factors' that are common to all the households in a region. The micro factors include (*i*) possession or access to physical assets such as land and housing, (*ii*) quality of human resources with the household, including health and education status of the household members, and (*iii*) social class. The meta factors include (*i*) infrastructure at the village level, (*ii*) employment opportunities accessible to the village population, and (*iii*) quality of governance that facilitates economic growth and improves efficiency of the public spending.

Ali and Pernia provide a simple sketch of impact of infrastructure development on poverty reduction (Figure 10.1).

After the seminal contribution of Aschauer which brought infrastructure to the forefront as a determinant of growth and productivity, infrastructure's linkages with poverty have also received due attention.[3] In fact, it is now widely accepted that with sound governance and institutional frameworks the strong linkages between infrastructure and poverty could be exploited effectively to reduce poverty.

Another commonly used analytical framework for assessing the link between infrastructure and poverty reduction is to differentiate contribution of growth and inequality to decomposition of poverty reduction into



Source: Adapted from Ali and Pernia (2003).

FIGURE 10.1 Analytical Framework Depicting the Links between Infrastructure and Poverty Reduction

contribution of growth and inequality. As Kanbur points out, increase in per capita income reduces poverty if inequality is held unchanged and an increase in inequality increases incidence of poverty if income remains unchanged.[4] Does infrastructure development increase growth and increase inequality? It is here that the institutional design of infrastructure development and the interaction of micro factors and access to infrastructure determine the net impact of infrastructure development on the incidence of poverty or exit from poverty.

A third aspect of the link between infrastructure development and poverty reduction is the influence of initial conditions and the fundamental economic incentives affecting the location of economic activity. For example, Gunatilaka points out that 'introduction of macroeconomic liberalization policies designed to induce export-oriented industrial growth would encourage the concentration of new economic activities such as export industries in the urban centre because of its initial comparative advantages'.[5] With the exception of agro-processing industries, rural locations may become less attractive to other industries even with improved infrastructure. In order to benefit from growth in this scenario, individuals—poor or non-poor—would have to move to urban centers to find employment which may be facilitated by better infrastructure.

The transmission of poverty-reducing impact of infrastructure development to individual households is affected by micro-level factors such as the

occupational skills of individuals. Investments in infrastructure provide employment and thus wage income to the poor, reflecting the direct channel of the impact of infrastructure development on poverty. Many of the rural employment programs aim to construct rural infrastructure. Provision of infrastructure has a positive impact on rural economic growth affecting the supply and prices of basic goods leading to a positive impact on poverty. There is potential for adverse effects if the infrastructure leads to greater sale of output outside the village without a simultaneous improvement in the inflow of goods that meet the needs of the village. Public infrastructure of acceptable quality stimulates economic growth and is a prerequisite for economic and social development.[6]

The impact of infrastructure development on the rural economy and on rural poor can be more clearly understood if we consider specific types of infrastructure services. Access to basic infrastructure services (e.g., clean water, sanitation) itself is often regarded as an indicator of well–being.[7] Besides, these infrastructure services can reduce poverty via their positive impact on the health status of individual households by decreasing the incidence of illness and a concomitant decline in productivity.

In the case of development of roads in rural areas the impact can be seen, first and foremost, through an increase in non-farm employment and productivity. It also allows improved access to markets which in turn has a positive impact on agricultural productivity. Faster mobility also ensures better job opportunities and raises the returns to assets of rural households. The other channels through which rural infrastructure projects contribute to poverty reduction include improving access to credit; strengthening local governance in rural areas by improving communication and interaction with outside agencies; and promoting social and economic empowerment of the rural population again through greater interaction with outside agencies.

Another important infrastructural input, access to electricity, makes possible an expansion of irrigation which is the most important driver of agricultural productivity. It helps the landless poor since as a result of higher agricultural productivity, the demand for labor increases and real wage rates improve. Electrification can also lead to an expansion of non-farm activity in rural areas with the development of rural industries.

The development of rural roads and rural electrification are two important rural development programs of the central as well as state governments in India. Both these activities have been essentially in the public sector domain, funded by the government. The cost of providing these infrastructure services, on a per capita basis, is undoubtedly greater in rural areas as compared to the provision of these services in urban areas. But it should also be recognized that these key services can be expected to attract other investments in rural areas leading to economic growth.

The government effort towards infrastructure development in rural areas has not been limited by the motivation to catalyze economic growth. In the case of roads as well as electricity, the stated intention of the government has been to achieve full coverage of rural areas, although with different timelines. Full coverage of the population remains only a stated goal given the enormous resources that may be required to implement these goals.

Certain conditions do exist, however, which may hamper both the growth effects and direct effects of infrastructural development. First, the growth effect may be smaller if there are no complementary conditions for growth such as large enough markets to absorb the increased supply of produce from the rural areas or the presence of entrepreneurial skills in rural areas. The direct effect on the living conditions of the poor may be small because of poor governance reflected in the mis-identification of the poor for targeting program benefits. The positive effects may also be smaller if the quality of services deteriorates given the relatively more expensive nature of services when extended to rural areas. There are factors that can enhance the positive impact of infrastructure on poverty reduction. For example, better skills, health conditions and more efficient governance institutions can help the poor improve their productivity in economic functions and get better wages when infrastructure conditions improve. Understanding the conditions in which the impact on poverty reduction would be the greatest would thus help in maximizing the achievement of poverty reduction.

Empirical Evidence on the Impact of Infrastructure Development and Poverty Reduction: The Case of Rural Roads and Rural Electrification

The analysis of the impact of infrastructure development on poverty reduction has to take into account both the direct and indirect effects. Various econometric studies have attempted to trace the link between infrastructure, growth and poverty reduction. These studies have made use of elasticities and correlation measures to gain insight into the connection between infrastructure and poverty reduction. However, not all studies in this area consider the impact of infrastructure development on poverty reduction. Some studies consider only the link between infrastructure development and economic growth.

Canning and Pedroni investigated the long-term consequences of infrastructure provision on per capita income in a panel of countries over the period 1950–1992.[8] They report that telephones and paved roads are provided at the growth maximizing level on average, but are under-supplied in some countries and over-supplied in others. In contrast, they find evidence that electricity-generating capacity is under-provided on average. In other

words, there is a need to ensure that the development of the electricity sector does not lag behind relative to the needs of an economy.

Based on state level data Chaturvedi and Upadhyay (2004) examined the correlation between infrastructure variables and poverty ratio. The infrastructure variables included road length per thousand kilometers, tele density, area under one post office, index of social infrastructure, railway density, per capita electricity consumption, rail length per unit area. They found a negative correlation of poverty with infrastructure in all the cases including roads showing that when infrastructure improves poverty ratio declines (Table 10.1).

TABLE 10.1 Correlation Between Incidence of Poverty and Infrastructure Variables

Infrastructure variable	Period	percent Below Poverty Line (1999–2000)
Per Capita NSDP	1999–2000	–0.24
Road Length Per 000 Km	2001	–0.174
Tele Density	2000	–0.758
Area Under One Post Office	1999–2000	0.209
Index of Social Infrastructure	1999	–0.719
Railway Density	1996–97	–0.348
Per-capita Electricity Consumption	1999–2000	–0.624
Decadal Growth Rate of Population	1991–2001	–0.526

Source: Chaturvedi and Upadhyay (2004).

The positive relationship between infrastructure and economic output has also been clearly brought out through the rank correlation coefficient using the state-level data in the same study (Chaturvedi and Upadhyay 2004).

TABLE 10.2 Coefficient of Rank Correlations: Infrastructure Indicators with Poverty Ratio and Per-capita NSDP

Variable	With Poverty Ratio	With PC NSDP
Per-capita Electricity Cons.	–0.733	0.805
Road Length Per, 000 Km	–0.703	0.085
Tele Density	–0.878	0.878
Area Under One Post Office	0.146	–0.147
Index of Social Infrastructure	–0.791	0.771
Rail Length Per Unit Area	–0.421	0.223

Source: Chaturvedi and Upadhyay (2004).

A study was conducted by MAITREE on the impact of infrastructure seen within the aegis of the Poverty Alleviation Program in Maharashtra for the period 1994–1995 to 1998–1999.[9] It found that the Jawahar Rozgar Yojana (Jawahar Employment Program) provides wage employment to Below Poverty Line (BPL) families in rural development activities like construction of roads, drainage, schools, etc. JRY has thus generated employment and gainful employment for the under-employed. This could push one BPL family per village above the poverty line every year in all the regions where JRY is operational.

Jalilian and Weiss report a cross-country study on Bangladesh, India and PRC, where they concluded that infrastructure is poverty reducing both indirectly through growth and directly when it interacts with human capital.[10] The estimates of poverty elasticity show that on an average a 1 percent increase in infrastructure stock per capita, holding human capital constant, is associated with a 0.35 percent reduction in the poverty ratio or 0.52 percent, when poverty is measured by $1–a-day or $2–a-day income. Also, an increase by 25 percent of human capital would increase the poverty elasticity with respect to infrastructure on an average by around 8 percent.

Yao further studies the impact of infrastructure investment (road) on rural poverty in PRC and India as derived from Fan et al.[11] The direct effect through increase in agricultural productivity accounts for close to 20 percent and 30 percent of the total poverty reduction effect in India and PRC, respectively. Non-farm employment and rural wages are over three-quarters and one-half of the total effect in India and PRC, respectively. The trickle-down effect of growth is higher in the case of PRC than in India (Table 10.3).

Cook et al. found that various infrastructure projects (transport and energy) taken up by ADB and the World Bank in various countries have poverty reduction as an objective besides economic growth.[12] For example, an investment project (road) in Zambia was expected to generate employment in construction and road maintenance (30,000 new jobs) and thus reduce poverty. Similarly in Brazil, provision of basic social and economic infrastructure and thus employment and income-generating opportunities is expected to reduce poverty.

Further, ADB conducted a study on PRC's Shaanxi province, where the government has invested heavily on roads, rail and energy, which revealed that people facing extreme poverty could not avail of the advantage of the investment in transport sector. This study also indicated that the existing policies and institutional arrangements constrained the positive impact of investment in transport and energy on the poor.

The same study by ADB showed that in Thailand, rural road improvement had no significant impact on occupational choice, a finding significantly strong for the poor and ultra poor.

TABLE 10.3 The Impact of Infrastructure Development on Poverty Reduction

Poverty-reducing Effects of Rural Road Investment	India		PRC	
	Elasticity*	Percent Share in Poverty Reduction	Elasticity*	Percent Share in Poverty Reduction
Direct effect through increase in agricultural productivity	–0.0119	17.92	–0.0450	28.46
Direct effect through increase in non-farm employment	–0.0300	45.18	–0.0417	26.38
Direct effect through increase in rural wages	–0.0204	30.72	–0.0399	25.24
Indirect follow-on effect through higher economic growth	–0.0041	6.18	–0.0315	19.92
Overall	–0.0664	100.00	–0.1581	100.00

* The elasticity estimates measure the percentage changes of the rural poverty incidence with respect to road infrastructure investments, working through different channels.

A similar study was also conducted in Gujarat. Infrastructure investment in transport and electricity led to an increase in wage rate besides increasing the value of land. It also led to an improvement in the village economy, as evidenced by the better prices for farm products, more product sales, and a larger number of wage paying jobs. But, there were hardly any changes in occupation, except in areas next to the port. As a matter of fact, the econometric analysis suggested that neither transport nor electricity had a significant impact on poverty in the Panch Mahal district of Gujarat.

Jalan and Ravallion and Ravallion and Datt on the basis of their studies conclude that a significant proportion of poverty in poor areas could be attributed to 'geographic capital'.[13] The prominent elements of the so-called geographic capital include infrastructure deficiency and lack of access to outside markets. The poor would be unable to improve their position unless they are able to overcome these geographic poverty traps. To make these conclusions more convincing, we could refer to Sawada's study on roads and irrigation which concludes that infrastructure has a role to play both in relation to transient poverty and structural poverty.[14]

Ali and Pernia (2003) in their analysis concluded that roads have strong indirect and direct effects on poverty reduction, more so when complementary investments like schooling exist. However, electricity's link to the welfare of the people is ambiguous, maybe because it is the least essential and entails high costs.[15]

It must be said at the end, however, that over a period of three decades, there has been consistent improvement both with respect to roads and electrification throughout rural India. Twelve out of 17 major states can claim access to electricity in more than 90 percent of their villages although the actual percentage of households with access to electricity is much smaller and the quality of electricity supply in terms of voltage and number of hours of supply in a day may be quite poor. Nevertheless, the percentage of villages with access to electricity has increased from 47.26 percent in 1981 to 86.51 percent in 2001.

On the other hand, the percentage of villages that are 'connected' by roads is relatively smaller. This figure has increased from 28.08 percent in

TABLE 10.4 Rural Infrastructure and Incidence of Poverty in Indian States

State	% of Villages Electrified			% of Villages Connected			Rural Poverty HCR %		
	1981	1991	2001	1981	1991	2001 Habitations	1983	1993	2004
Andhra Pradesh	65.5	99.9	99.9	39.1	58.2	89.9	27.3	16.6	10.9
Assam	25.6	95.4	77.1	51.9	67.0	59.8	41.9	44.4	23.1
Bihar	31.8	68.4	71.0	28.9	33.9	59.6	64.9	57.2	43.1
Gujarat	68.5	98.8	99.5	53.6	85.27	85.4	27.9	22.4	19.8
Haryana	100.0	100.0	100.0	97.4	99.0	99.0	21.8	26.6	13.4
Himachal Pradesh	59.4	99.7	99.3	39.0	44.6	34.6	17.8	29.3	12.5
Karnataka	62.6	98.0	98.8	28.7	47.7	79.7	37.5	30.2	23.7
Kerala	100.0	100.0	100.0	100.0	100.0	64.0	38.5	26.5	12.3
Madhya Pradesh	35.9	84.1	97.1	20.8	27.5	15.5	48.2	40.4	38.2
Maharashtra	77.2	99.4	99.9	29.7	47.0	94.6	45.0	37.7	30.4
Orissa	40.0	64.6	75.0	1.7	35.7	41.2	67.5	50.1	47.8
Punjab	99.5	100.0	100.0	99.0	99.1	91.7	14.3	13.7	9.6
Rajasthan	45.4	74.9	94.8	16.6	34.3	42.0	37.7	26.9	18.9
Tamil Nadu	99.1	99.9	100.0	51.4	69.3	92.9	56.2	33.0	23.0
Uttar Pradesh	37.6	71.4	79.3	8.3	43.8	44.5	46.4	42.3	34.1
West Bengal	37.5	69.4	78.1	44.7	46.0	48.8	61.6	37.4	28.5
All India	**47.3**	**81.3**	**86.5**	**28.1**	**46.5**	**60.7**	**45.8**	**37.3**	**29.2**
Correlation Coefficient with Incidence of Rural Poverty	–0.52	–0.68	–0.69	–0.58	–0.60	–0.45			

Note: Data are taken from a number of sources including National Institute of Rural Development (2005), Dev (2007) and Various Issues of Statistical Abstract of India (Government of India). The data period does not strictly correspond to the years 1981, 1991 and 2001.

1981 to 46.47 percent in 1991. In 2001, 60.68 percent habitations had access to roads, which means the percentage of villages to enjoy such connectivity would have been even higher.

In a rigorous and detailed study, Fan, Hazell and Thorat (1999) examined the causes for the decline in rural poverty in India and the role that government investments have played in the decline in rural poverty (see Table 10.5).[16] The paper quantified the effectiveness of different types of government expenditures in contributing to poverty alleviation. The study used state-level data to estimate an econometric model to calculate the number of poor people pushed above the poverty line for each additional million rupees spent on different expenditure items. The model is also structured to enable the identification of the different channels through which different types of government expenditures affect the poor, distinguishing between direct and indirect effects.

The results of the study show that government spending on productivity-enhancing investments, such as agricultural research and development, irrigation, rural infrastructure (including roads and electricity), and rural development targeted directly at the rural poor, have all contributed to a decline in rural poverty and growth in agricultural productivity. The study further finds that additional government expenditure on roads has the largest impact on poverty reduction as well as a significant impact on productivity growth. On the other hand, additional spending on the power sector has no significant impact on poverty reduction or productivity improvement. The additional investments in soil and water conservation also have no significant impact on poverty reduction.

TABLE 10.5 Impact of Government Expenditure on Rural Poverty in India

Expenditure Variable	Elasticity of Poverty	Total Factor Productivity	Reduction in Number of Poor for an Additional Expenditure of Rs One Million
R& D	–0.065	0.0296*	91.4*
Irrigation	–0.007	0.034*	7.4
Roads	–0.066*	0.072*	165.0*
Education	–0.054*	0.045*	31.7*
Power	–0.002	0.0007	2.9
Soil & Water Conservation	–0.0004	0	6.7*
Rural Development	–0.019*	NA	27.8*

Notes: Numbers in parentheses are ranks. TFP is total factor productivity. NA= not available. * = Significant at the 5 percent level.

Source: Fan, Hazell and Thorat (1999).

The relative effects of alternative avenues of government spending on infrastructure should be viewed with caution. Different types of infrastructure have an impact on the economy in complementary ways. For example, the development of roads opens up markets for both agricultural produce and inputs. However, the availability of electricity helps improve options for storage and processing of agricultural produce as well as inputs.

We cite below two other studies that have looked at the impact of infrastructure development on rural poverty. Bhide and Mehta examine the factors which enable the rural poor to find their way out of poverty.[18] Using data on a panel of about 3,000 rural households, they find that the relationship between village-level infrastructure[19] and incidence of poverty is not uniform in all the cases considered. However, in the analysis of exit from poverty, village-level infrastructure is found to be an important 'interrupter'. In addition, the study finds that urbanization of the district-level population also influences 'exit' from poverty. In other words, increased potential for availability of jobs in the nearby urban areas is an important 'poverty reduction' factor and better infrastructure can help in accessing such employment for the poor.

Using the panel data for three waves of the survey, Bhide and Mehta (2005) report more conclusive results on the impact of village-level infrastructure and exit from poverty.[20] They find that both the factors discussed above enabled the poor to escape from poverty during the period 1970–1971 to 1981–1982 as well as between1981–1982 and 1998–1999.

The Status of Rural Roads Development and Programs in India

The challenge of rural infrastructure development has been huge in India. The investments needed in building a rural road network have been estimated at different times and the steps taken in meeting the objectives have been incremental. There have been three long-term plans for the roads sector, known as the Nagpur Plan (1941–1961), Bombay Plan (1961–1981) and Lucknow Plan (1981–2001). In each case, specific targets for road construction were fixed taking into account the population size of the villages and towns and in each case, the actual achievement exceeded the targets. The progress of road development in the country is given in Table 10.6. The total roads network expanded by 2,916 km between 1950–1951 and 2005–2006, of which 2,784 km were major district roads and rural roads. The rest of the network comprised national and state highways.

In assessing the progress of development of roads in the country, the Planning Commission (2006) notes that the Central government efforts were weak until the Fifth Five Year Plan period when funds began to be allocated for various rural development programs. The programs such as Minimum

Needs Programme (MNP), National Rural Employment Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP) and Jawahar Rozgar Yojana (JRY) included funds for the development of rural roads. Under the Minimum Needs Programme, the Fifth Five Year Plan (1974–1979) envisaged the connectivity of all villages with a population of 1500 and above, as per the 1971 census, with an all-weather road by the end of the Fifth Five Year Plan. The progress was, however, slow. As shown in Table 10.6, only 46 percent of villages with population above 1000 were connected by all-weather roads by 1980–1981. By 2000, however, almost all villages with population over 1500, about 86 percent with 1000 to 1500 population, and 43 percent with less than 1000 population were connected with all-weather road facility.

Based on an assessment of the goals and past experience, in 2001, the Indian Roads Congress presented a plan for achieving full road connectivity for rural India. The strategy proposed for planning rural roads emphasized the need for district-level planning aiming to connect all habitations with minimum population of 100 and above by all-weather roads.

TABLE 10.6 Progress of Development Efforts in the Roads Sector

Item	1950–1951	1960–1961	1970–1971	1980–1981	1990–1991	2000–2001	2005–2006
Total Length (000 km)	400	515	915	1485	2327	3176	3316
Of which Surfaced Length (000 km)	156	234	398	684	1090	1600	1700
National Highways (000 km)	22	23	24	32	34	58	67
State Highways (000 km)	45	62	70	95	127	124	132
Major District Roads and Rural Roads (000 km)	333	429	821	1358	2166	2994	3117
Percentage of Villages with Population above 1000 Connected with all-weather Roads	32%	36%	40%	46%	73%	90%	92%
Overall Village Accessibility	20%	22%	25%	28%	44%	54%	60%

Source: Basic Road Statistics, Planning Commission and Road Development Plan Vision: 2021.

It is clear that larger villages have been prioritized for connectivity as have villages in coastal, hilly and desert regions in the country. The strategy included not only new roads but also an upgradation of existing roads.

The review and recommendations included in the Plan led to the launching of the Pradhan Mantri Gram Sadak Yojana (PMGSY) in 2000

and it is since then that there has been a considerable stepping-up of priority for the development of rural roads.

The Planning Commission estimated that there were 2,90,480 villages that were connected by all-weather roads as on 21 March 2000. Looked at in another way, there were 3,30,000 habitations without all-weather access out of the 8,25,000 habitations in the country. In other words, about 50 percent of the villages remained unconnected by all-weather roads and 60 percent of the habitations were unconnected using the same measure. The PMGSY set targets for rural road connectivity focusing on larger rural habitations and larger habitations in hilly areas.

The progress in achieving the target of providing all-weather roads for habitations of more than 1000 population could not be achieved by end-March 2007 (Table 10.7).

TABLE 10.7 Targets and Achievements of PMGSY Upto the End of Tenth Five Year Plan

Population of Habitation	Eligible Habitations Under PMGSY	Target Number of Habitations upto the End of Tenth FYP	Actual number of Habitations Connections Under PMGSY upto the End of Tenth FYP (end March 2007)
+ 1000	60,030	25,371	20,478
500 to 1000	79,208	14,854	13,193
250 or more	39,530	2,511	3,186
Total	1,78,768	42,736	38,487

Source: Planning Commission (2010).

A multi-objective four-year rural infrastructure program, called 'Bharat Nirman' was launched in 2005–2006. The program comprises six major rural infrastructure sectors: rural roads, telephone connection, irrigation, water supply, housing and electrification. Under the rural roads component, it aims to provide all-weather connectivity to all habitations with a population of 1,000 or more (500 or more in hill, tribal and desert areas) by 2009. The rural roads component of the Bharat Nirman program is part of the PMGSY: the Bharat Nirman program brings with it finances that can supplement the PMGSY resources.

The total number of habitations covered by the PMGSY upto the end of March 2009 was 62, 484. It is still just 50 percent of the original target but the targets set under the Bharat Nirman program may be met by the end of March 2011. Bharat Nirman had set out to provide all-weather road connectivity to all habitations with a population of more than 1000 in the 'plains' regions and habitations with more than 500 population in the hilly regions. The number of habitations targeted to be covered under Bharat

Nirman is 54,648. By the end of March 2009, only 31,924 habitations were provided connectivity under the program (Planning Commission 2010).

The investment needs of the proposed work are also huge. The PMGSY is expected to cover 1,60,000 habitations at a cost of Rs 60,000 crore. Based on more detailed assessment the number of habitations to be covered as per the PMGSY norms is 1,72,772 and the cost is Rs 78,418 crore. The fund for upgradation of the rural roads is estimated at Rs 59,033 crore. The pattern of changes in plan expenditures in road development is provided in Table 10.8.

TABLE 10.8 Trends in Plan Expenditure in the Road Sector

Plan Period	Average Investment Per Year	% Change over the Previous Period
First Plan (1951–56)	29.4	–
Second Plan (1956–61)	48.4	64.6
Third Plan (1961–66)	88.0	81.8
Period 1966–69	103.0	17.0
Fourth Plan (1969–74)	172.4	67.4
Fifth Plan (1974–79)	340.2	97.3
Sixth Plan (1980–85)	777.4	128.5
Seventh Plan (1985–90)	1,267.0	63.0
Period 1990–92	1,889.5	49.1
Eighth Plan (1992–97)	3,219.0	70.4
Ninth Plan (1997–2002)	7,866.2	144.4
Tenth Plan (2002–07)	11,898.0	51.3

Source: Planning Commission and IRC Road Development Plan Vision 2021.

More specific physical targets and financial requirements emerging from the Government of India (2006) are as follows:

- New Connectivity: About 78,000 habitations to be covered between 2007–2012. About 1,65,000 km of rural roads to be constructed and another 1,92,500 km of rural roads to be upgraded.
- In the Twelfth Five Year Plan (2012–2017), the balance 60,000 unconnected habitations would be provided with road connectivity requiring 1,05,000 km of new roads and upgradation of 58,000 km of rural roads.
- The financial requirements during the Eleventh Five Year Plan are projected as Rs 79,000 crore for new connectivity and upgradation of the rural roads.

- In addition, the financial requirement for maintenance of roads per year during the Eleventh Five Year Plan is Rs 14,000 crore.

The programs for the development of the roads sector discussed above are essentially for connecting villages to other villages or towns. But there is also a need to recognize transportation needs within the village. Gram Panchayats are responsible for the maintenance and development of these requirements. Although there are no specific financial allocations, in the Eleventh Five Year Plan, the Planning Commission has proposed that the development of intra-village roads should receive high priority in the larger villages, i.e., those with a population above 1,000.

The plans for raising financial resources for the proposed rural roads program consist of several approaches: budgetary support from the Central and State governments, the Central Road Fund which is made up of revenue from a central cess on petrol and diesel, a part of which is earmarked for the development of rural roads, agricultural market committee fees, various employment guarantee/employment generation schemes of the government and borrowing from various sources. The potential for private financing and public–private partnership appears to be relatively small in the development of rural roads.

Road Construction and Employment Opportunities

The employment potential for road construction in rural areas involving rural labor is evident from the above discussion. However, the size of the potential will depend on the technology used in road construction besides the quantum of work. There is potential for entrepreneurs also who can organize the work and implement it. The type of technology used will depend on a number of parameters of the work defined by local conditions. In the analysis provided by the GOI (2006), the labor component accounts for just 5 percent of the total construction cost in a 'highly equipment oriented' technology to 40 percent in a 'purely labor oriented' technology. Therefore, even with the intermediate technologies there is significant scope for employment generation in these programs.

The estimates based on the use of intermediate technology suggest that some 440 million man-days of employment would be created by the rural road development programs during the Eleventh Five Year Plan.

An assessment of the employment potential based on fixed coefficients is provided in Table 10.9.

Assessment of the Impact of Rural Roads Programs

A series of studies were undertaken in 2004 in Assam, Himachal Pradesh, Madhya Pradesh, Mizoram, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal to the assess socio-economic impact of PMGSY. The

TABLE 10.9 Employment Potential of Rural Roads

Period	Annual Investments (Rs Crore)	Employment Potential (Million Man-days)
2007–12	11,550	460
2012–17	17,400	700
2017–22	23,650	950
2022–25	28,800	1,150

Source: Government of India (2007).

studies were sponsored by the Ministry of Rural Development. The results are summarized below:

Sector	Impact
Farmers	Access to faraway markets; market access throughout the year; transportation of inputs became easier enabling crop diversification; taking up some of the livestock enterprises (dairy for instance).
Employment	Direct employment and self-employment avenues for local labor; more jobs in agriculture as diversification of agriculture became possible; more employment possibilities in nearby towns and villages.
Cottage industry	Pottery, brick kilns, handloom and agro-industries expanded.
Health, Education, Governance	Access to these services improved for the local population as their reach to nearby towns improved; services within the village also improved as service providers found it easier to come to the village.
Poverty Alleviation	Positive impact because of increased income from new employment opportunities.

Source: Government of India (2006).

A concurrent evaluation of PMGSY carried out by the Planning Commission (cited in Government of India 2006) gave a positive assessment of the program in terms of the impact on rural population and quality of work undertaken. However, concerns have been expressed in relation to the utilization of funds at the highest levels of government. Better monitoring of the program is essential to maximize its benefits.

An important concern that has been expressed in a review of the rural roads program by Mohapatra and Chandrashekher refers to the maintenance of roads.[21] They point to two issues: one is the fact that the PMGSY is a Central government program which funds the laying of an extensive rural road network but the maintenance of these roads then becomes

the responsibility of state governments. They do not provide any specific suggestion to address the concern but clearly specific budgetary provisions would have to be made by state governments for the maintenance of the rural roads.

A second related issue highlighted by Mohapatra and Chandrashekher relates to the potential role of Panchayati Raj Institutions in the maintenance of rural roads. The responsibility for the maintenance is consistent with the devolution of responsibilities envisaged in the various legislations on the devolution of powers to the panchayats. However, the issue of finances will remain the responsibility of the respective state governments.

The Status of Rural Electrification and Programs in India

Goals for Rural Electrification

Rural electrification has long been recognized in India as a means to achieve multi-dimensional development of the rural areas. However, given the overwhelming demands on resources, rural electrification was slow to develop. For example, Shankar notes that 'till 2003, rural electrification was considered as a by-product of the conventional electricity development plans based on commercial considerations and the universal electrification of all villages and all households was expected to be achieved in some distant future as a result of the trickle-down effect. The Electricity Act, 2003 has mandated for the first time that there shall be universal supply of electricity and that it should be achieved according to a time bound plan'. This is not to say that there were no plans and programs for rural electrification till the Electricity Act 2003. The motivation for rural electrification was primarily the need to boost agricultural production through an expansion of irrigated areas.[22] Steps were taken over time to meet this need.

The Rural Electrification Corporation was established in 1969 to finance the various projects of rural electrification, when only 13 percent villages were electrified. The Kutir Jyoti Program (KJP) was started in 1988–1989 to provide a single-point light connection to all BPL households in the country. The Minimum Needs Program (MNP), Pradhan Mantri Gramodaya Yojana (PMGY), Accelerated Rural Electrification Program (AREP 2002), Rural Electricity Supply Technology Mission (REST 2002), and now more recently the Rajiv Gandhi Gramin Vidyutikaran Yojana (RGGVY 2005) have all sought to achieve rural electrification (Modi 2005). The most recent of these programs, RGGVY, which subsumes AREP, MNP and KJP aimed at 100 percent electrification of all villages and habitations in the country, electricity access to all households, and free-of-cost electricity connections to BPL households within five years since it began, which meant that nearly

6 million households were to be given electricity connections every year for the next four years.[23] The targets have not been met. As on June 30, 2010 only 81,317 villages have been electrified against the target of 1,18,499 villages and only 11.7 million poor households were provided with free electricity connections against the target of 24.6 crore poor households.[24]

Box 10.1

It is important to state here the definition of an electrified village as specified

'under the Ministry of Power's O.M. No.42/1/2001–D(RE) dated 5th February 2004…:

A village would be classified as electrified based on a Certificate issued by the Gram Panchayat, certifying that –

a) Basic infrastructure such as Distribution Transformer and Distribution Lines are provided in the inhabited locality as well as a minimum of one Dalit Basti / hamlet where it exists; and
b) Electricity is provided to public places like Schools, Panchayat Office, Health Centers, Dispensaries, Community Centers etc.; and
c) The number of households electrified are at least 10 percent of the total number of households in the village.

The Gram Panchayat Village Council or equivalent shall issue the first Certificate at the time of the village becoming eligible for declaration as electrified. Subsequent to the village being declared as 'Electrified', the Gram Panchayat shall certify and confirm the electrified status of the village as on 31st March each year. If the Gram Panchayat unduly delays certification, the State Government may get verified the status of electrification through another appropriate independent agency'.

The broad goals of rural electrification referred by Shankar and Kalra et al. as 'AARQA' goals are:

Accessibility—electricity to all households by 2012
Availability—adequate supply to meet demand by 2012
Reliability—ensures 24 hour supply by 2012
Quality—100 percent quality supply by 2012
Affordability—pricing based on consumer's ability to pay.

In the context of rural electrification, the specific goals are,[25]

- Provision of access to electricity to all households by year 2009.
- Quality and reliable power supply at reasonable rates.

- Minimum lifeline consumption of 1 unit per household per day as a merit good by year 2012.

The ambiguity in terms of specific goals arises because even in September 2007, the Minister for Power reportedly said in a speech that 'only 56 percent of 6,38,365 villages in India are yet to get electricity connection'. The GOI report also cites that 120,000 villages were to be electrified by 2009 but the gap would be bridged by 2012. The Working Group on Power notes that in order to bring about access to electricity to all rural households, electricity coverage needs to be extended to all hamlets/habitations of the country.[26] In case the funding of RGGVY falls short it is proposed that in the first phase, all un-electrified villages and hamlets with a population higher than 300 be covered. The latest target is to cover additional 1,00,000 villages and 17.5 million poor households under RGGVY by March 2012 (Ministry of Rural Development 2010).

TABLE 10.10 Status of Village Electrification in Select States in India

State	Total No. of Inhabited Village as per 2001 Census	Total No. of Villages Electrified (Dec. 2005)	Balance Unelectrified Villages (Dec. 2005)
Andhra Pradesh	26,613	26,565	48
Assam	25,124	19,081	6,043
Bihar	39,015	19,251	19,764
Jharkhand	29,354	7,641	21,713
Gujarat	18,066	17,940	126
Haryana	6,764	6,759	5
Himachal Pradesh	17,495	16,891	604
Karnataka	27,481	26,771	710
Kerala	1,364	1,364	0
Madhya Pradesh	52,117	50,474	1,643
Chhattisgarh	19,744	18,532	1,212
Maharashtra	41,095	40,351	744
Nagaland	1,278	1,216	62
Orissa	47,529	37,663	9,866
Punjab	12,278	12,278	0
Rajasthan	39,753	37,276	2,477
Sikkim	450	405	45

Contd

Table 10.10 *Contd*

State	Total No. of Inhabited Village as per 2001 Census	Total No. of Villages Electrified (Dec. 2005)	Balance Unelectrified Villages (Dec. 2005)
Tamil Nadu	15,400	15,400	0
Uttar Pradesh	97,942	57,042	40,900
Uttaranchal	15,761	13,131	2630
West Bengal	37,945	31,705	6240
Total (States)	5,92,857	4,73,287	1,19,570
Total UTs	875	875	0
All India	**5,79,860**	**4,64,912**	**1,14,948***

Notes: * As per the new definition of village electrification (effective from 2004–05) the total number of unelectrified villages is estimated to be around 1,25,000 based on Rajya Sabha Unstarred Question No. 1089, dated 2.3.2006.

Source: Indiastat.com

TABLE 10.11 Percentage of Households with Electricity: 2001 Census

State	Percent
Andhra Pradesh	67.3
Bihar	10.3
Chhattisgarh	53.1
Gujarat	80.4
Haryana	82.9
Himachal Pradesh	94.8
Jharkhand	24.3
Karnataka	78.5
Kerala	70.2
Madhya Pradesh	70.0
Maharashtra	77.5
Orissa	26.9
Punjab	91.9
Rajasthan	54.7
Tamil Nadu	78.2
Uttar Pradesh	31.9
West Bengal	37.5

Source: Kalra et al. (2007).

Strategies to Achieve Rural Electrification

The Electricity Act 2003 and the Rural Electrification Policy 2006 have set the agenda for rural electrification. They have also outlined strategies for achieving the goals. There are technical, financial and institutional components of the strategies outlined by these policies. At a broad level, we should note that the overall goals for the power sector set by policies in terms of supply capacities are often not met. Therefore, it is not enough to set out the goals in terms of rural electrification alone but it is important to achieve the goals at the level of supply or generation of electricity.

The Working Group on Power noted that 'the capacity addition target of 41,110 MW comprising 14,393 MW hydro, 25,417 MW thermal and 1,300 MW nuclear was fixed for the 10th Plan. A moderate target was set for state and private sectors keeping in view the preparedness of various state power utilities and IPPs. However, a total capacity of 12,516 MW (excluding 3,009 MW projects which could not be taken up), amounting to 30 percent of the target, is expected to slip to 11th Plan'. The resulting shortages of power are indicated in Table 10.12 below.

TABLE 10.12 The Estimated Peak Load Requirement and Availability in the Power Sector

Year	Requirement	Availability (MW)	Shortage MW (%)
2002–03	81,492	71,547	9,945 (12.2)
2003–04	84,574	75,066	9,508 (11.2)
2004–05	87,906	77,652	10,254 (11.7)
2005–06	93,255	81,792	11,463 (12.3)
2006–07 (Upto Dec. 2006)	1,00,466	86,425	14,041 (14.0)

Source: GOI (2007).

The main strategies for achieving rural electrification goals as enunciated in the Rural Electricity Policy are[27]:

- grid extension or stand alone systems where techno-economic factors do not allow grids.
- Public–Private Partnership through rural franchisees
- Management of rural infrastructure based upon all-inclusive growth model that involves rural setups and provides the local Panchayat Raj institutions a supervisory function to ensure the durability and sustainability of electricity infrastructure.
- Franchisee system for management of rural distribution has been made mandatory under RGGVY to make the revenue model sustainable.

RGGVY allows enterprising individuals, NGOs, private entrepreneurs, co-operatives, Panchayat Raj institutions to become franchisees.
- Distribution of power in Rural Areas through Decentralized Distributed Generation (DDG).
- Costs, Prices and Subsidies.
- Pre-paid meters to be promoted which will enable efficient use of power for agricultural work and efficient use of groundwater resources.

The Electricity Act 2003 provides the requisite framework for accelerating electrification in rural areas with the necessary empowerment. It allows the operation of standalone systems independent of the regulatory regime.

The Rural Policy[28] further provides that standalone systems of upto one MW would have automatic approval for

(a) Land use change for area as per norms
(b) Pollution clearance if technology is proven, within laid down norms, and
(c) Safety clearance on the basis of self-certification.

The problem of providing power to rural areas would be critical when the infrastructure under RGGVY becomes ready but remains without the supply of power. To attract entrepreneurs, REC may be encouraged to start pilot projects in selected rural areas. Such projects could be linked to the neighboring sub-stations and incorporated as the long-term lease infrastructure under RGGVY on cheaper finance.

The role of new and renewable energy in meeting rural electrification goals should also be recognized. However, there is a need to streamline the alternative approaches to rural electrification. We cite here the prospects for potential for these sources in the XIth Five Year Plan period based on the Report of the Working Group on New and Renewable Energy for XIth Five Year Plan (2007–12).[29] 'The solar home-lighting systems have been provided under the government schemes since 2001–02, the terminal year of the IXth Plan and under the remote village electrification programme during the Xth Plan. The initial list of 25,000 'remote' villages to be covered by solar home-lighting systems became obsolete. Rural Electricity Policy (2006) which required provision of minimum life line supply of 1 kwh/household/day made this list totally redundant, since solar systems are just not in a position to meet the lifeline consumption norm in a cost-effective manner. Hence, provision of solar home lighting systems to villages not covered by RGGVY has to be treated as an interim solution pending provision of life-line supply to such villages. As regards possible renewable energy DGS

solutions, only small hydro, as stated above, can be considered in such of those villages where feasible and cost effective for the present'.

Assessment of the Prospects

What is different about the overall setting now as compared to the time when initiatives such as the MNP were launched is the fact that there are more resources available with the government and other lenders and there is greater experience with alternative models of planning and implementation over the years which should help in implementing the proposed strategies.

Evaluating the strategies implied in the Electricity Act 2003 and the draft Rural Electrification Policy Shankar concluded that 'As the new deal given in the Electricity Act 2003 has mandated that rural electrification has to be achieved as per a specific time schedule and the means have also been indicated, this opportunity should not be missed. Rural electrification should become the cornerstone of all development efforts in the rural areas and the participation of all sections of society in the rural areas and even outside the rural areas will have to be enlisted. Concerted and sincere efforts in the next seven years can lift rural India and along with it the whole of India, out of the poverty trap'. He also noted that international experience in subsidizing electricity for the poor has varied. For instance, in South Africa the proposal has been to provide electricity free to the poor and charge an additional 4 percent of tariff to the non-poor. In Sri Lanka, micro-finance lending has been provided to help the poor meet the capital expenditure related to wiring, etc., at the household level. In PRC, rural tariffs actually tend to be higher than in urban areas because rural power is first purchased by other organizations and then resold to rural consumers. What is needed is a clear policy on how the cost of subsidization would be met. In fact, the experience in India so far in extending free power to agriculture or extending rural electrification without a suitable commercial policy on meeting the expenditure has been extremely unsatisfactory.

In an assessment of rural electrification in two selected districts in Madhya Pradesh and Uttar Pradesh, Modi highlights the ground realities which caution us from taking a very optimistic position on the speed of progress.[30] He notes that the problems facing the expansion of rural electrification include tariff and metering issues, level of infrastructure and capacity of the electricity-providing agencies in the states and the need for reforms in the agricultural sector that effectively deal with the efficient use of groundwater resources. The study notes that the supply of electricity in some villages in Unnao is as low as 4–5 hours a day.

In terms of financial requirements for achieving the goals of rural electrification, they do not seem to be inaccessible. Again to quote Shankar:

'the total cost of electrifying the estimated Rs 1.13 lakhs unelectrified village would be around Rs 8,500 crores to be spent in three years. The Government share of 90 percent of this could be about Rs 2,500 crores a year which is large but not beyond the capability of State and Central Governments taken together. The study further estimates that the capital cost of electrifying all the 86 million unelectrified households in eight years would be around Rs 12,900 crores to be spent in eight years. As only 50 percent would be provided by the beneficiary, the public expenditure from the utilities it would amount to above Rs 800 crore per year to be raised in all States. The study concludes financial needs for fulfilling the targets could be raised by the Governments'.

The critical issue seems to be one of implementation of the strategies. Institutional mechanisms are clearly needed at the village level. Available power has to be rationed at the village level. Further some ome cross-subsidization may be necessary and targeting the beneficiaries for lower prices and monitoring the delivery of subsidized electricity to them would not be easy without the involvement of local institutions.

The experience in managing the drinking water supply system at the village level by village Panchayats should be drawn upon for the management of electricity supply to villages. Another possibility is the rural electricity cooperatives that have been adopted by a few countries (US, Philippines and Bangladesh) as an alternative model to centralized distribution of power to rural areas.[31]

It must be reiterated at the end that the availability of electricity will provide the impetus for rural industries and a value addition in agriculture. When these productive sectors expand, average income levels can be expected to increase leading to further increase in the demand for electricity. The challenge of deriving benefits from electrification will have to be met by improving transportation systems, credit and social infrastructure.

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Understanding Poverty in India

Inclusive growth needs to be achieved to reduce poverty and other disparities and raise economic growth. This book develops a poverty profile for India in view of the ongoing national and global efforts toward ensuring inclusive growth and bringing poverty levels down. This poverty profile will enable academics and policy makers to reassess and improve on the existing methodologies in estimating poverty rates, evaluate the effectiveness of existing poverty programs, and suggest alternative and complementary options for strategic intervention based on the lessons drawn from program implementation both at the state and national levels.

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