Chapter 7

India: Tradition for Poverty Research

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Introduction

During the 1970s, there was increasing awareness all over the world that the development strategies of previous decades would not eliminate or even reduce poverty to any significant extent. Economists and policy makers in India were also aware that the rate of economic growth was too slow to lift the living standards of the bottom half of the population to acceptable levels. Given a relatively rich database on the distribution of consumption expenditures, this awareness generated a lively debate on the trends and causes of poverty in India, as well as the appropriateness of various strategies to alleviate poverty. The purpose of this chapter is to review the main strands of this debate. I start with a discussion of the informational basis for poverty studies in India. I then discuss some methodological issues connected with the measurement of poverty. A crucial step in the measurement of poverty is the specification of the cut-off point in (typically) the level of either consumption or income below which individuals are deemed to be poor. The rationale underlying alternative specifications of the cut-off point in India is discussed in some detail. The trends in the incidence of poverty in India are discussed in the next section. There is now a database to measure the extent of poverty for almost all years between 1956/57 and 1988/89. However, the trend in poverty prior to 1973/74 has been a controversial topic, and this controversy is reviewed in this section in some detail. Another issue that has received a great deal of attention in the Indian literature on poverty has been the efficacy of the trickle-down mechanism. This discussion has focused on whether accelerated growth can reduce the extent of poverty in the rural sector. In particular, the issue has been

narrowed down to the role of agricultural growth in reducing rural poverty. Various hypotheses regarding the determinants of rural poverty are summarized.

However, even the most ardent advocate of the trickle-down mechanism will admit that the rate of economic growth in India has been too slow to make any significant dent in the poverty problem. This perception has been widespread, and has resulted in an expansion in the scale of intervention oriented to a target-group by the government. The effects of such interventions and other relevant issues are discussed in the final section.

The database for poverty studies

The only reliable source of time-series data on the distribution of either consumer expenditure or income is the National Sample Survey (NSS) Organization, which has been conducting sample surveys of household consumer expenditure practically every year since 1951. After 1972/73, a decision was taken to start quinquennial surveys with a considerably larger sample size, though the usual annual survey was also conducted in 1973/74 with a relatively small sample. As emphasized in subsequent sections, almost all the studies on poverty in India are based on NSS consumer expenditure data. The sampling scheme of the NSS consumer expenditure surveys is based on a stratified two-stage sampling design. The first-stage units consist of rural villages or urban blocks selected according to a probability that is proportional to population. These are also selected in the form of two independent sub-samples. The second-stage units consist of sample households from the complete listing of households in the first stage units. The sampling errors of the NSS estimates of private consumption may be taken to be very small because the sample sizes are quite large. Indeed, there are about 13,000 first-stage units and 121,000–158,000 second-stage units. The NSS collects detailed itemwise consumption data for the thirty days preceding the date of enquiry from the sample households by interviewing members of the household. The survey period of a round, which is normally of a year's duration, is divided into four sub-rounds. The two independent sub-sample households are equally distributed over the four sub-rounds, and the canvassing is staggered throughout the survey period so as to make the estimates free of seasonal variation.

Doubts have sometimes been expressed about the reliability of NSS data on private consumption expenditure. In particular, it has been pointed out that the NSS estimates are significantly below the total private consumer expenditure estimated from the

National Accounts Statistics (NAS). The NAS estimates of private consumption expenditure are derived as a residual after deducting estimates of government consumption, fixed investment inventories, and exports (net of imports) from estimates of output flows. These adjustments are all subject to errors, and so the NAS estimates of private consumption expenditure need not necessarily be taken as a benchmark. (See Minhas 1989, who discusses several reasons for the divergence between the two estimates of private consumption.)

Another crucial ingredient in the measurement of poverty is the state-specific and all-India consumer price indices, because these are needed to adjust poverty lines for spatial and intertemporal variations in the cost-of-living. Unfortunately, no representative official cost-of-living indices are available. Official cost of living consumer price indices relate to narrow groups such as the consumer price index for agricultural labourers (CPIAL), for industrial workers (CPIIW), and for urban non-manual employees (CPINM). The CPIAL has been widely used in studies measuring the incidence of rural poverty in India. This index, prepared by the Labour Bureau of the Government of India, is constructed on the basis of monthly retail prices of 62 items, the price quotations being collected from a fixed set of 422 villages spread throughout the country. The weighting diagram is based on the consumption pattern of rural agricultural labour households observed in 1956/57. As far as the CPIIW and CPINM are concerned, weekly price data are collected for a large number of consumer items from industrial and urban centres spread all over the country. The weighting diagrams for the construction of the CPIIW and CPINM are obtained from the expenditure pattern available from the family living surveys carried out in 1958/59.

Since agricultural labour households constitute only 30 per cent of the rural population, and only 70 per cent of agricultural labour households are amongst the rural poor, less than half of the rural poor are agricultural labour households. This has raised doubts whether the CPIAL can really serve as a representative cost-of-living index for the entire class of rural poor. However, Bardhan (1973) argues that the weighting diagram used in the CPIAL does conform quite well to the consumption pattern of the rural poor. Dutta (1978, 1980) and Vaidyanathan (1974) also discuss this issue. Similar objections can be levelled against the use of CPIIW and CPINM as a cost-of-living index for the urban poor.

This prompted Minhas et al. (1990, 1992) to construct appropriate consumer price indices for the total rural and urban

population of each state, as well as for the "middle-range population" between the 20th and 60th fractile, since the poverty line invariably falls in this fractile group. These price indices were constructed using the same price data going into the CPIAL, CPINM, and CPIIW and weighting diagrams based on NSS consumer expenditure distributions. These price indices have been used in later studies on the incidence of poverty in both the rural and urban sectors, and some of these estimates will be discussed in the section on poverty trends.

Measurement issues

Poverty exists in a given society when a group of its members fail to attain a level of well-being considered to be a reasonable minimum by the standards of that society. Insofar as the extent of poverty is concerned, its measurement must involve two distinct stages. First, the minimum living standard, the so-called poverty line, has to be specified so that the set of "poor" persons can be identified. Second, the actual levels of well-being of the poor below the poverty line have to be aggregated into an overall measure of poverty. Any comprehensive definition of well-being must encompass all factors that affect an individual's standard of living. Apart from command over commodities (measured by either income or consumption expenditure), the list must include at least health and education (see Sen 1985). Unfortunately, because relevant time-series data are seldom available, the usual practice has been to adopt a very narrow concept of well-being, with income or current consumption being identified as the indicator of living standards. Moreover, because the incomes of the poor exhibit greater variability than current consumption, the latter is normally judged to be a more reliable indicator of the current standard of living.

Indeed, the dominant tradition in the specification of a poverty line is to identify some basic consumption needs. Obviously, the most important consumption need is the attainment of some recommended food-energy intake. Since there are many food combinations that can achieve any specified food-energy intake, this specification does not directly yield a well-defined poverty line. An attempt to calculate the minimum cost of attaining the required food-energy intake is likely to be irrelevant because the minimum-cost food bundle may be very unpalatable. One option is to follow Panda (1989), who performs the minimum-cost exercise subject to suitable constraints introduced so as to avoid "corner" solutions. These constraints ensure that the optimum

solution is a reasonably balanced meal. In practice, the poverty line is specified by finding the consumption expenditure at which a person typically attains the required food-energy intake. Notice that this procedure also makes an allowance for expenditure on non-food consumption.

The first attempt to specify poverty lines was in 1962, when a Working Group set up by the Government of India recommended a per capita total consumption expenditure (PCTE) of Rs 20 per month in 1960/61 prices. This figure excluded expenditure on health and education, which were expected to be provided by the state. However, it is not clear whether this figure corresponded to any specific consumption basket or food-energy intake because there are no records to reveal the assumptions or calculations implicit in this figure. Nevertheless, this figure came to acquire some legitimacy, with the Draft Fifth Five Year Plan noting that "In the Fourth Plan document, private consumption of Rs 20 per capita per month at 1960–61 prices was deemed a minimum desirable consumption standard".

Subsequent specifications of the poverty line have been more explicit about the assumptions underlying the poverty line estimates, with the poverty lines corresponding to the monthly PCTE at which households can afford either a specified level of nutrients or a specified consumption basket. Of course, the specification of the level of nutrients or the food basket cannot avoid the element of arbitrariness that is inherent in all such exercises. For instance, Dandekar and Rath (1971) used an average calorie norm of 2,250 calories per capita per day for both rural and urban areas as the required food energy intake. NSS consumption data revealed that rural households with monthly per capita consumption expenditure of Rs 14.20 at 1960/61 prices consumed on an average food whose caloric content was 2,250 calories per day. The corresponding PCTE for urban areas was Rs 22.60 at 1960/61 prices. Amongst other early attempts at constructing poverty lines are those of Bardhan (1973) and Rudra (1974). Most of the subsequent studies on the incidence of poverty in the rural sector carried out in the 1970s have used a per capita consumption expenditure of Rs 15 per month as the rural poverty line. There is no agreement about the urban poverty line, except that it has to be higher than the rural cut-off point because of higher prices. However, some results that use monthly PCTE of Rs 20 at 1960/61 prices will be reported here.

Official estimates of poverty in India carried out by the Planning Commission define the poverty line as the per capita expenditure level at which the average per capita daily intake is 2,400 calories in rural areas and 2,100 calories for urban areas.

This is based on the age–sex–activity-specific calorie allowances recommended by a group of nutrition experts, who estimated the average daily per capita requirements for rural and urban areas using the age–sex–occupational structure of their population. Based on the observed consumer behaviour as revealed by NSS data for 1973/74, it was estimated that total consumption expenditure of Rs 49.09 per capita per month in rural areas and of Rs 56.64 per capita per month in urban areas were the appropriate poverty lines. These have come to be the accepted norms in studies carried out in the past 15 years.

The poverty line has to be adjusted for changes in the cost of living across time as well as for spatial variability in prices. As mentioned in the previous section, the CPIAL has been widely used to adjust the rural poverty line. Dutta (1980) has also used the CPIIW to measure the incidence of urban poverty during the period 1960/61 to 1973/74. The next section discusses inter-state movements in the incidence of poverty during 1970/71 to 1987/88. These results use the official (Planning Commission) estimate of the poverty line of Rs 49.09 for rural India and Rs 56.64 for urban India at 1973/74 prices, and adjusted by the price indices for the middle range of the population obtained by Minhas et al. The simplest measure of poverty is given by the head-count ratio, which essentially measures the percentage of people below the poverty line. The head-count ratio is obviously a very crude measure because it ignores both the shortfall of consumption from the poverty line, as well as the distribution of consumption amongst the poor. However, its simplicity is its most appealing feature, and perhaps this has resulted in its widespread use. Also, it turns out that the trends in the incidence of poverty are not very sensitive to the particular index used to measure poverty. In this chapter, all estimates of poverty use the head-count ratio.

Trends in poverty: 1956/57 to 1988/89

This section describes the trends in the incidence of poverty in both rural and urban India during the past four decades. The period is divided into two overlapping sub-intervals, the first being the period 1956/57 to 1973/74, while the second is the period 1970/71 to 1988/89. Note that the two sets of estimates are not strictly comparable because the poverty lines as well as the price indices used to adjust them across time have been different.

Before discussing estimates of the incidence of poverty at the all-India level, it is worth pointing out that two estimation

procedures have been followed in the literature. The first is to perform the poverty computations directly on the all-India consumption expenditure distributions, which are published by the NSS separately for the rural and urban sectors. These aggregate distributions are obtained as the population-weighted averages of the state distributions. An obvious defect of this procedure is that it ignores inter-state variations in prices. Since the state expenditure distributions in current prices are not corrected for differences in prices across states, this procedure is equivalent to using a uniform poverty line across all states. The second procedure is indirect, because it first computes the incidence of poverty at the state level, then the incidence of poverty at the all-India level is derived as the population-weighted average of the state-wise poverty levels. The latter would be a theoretically sounder procedure if the poverty levels of all states (and union territories) were aggregated to arrive at the all-India figures. However, since state-wise price indices are not available for all states and union territories, this has not been done so far. For instance, Kakwani and Subba Rao's (1992) all-India rural estimates were based on poverty levels in sixteen major states, whereas Minhas et al.(1991) aggregated poverty levels in twenty states to derive their all-India estimates. Because the indirect method excludes a section of the population, it cannot be called truly representative. Also, the two procedures usually give different estimates, as is borne out by results of Ahluwalia (1978) and Minhas et al. (1991).

The incidence of poverty during 1956/57 to 1973/74

In an early and provocative paper, Minhas (1970) used the NSS percentage distribution of consumption expenditure to allocate the aggregate private consumption figure derived from the NAS amongst different groups of the population. Using two alternative poverty lines of Rs 240 per capita per year and Rs 200 per capita per year at 1960/61 prices, Minhas concluded that between 1956/57 and 1967/68, "there has been a steady decline in the proportion of people below the poverty line".

Two features of his estimation procedure have come in for sharp criticism. First, there does not seem to be any justification for combining the distribution of NSS consumption expenditure along with the estimate of aggregate private consumption expenditure from NAS. As discussed in the section on the database, there is no reason to question the reliability of NSS data simply

because of a divergence from the estimates derived from the NAS. Moreover, if the NSS data are considered unreliable, then the use of the NSS percentage distribution of consumption expenditure is bizarre. Second, Minhas used the national income deflator to adjust for price changes across time. As Bardhan (1973) pointed out, national income includes investment as well as consumption goods, and so it is not clear why consumption should be deflated by the national income deflator. Since the weight of manufactured goods in the consumption basket of the rural poor is much smaller than the national average, the national income deflator is singularly inappropriate as a consumer price index for the rural poor.

Bardhan (1973) also estimated the incidence of rural poverty in the 1960s. Unlike Minhas (1970), Bardhan relied solely on NSS consumer expenditure data. As with most studies in this period, Bardhan defined the poverty line to be a monthly PCTE of Rs 15 at 1960/61 prices, and used the CPIAL to measure price rises for the rural poor. Bardhan found that the proportion of people below the poverty line rose from 38 per cent in 1960/61 to 45 per cent in 1964/65, 53 per cent in 1967/68, and to 54 per cent in 1968/69. These figures suggested a secular increase in poverty in rural India during the 1960s, and there were also suggestions that the pattern of development was biased against the poor (see also Bardhan 1970; Rajaraman 1975; and Lal 1976). Ahluwalia (1978) was amongst the first to point out that any firm statements about secular changes can only be made on the basis of a time-series of observations. Otherwise, conclusions can be vitiated by the choice of end points. Ahluwalia (1978) showed that there was no statistically significant time trend in the incidence of poverty (as measured by the head-count ratio) in the rural sector during 1956/57 to 1973/74. Dutta (1980) also established the same result for the period 1960/61 to 1973/74 and for both the rural and urban sectors. There have been fluctuations in the proportion of the population below the poverty line, with a marked tendency for poverty to increase in years of bad harvests and associated high food prices. Indeed, the poverty estimates in both sectors reached their peak in 1967/68, the year in which price rises were highest.

Unlike the incidence of poverty, there has been a statistically significant trend increase in the number of people below the poverty line in both sectors of the economy. On average, there was an annual increase of 5.38 million in the number of the rural poor, while the corresponding increase in the urban sector was 1.3 million. The trend growth rate in the size of the poor population was higher for the urban sector.

The experience between 1970/71 and 1987/88

Many of the studies on the incidence of poverty in India in the recent past adopted the Planning Commission's specification of Rs 49.09 and Rs 56.64 per month PCTE at all-India 1973/74 prices as the poverty lines for the rural and urban sectors, respectively. Kakwani and Subba Rao (1992) also specified a cut-off point for the ultra-poor. This was taken to be 80 per cent of the poverty line, which they took to be Rs 50.00 per month PCTE for the rural sector. Hence, the "poverty line" for the ultra-poor is Rs 40, which is quite close to the earlier poverty line of Rs 15 at all-India 1960/61 prices adjusted by CPIAL.

Both the CPIAL and the new consumer price indices for the middle-range rural and urban populations derived by Minhas et al. have been used to adjust the poverty lines across time and across states. This section relies heavily upon the poverty estimates of Tendulkar et al. (1993), who used the Minhas et al. price indices.

As remarked earlier, the specification of the poverty line is subjective and to some extent arbitrary. Moreover, as with all price index numbers, the consumer price indices used to adjust the poverty line across time are all "approximations" of the true cost-of-living index of the poor population. It is, therefore, reassuring to find that the pattern of the incidence of poverty during 1970/71 to 1988/89 is remarkably robust to alternative specifications of the poverty line, the consumer price indices, as well as the estimation procedure (direct versus indirect methods).

Thus, in the rural sectors, there was a monotonic decline in the incidence of poverty from 1972/73 to 1988/89. The pattern in the urban sector is similar. The head-count ratio declined from 57.33 per cent in 1970/71 to 42.23 per cent between 1970/71 and 1988/89 in the rural sector, while the corresponding figures for the urban sector were 45.89 per cent and 35.07 per cent. Moreover, as in the earlier period, the incidence of poverty in the urban sector was appreciably lower than in the rural sector throughout this period. It is also worth emphasizing the decline in the head-count ratio between 1983 and 1987/88 because the latter was a particularly severe "drought" year, and in previous drought years the head-count ratio had tended to rise. This welcome break from the past must be at least partially due to large-scale government intervention in the form of special wage-employment programmes as well as a huge release of food-grains through the public distribution system to control the price of food-grains.

Notice, however, that the appreciable decline in the head-count ratio was not accompanied by any reduction in the number of people below the poverty line. Indeed, there was a clear increase in the number of poor people between 1970/71 and 1983 according to all the estimates. The further decline in the head-count ratio between 1983 and 1987/88 makes the comparison of the numbers of people below the povery line between 1970/71 and 1987/88 more difficult. The size of the poor population during this period decreased if the poverty line is taken to be a monthly PCTE of Rs 15 at 1960/61 prices, but it increased if the poverty line is taken to be the Planning Commission specification. As far as the urban sector is concerned, there was a noticeable increase in the number of people below the poverty line. However, part of this increase was due to the greater degree of urbanization during this period.

Kakwani and Subba Rao (1992), Jain and Tendulkar (1990), and Tendulkar and Jain (1992) also conducted the exercise of decomposing the changes in the incidence of poverty into changes in average PCTE (growth effect) and changes in distribution (distribution effect). Although the decomposition exercises use somewhat different procedures and different time-periods, the basic principle is identical. This is to identify (i) the growth effect (GE) as the change in the incidence of poverty attributable to change in real average PCTE while keeping the Lorenz curve (of the distribution of consumption expenditure) unchanged, and (ii) the distribution effect (DE), which is the change in poverty attributable to the change in the Lorenz curve between two time points while keeping real average PCTE constant. The sets of results differ because of differences in end points and procedures. For example, Kakwani and Subba Rao (1992) found that between 1973/74 and 1977/78 and between 1983 and 1986/87, the DE actually retarded poverty reduction. On the other hand, Tendulkar and Jain (1992) found that between 1972/73 and 1977/78, the DE was favourable but small, whereas between 1983 and 1987/88 the DE was favourable and large.

In this connection, Tendulkar, Sundaram et al. (1993) observed that, when the end points are similar (local peak to local peak such as 1977/78 to 1983, or drought to drought such as 1972/73 to 1987/88), the GE has an overwhelmingly large influence. Moreover, the DE in urban areas is virtually negligible in the absence of urban anti-poverty programmes. However, the DE in both rural and urban sectors becomes important when one of the time points is a drought year whereas the other is a peak year.

Tendulkar et al.'s explanation for the observed pattern of decomposition is also interesting. If the end points are dissimilar, then the scale of the government's anti-poverty interventions will also be different. For instance, in the drought year 1987/88, massive employment generation under public works programmes must have had favourable distributional effects for the rural population, whereas, in a local peak year such as 1983, the poverty alleviation programmes were on a much smaller scale. This can be expected to lead to a large DE if the period of comparison is between 1983 and 1987/88. On the other hand, the absence of urban anti-poverty programmes leaves the urban poor particularly vulnerable in drought years. This implies that the DE in urban areas will be large and negative (or unfavourable) when the comparison is between peak and drought years. Finally, note that, because many of the anti-poverty programmes such as the public works programmes are targeted at the poorest segments, the distributional effects will be larger when the incidence of poverty is measured by distributionally sensitive measures such as the Sen index. This is also borne out by the results of Tendulkar and Jain (1992).

Determinants of poverty levels

The first systematic attempt to explore a possible determinant of the extent of rural poverty was Ahluwalia (1978), whose main purpose was to examine the relationship between the level of per capita agricultural incomes and the incidence of rural poverty. If there is any "trickle down" mechanism at work in the rural economy, then increases in rural incomes should translate into lower levels of poverty in the rural sector. Since agriculture is the dominant source of incomes in the rural sector, it is natural to test the "trickle-down" hypothesis with some proxy for agricultural income as the independent variable. Ahluwalia used the net domestic product per head of rural population at constant (1960/61) prices (NDPARP), which is a measure of per capita value added, as the proxy for per capita rural income. Ahluwalia found "that improved agricultural performance is definitely associated with reductions in the incidence of poverty". The basis for this assertion is a set of different regression equations in which the dependent variable is the head-count ratio in the rural sector. The coefficient of NDPARP turned out to be negative and significant in these equations.

Ahluwalia also found that there is no significant time trend in any of the equations after controlling for the influence of NDPARP. This indicates that there are no factors correlated

with time that are important determinants of the extent of poverty in the rural sector.

The basic hypothesis was also tested at the level of individual states, though Ahluwalia noted that the state-level exercise has to cope with two problems. First, unless the performance of the agricultural sector is uniform across all states, there may be temporary migration from a state in which the harvest has been bad to a neighbouring state with a better harvest. The possibility of inter-state migration implies that the trickle-down mechanism may not be very effective at the level of individual states. Second, in the absence of time-series data on state-wise NDP in agriculture, Ahluwalia was forced to use a two-year average of an index of agricultural production per head of the rural population (IAPPH) as the independent variable. Since this is a "gross output" measure, this would tend to overstate rates of growth if there was any increased intensity of input usage. Ahluwalia's results were ambiguous at the state level. In seven out of fourteen states, the coefficient of IAPPH was negative and significant. Moreover, in many states, the coefficient on time was significant, indicating that there may have been other factors at work that have tended to increase rural poverty.

What can be concluded about the efficiency of the "trickle-down" mechanism from these regression results? Can agricultural growth without major institutional reforms reduce poverty? Some authors have contended that the period of Ahluwalia's analysis, namely 1956/57 to 1973/74, is inappropriate because the new agricultural strategy was adopted only in the early 1960s. Thus, Griffin and Ghose (1979) and Saith (1981) contended that the years prior to the early 1960s should be excluded. Saith also argued for the exclusion of the year 1973/74 because the price index with base weights of 1956/57 understates the importance of commodities whose relative prices rose rapidly from 1970/71 to 1973/74. On a truncated time-series of observations, Saith's regression exercise revealed a statistically significant positive trend in poverty after controlling for CPIAL and variations in agricultural production.

These arguments for the exclusion of some observations are not particularly convincing. However, the question remains whether Ahluwalia's regression results at the all-India level throw much light on the trickle-down hypothesis. In particular, it is important to take note of the fact that there has been no trend increase in NDPARP. Ahluwalia (1986) pointed out that, between 1956/57 and 1977/78, the NDP in agriculture grew at an annual average rate of 2 per cent, which is only slightly faster than the growth in rural population. Hence, even if the trickle-

down mechanism is potentially useful in reducing poverty, it could not have actually effected any significant reduction in the extent of rural poverty simply because "there was very little to trickle down at the All-India level" (see Srinivasan 1986). It is also worth pointing out that the state-wise regression results reveal that many states have had statistically significant trend increases in IAPPH, although there have not been any accompanying trend declines in poverty. Indeed, in West Bengal, there have been statistically significant trend increases in both IAPPH and poverty. Clearly, unless IAPPH is a particularly bad indicator of agricultural growth, the trickle-down hypothesis has failed in West Bengal. Indeed, Bardhan (1986) used NSS cross-sectional data on individual households in 550 sample villages of West Bengal for 1977/78 to conduct a logit analysis of the probability that an agricultural labour household falls below the poverty line. The logit analysis revealed that, other things remaining the same, the probability of an agricultural labour household sliding below the poverty line increases if it is in a district where agricultural production has grown at a faster rate! Both Dharm Narain (see Desai 1986) and Saith (1981) also noted a correlation between the consumer price index for the rural poor and the incidence of rural poverty. Narain expanded Ahluwalia's specification by including the CPIAL as an explanatory variable. Narain observed that the nominal price level appropriate for the rural poor is a statistically significant explanatory variable.

The inclusion of the price variable as an explanatory variable has generated a lot of discussion (see, for instance, Ahluwalia 1986; Bliss 1986; Sen 1986 and Srinivasan 1986). A change in the nominal price level can affect the incidence of poverty only through an effect on the distribution of income (and hence consumption). For instance, if money wages and earnings do not rise as fast as the price level, then the real incomes of agricultural labourers and other non-cultivator households will go down. This could then translate into a reduction in per capita consumption expenditure. Recent work by Ravallion and Datt (1994) supports this explanation. A variation of Narain's hypothesis is provided by Bhattacharya et al. (1991), who contended that it is the relative price of cereals, that is, the price of cereals relative to manufactures, that is a major determinant of the extent of rural poverty. Bhattacharya et al. started with the observation that the incidence of poverty in rural India is highly correlated with the per capita consumption of cereals. They advanced two reasons for this observed correlation. First, cereals account for at least 50 per cent of the consumption basket of the rural poor, and the

observed pattern of per capita cereal consumption has a very close fit with the pattern of per capita total consumption. Second, their regression results showed that about 88 per cent of the intertemporal variation in the level of poverty is explained by variation in PCTE.

Hence, they sought to explain changes in the incidence of poverty through an examination of factors affecting the per capita consumption of cereals. They postulated an inverse relationship between the extent of poverty and per capita consumption of cereals, and constructed a model to identify factors explaining the latter. Assuming that cereal production (and hence supply) is exogenous, demand functions were specified for the rural and urban sectors. The model was "closed" by specifying that supply must equal demand. Their model predicted that the lagged price of cereals is a determinant of the per capita consumption of cereals, and their regresssion results confirmed this.

Notice that the Bhattacharya et al. results can be used to provide an explanation for Narain's regression equation. This is because the lagged price of cereals is correlated with the current level of CPIAL. Hence, one plausible explanation for the observed dependence of poverty on the CPIAL is that this is actually the combined effect of the dependence of poverty on the lagged relative price of cereals and the latter's correlation with CPIAL.

Public policy for poverty alleviation

Explicit poverty alleviation programmes were formulated and implemented with the initiation of target-group-oriented special programmes towards the end of the 1960s. Thus, the Small Farmers' Development Agency (SFDA) and the Marginal Farmers' and Agricultural Labourers' Development Agency (MFALDA) were set up during the Fourth Five Year Plan (1969–74) to increase the incomes of the currently non-viable small and marginal farmers as well as of agricultural labourers. However, these schemes did not assist more than 15 per cent of the rural households who were eligible for assistance. The Integrated Rural Development Programme (IRDP), initiated during the Sixth Five Year Plan (1980–85), was considerably larger in scale.

The Integrated Rural Development Programme

The IRDP was an ambitious scheme designed to assist 15 million rural households (roughly one-seventh of the total number of

rural households) during the course of five years. The beneficiaries were supposed to be selected from amongst the "poorest of the poor". Two-thirds of the beneficiaries were to be covered by projects broadly classified under the heading of "agriculture and allied activities", while the rest were to be provided with self-employment opportunities in village and cottage industries and in the service sectors. Each project was to be chosen so that it would generate a net income flow sufficient to take the beneficiary across the poverty line.

The entire programme was to be financed through a combination of budgetary subsidy and institutional credit. The stipulated rates of subsidy varied according to the type of beneficiary household, the rate being 25 per cent for small farmers, 37 per cent for marginal farmers and agricultural labourers, and going up to 50 per cent for tribals. The ceiling on subsidies was Rs 3,000 per small and marginal farmer and agricultural labourer. A plan allocation of Rs 15,000 million was made for the plan period, and institutional credit of Rs 30,000 million was also to be provided. Assuming a capital–output ratio of 1.5, this investment was estimated to generate additional income of Rs 30,000 million. Even without any detailed consideration of the actual operation of the IRDP, it is apparent that the target of assisting 15 million households from amongst "the poorest of the poor" to cross the poverty line could never be fulfilled. First, as Bandyopadhyay (1989) pointed out, at least 20 per cent of the plan outlay of Rs 15,000 million was required to meet the administrative costs of running the programme. Assuming away about 15 per cent of total investment by way of leakages leaves a total investment outlay of Rs 35,700 million during the course of the five years. Even assuming that the grossly underestimated capital–output ratio of 1.5 is correct, this outlay could generate an income flow of Rs 23,800 million. This works out at less than Rs 1,600 per individual household if 15 million households were to be assisted.

The IRDP also assumed a poverty line of Rs 3,500 per household per annum. This is absurdly low. Taking the average household size to be five, and assuming the Planning Commission's specification of monthly PCTE of Rs 49.09 at 1973/74 prices, the threshold annual consumption level for households in 1983 turns out to be Rs 5,590 when the poverty line is adjusted by the Minhas et al. price indices for the middle range of rural population. This implies that none of the assisted households could have crossed this poverty line.

Of course, the figure of Rs 1,600 as the additional income flow per beneficiary household is a generous overestimate. There are

at least two reasons for this. First, the actual capital–output ratio varied from project to project and was also location specific. The Institute for Financial Management and Research (IFMR), which conducted a major country-wide evaluation study of the IRDP, found that capital–output ratios between 2.5 to 3 for IRDP schemes were more realistic than the official estimate. Second, what is really important is the net income flow after adjusting for loan repayments. Obviously, if the debt servicing is taken into account, the additional income flows generated by the IRDP will be significantly lower. However, the main problem with the IRDP is not simply that the total investment outlay was inadequate to provide sufficient assistance to all the 15 million households. As many authors have pointed out, the entire programme was implemented in such a myopic manner that it essentially turned into a subsidized credit scheme for the rural poor. No attempt was made to mesh the individual projects into an integrated development plan for the rural economy. This implied that the sectoral allocation of credit was unbalanced. For instance, in the initial years, animal husbandry programmes, in particular purchase of dairy animals, dominated the programme. There was no match between disbursement targets and the local potential for increased livestock ownership. The new owners faced shortages of both inputs and infrastructural services. Particularly hard hit were the landless labourers who even had to purchase fodder.

Not surprisingly, yields from milch cows were often quite low, forcing owners to resell the cows. In contrast, subsidiary occupation schemes such as fishery and agriculture were very successful, and as many as 50 per cent of households in the "very, very poor" category operating these schemes managed to cross the cut-off mark of Rs 3,500 per annum. Tertiary sector schemes such as petty services also proved to have large income-generation capabilities. The wide discrepancy in returns from the various schemes is symptomatic of large-scale misallocation of resources.

Another aspect of the implementation of the IRDP that has been roundly criticized in almost all studies is the substantial leakage due to improper selection of beneficiaries ("death of animals" and outright sale of assets were other common sources of leakage). The original stipulation was that the poorest households were to be identified with the help of the village council or Gaon Sabha. However, this practice has not been followed uniformly in all states, and there have been reports of the village headman manipulating the selection process. Different macro-studies suggest that 15–36 per cent of borrowers were estimated

to be above the official poverty line, while less than a quarter of beneficiaries were from the "very, very poor" category. Micro studies are usually more critical. For instance, Dreze (1990) concluded from his village study on Palanpur that there had been no overall discrimination in favour of the poor in the allocation of loans. Affluent households have been liberally included amongst the beneficiaries, and the head-count measure of poverty amongst the IRDP beneficiaries was 43 per cent whereas the overall measure was 40 per cent.

Despite these defects, the sheer magnitude of the overall programme obviously had some impact on the living standards of the rural households. The various evaluation studies report that between 37 and 49 per cent of eligible borrowers moved above the official poverty line of annual household income of Rs 3,500. Unfortunately, these figures do not account for either inflation or loan repayment. More encouraging is the IFMR study that reported that 84 per cent felt subjectively "happy" or "very happy" with the IRDP, while the Programme Evaluation Organization (1985) estimated that almost 90 per cent of beneficiaries received incremental income.

However, there are several problems in interpreting these figures. Indeed, even the conceptual task of formulating criteria for judging the degree of success of such programmes is not particularly straightforward. As far as the findings of the evaluation studies are concerned, Copestake (1992) pointed out that these are based on relatively small sample sizes. (Dreze 1990 also pointed out the wide divergence between the results of macro- and micro-studies.) Moreover, there are serious problems in the income estimates. First, the income estimates are derived from single-visit interviews, resulting in possible omission and recall errors. Second, the entire change in income levels of beneficiaries is attributed to the IRDP, whereas other determinants of income levels could also have changed during the duration of the IRDP project. Third, a single comparison between income estimates at two points of time says very little about the pattern of income flows because of possible gestation lags or because other exogenous parameters may have changed.

A related point is the argument advanced by Dreze (1990) that an important criterion for judging the success of the programme must be the ability of the project to yield adequate and stable income flows. In the absence of perfect capital markets, consumption smoothing opportunities for the rural poor are limited. This makes long-term average incomes or "permanent" income poor indicators of the living standards of the rural poor. This

issue is particularly relevant because the IRDP has often been accused of promoting risky ventures.

It is also misleading to place undue emphasis on a household crossing the poverty line, whatever may be the specification of the line. Given the size of investment outlays and the additional incomes generated, it is not surprising that only a fortunate few amongst the poorest category of households crossed the official threshold of Rs 3,500. This must also have contributed to the pattern of selection of beneficiary households, with zealous officials selecting households from just below the poverty line so as to record magnified success.

Many other issues have been discussed in the extensive literature on the IRDP. A small sample is Bagchee (1987), Bandyopadhyay (1985, 1989), Copestake (1992), Dreze (1990), Sundaram and Tendulkar (1985). Dreze contains additional references.

Special wage-employment programmes

The sheer size of the rural population in poverty meant that complete reliance on self-employment programmes to alleviate poverty was out of the question. The rural economy simply could not have absorbed the required number of small-scale projects. Thus, a multi-pronged strategy was essential, with the creation of massive wage-employment opportunities complementing the self-employment programmes. Special wage-employment schemes such as the Rural Manpower Programme have been in operation since 1960/61. However, until the mid-1970s, these programmes were essentially designed to provide supplementary employment in the lean season to landless labourers. The scale of operations was limited, and they were not really designed to be general anti-poverty programmes. The first major wage-employment scheme was actually the Employment Guarantee Scheme (EGS), which was run by the state government of Maharashtra before similar schemes started at the national level. The scheme offers to provide manual work to all unskilled persons willing to work, and at the statutorily fixed minimum wage rate. The public works were to be organized within fifteen days of demand by fifty or more persons and preferably within 5 kilometers from the village. The first national counterpart of the EGS was the Food for Work Programme launched in 1977, and later merged into a much bigger programme called the National Rural Employment Programme (NREP) at the start of the Sixth Plan.

One advantage of the special employment programmes is supposed to be that a suitable specification of the level of wages and type of work can ensure that only the really poor will take up work in these programmes. For example, self-selection devices were built into the EGS by fixing the wage at the statutory minimum wage rate, which was less than the prevailing agricultural wage rate, and also by offering only unskilled work. However, an official evaluation still reported that small and medium farmers also reported for work under the EGS and NREP. This was one motivation for starting the Rural Landless Employment Guarantee Programme (RLEGP) in 1983. A specific objective of the RLEGP was to guarantee up to 100 days of employment to at least one member of each landless household in the country. The NREP and the RLEGP were brought under a single umbrella called the Jawahar Rozgar Yojana (JRY) in 1989/90.

Whereas the benefits or impacts of the self-employment programmes are hard to measure, the amount of employment created in the special wage-employment programmes is much easier to quantify. The average daily employment generated during the Sixth Plan by the NREP was 1.16 million man days, which was only slightly over 7 per cent of the total daily status of rural unemployment in 1980. The combined "output" of the NREP and the RLEGP during the Seventh Plan period was less than 10 per cent of total unemployment during this period. Indeed, as Dandekar and Sathe (1980) pointed out, the EGS in Maharashtra seems to have had a greater impact.

These programmes also have indirect effects. For instance, availability of employment in the public works programmes has an upward tendency on the general level of wages in the rural sector. Moreover, even this relatively small proportionate increase in employment generation had a significant impact in so far as the incidence of rural poverty is concerned. Recall that the extent of poverty in 1987/88 was lower than that in 1983. This is in spite of the fact that 1983 was a local peak as far as agricultural production was concerned, whereas 1987/88 witnessed one of the worst droughts. This represented a sharp departure from previous trends, when the incidence of poverty would shoot up during drought years. An obvious explanation for this phenomenon is the cushioning effect provided by these special employment and drought relief programmes (see Tendulkar et al. 1993 for a detailed discussion of this point).

The scale of the special employment programmes was dramatically increased in the Eighth Plan period, and the employment generated under the JRY during 1989/90 to 1993/94 was

3,300 million person-days. However, the huge influx of funds has not been without its attendant problems. Perhaps the most serious problem is that, because the primary objective of the programmes is creation of employment, wage costs form a very high fraction of the total investment outlay. This severely constrains the type of construction activity that can be undertaken. Minor irrigation works and roads form the bulk of the works, with the result that the principal beneficiaries are the medium and large farmers. A second problem is that in many districts there is an acute shortage of complementary inputs, particularly technical manpower, because junior engineers have to execute and supervise the public works.

These problems cast doubts on the long-term viability and desirability of such programmes. Public works programmes are obviously important as drought-relief measures or as supplementary sources of income during the lean season. However, should public works on a massive scale be continued on a permanent basis? Notice that, if the scale of these programmes is large enough, then the overall investment pattern in the economy may get distorted from the optimal pattern. The familiar trade-offs between efficiency and distribution, the short run and the long run, come to the fore. The optimum size of public works programmes (and the self-employment schemes) will then depend crucially on the objective circumstances in each region, because these will determine the nature of the trade-offs.

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