

Measurement of Poverty: In Retrospect and Prospect

NILAKANTHA RATH

Attempts to measure poverty in India date back to pre-Independence, but it was only from the late 1950s onwards that a systematic effort has been made to define the poverty line and then estimate the population of the poor. A survey of the evolution of the poverty line with a focus on the recommendations of two important committees – the 1993 Lakdawala Committee and the 2010 Tendulkar Committee – which effected important changes in the measurement process.

Early in the second half of the 19th century Gopal Hari Deshmukh (popularly known as Lokahitwadi) and Dadabhai Naoroji wrote about the poverty of India under British rule. Till the 1930s the Indian National Congress and concerned writers agitated about the poverty of the poor tenant farmers and the farm labourers in rural India. In 1936 Subhash Chandra Bose, the then president of the Congress Party, set up the National Planning Committee with Jawaharlal Nehru as president and K T Shah as secretary. This committee for the first time set a goal of a minimum standard of living to get rid of the appalling poverty of the masses, and decide upon a norm of minimum food and housing.

However, it was in independent India that for the first time someone talked about the extent of poverty in the country. The credit for this goes to Rammanohar Lohia, who in a speech in the Lok Sabha in the late 1950s drew attention to the large percentage of the population living with a daily expenditure of less than three and a half annas (an amount less than what it cost for the daily upkeep of Prime Minister Nehru's dog, he said). Despite the provocation, Nehru took the point made seriously and set up a committee of six distinguished scholars and public men to report to the Planning Commission on the matter. This committee put Rs 20 per capita per month as the minimum expenditure for an average Indian to stay above poverty. There is, however, no record of how the committee came to this figure.

Values of Consumption

The first empirical investigation into poverty in India, by V M Dandekar and Nilakantha Rath, was published in 1971 in two parts in the *Economic & Political Weekly* (2 and 9 January 1971). The basic approach of the study was to try and define

poverty in India under the then prevailing conditions. The authors felt that it would be appropriate at that time to call a person poor if he/she was not in a position to get two square meals every day. But, it was necessary to define "two square meals" in some reasonably measurable terms. By that time P V Sukhatme, the well-known statistician, had published a book in which, with the help of data from the National Institute of Nutrition, he had stated that an average Indian – average for age, sex, region and work patterns – needed 2,250 kilocalories (kcal) per day. The authors of the poverty study decided that households that had incomes or rather total expenditures that did not in fact permit them to provide food that contained this amount of calories in urban and rural India may be treated as poor.

The National Sample Survey Organisation (now Office) (NSSO) was conducting annual consumption expenditure surveys in which both the quantities and value of every type of expenditure were noted. The data were tabulated and the sample households were classified under per capita monthly total expenditure groups. For every group the average per capita monthly expenditures on the different items as well as the per capita physical consumption of these items were noted. The percentages of the population under the different groups of per capita expenditure were also noted. With the help of this information, the per capita daily intake of kcal from food could be calculated. This was done separately for urban and rural populations and for every state for 1961-62 where such detailed data had by then been published. With the help of these calculations, the per capita expenditure levels at which individuals were consuming food containing 2,250 kcal in rural and urban areas were derived. These were called the poverty lines for the rural and urban areas of the respective states. The percentage of the population with expenditure below these poverty lines was calculated from the given data. The all-India population below the poverty lines was the sum of the respective state's poor in the rural and urban areas, respectively.

This article is based on the first two-thirds of the keynote paper presented in the seminar "Poverty in the Contemporary World – Malady, Remedy" at Acharya Nagarjuna University, Guntur, 18 August 2011. It is dedicated to the memory of my friend Suresh D Tendulkar.

Nilakantha Rath (nrath66@yahoo.co.in) is honorary fellow, Indian School of Political Economy.

It is clear from this that the poverty level expenditures in different states and regions referred to the total expenditures of the persons, and not just expenditure on food. There was, of course, unlike in the case of food no norm specified for non-food items. The actual expenditures on non-food items were taken as what the people thought appropriate at their level of total income or expenditure.

There was no effort to estimate the units of other nutritional ingredients like proteins, minerals, vitamins, etc. But Sukhatme had pointed out that Indians from any region taking food that gave them the specified number of kcal were also getting the needed proteins from their diet.

In the 1980s the Planning Commission began calculating poverty lines along similar lines. But the NSSO was not publishing physical units of consumption for items other than cereals and pulses most of the time. And after 1974 the consumption expenditure surveys were conducted only once in five years. Since the Planning Commission needed poverty line estimates from year to year, it began using the price data from the Indian Labour Bureau's consumption expenditure surveys for their cost of living price indices. The whole effort was to estimate the changing values of the consumption baskets at the poverty line with the help of these price indices from year to year.

Questionable Methods

Soon after the formulation of the new economic policy in 1991, the Planning Commission set up a committee of experts, chaired by D T Lakdawala, to examine the entire question of the poverty line and lay down a methodology for its calculation. The committee submitted its report in 1993, quite sometime after the death of its chairman. After deliberations, the Planning Commission accepted the report and until recently had been following the method suggested by it.

This expert committee accepted the calorie norm approach as a starting point for its calculations. On the basis of the advice of nutrition experts, the committee adopted 2,400 calories per head per day for rural persons and 2,100 calories per head per day for urban persons as the norm. But, all further approaches and

methods suggested by the committee were, in my understanding, questionable.¹

(1) The committee accepted the NSS consumer expenditure survey of 1973-74 as the base for the calculations. This was unfortunate. The consumer expenditure survey for that year had been requested by a particular department of the government for some special purpose. It was conducted over nine months; three months of the year were not covered. The sample population surveyed was also smaller than during the normal consumer expenditure surveys. The committee could have used the more regular full year survey data for the year 1972-73; or, since that was a very poor agricultural year, it could have used the 1977-78 NSS consumption expenditure data, which was available. The choice of the data for an inadequately surveyed year was inexplicable.

(2) The committee began by calculating the poverty lines, separately for the all-India rural and urban populations. The all-India baskets were the weighted averages of the state-wise data. The poverty estimates should have been attempted at the state level, since the data were available at the state level, and the all-India estimates should have been a summation of the state estimates of the persons below the poverty lines. The poverty calculations should meaningfully be an aggregation of state-level estimates, not a disaggregation of the all-India estimates.

(3) Properly speaking, the state-level estimates of the poverty lines should have followed the same calorie norms as were used for the all-India estimates. Surprisingly enough, this was not done. The committee said in its report that the state-wise calculations on this basis were not being attempted since the "food baskets of different states were not comparable". While it is true that the food baskets of the states were different in content, surely the calories were comparable! It is amazing that the committee of experts did not notice this simple fact.

(4) The choice, therefore, was to apply the all-India basket and the poverty line calculated on that basis to every state. Since the prices of various commodities in different states were different, it became necessary to adjust the all-India poverty line to the states' prices. This was attempted by using the spatial price index for

different states for the year 1961-62, published in one of the two articles on the subject available at that time. This yielded the state level poverty lines for the urban and rural areas. This article's method of choosing prices at the state level left many things to be desired; but let me not dwell on that.

(5) For updating these poverty lines every year to take account of the changes in prices, the expert group suggested the use of the Consumer Price Index for Industrial Workers, routinely prepared by the Labour Bureau, for the urban poverty line, and the Consumer Price Index for Agricultural Labour for the rural poverty line. Now, it was obvious that all commodities featuring in the all-India basket will not be found in every state. The expert group therefore suggested the use of the price indices of two groups, food and non-food, in the two consumer price indices for updating. That the prices used in these consumer price indices were not necessarily the same as in the NSSO's consumer expenditure surveys, on the basis of which the poverty lines had been estimated, did not seem to matter. Nor did it matter that the weights of food and non-food items in the two indices were often different from their weights in the all-India poverty line basket or the state-level poverty line baskets.

It is not clear why this was suggested. For, the NSSO was conducting annual consumer expenditure surveys, with a smaller sample than the quinquennial surveys. These reported the quantity and value data for almost 80% of the commodities entering into household expenditure from which price data could be easily worked out. The Planning Commission was in a position to obtain this at the earliest from the NSSO every year.

(6) Both the above approaches resulted in distorting the state-level poverty lines and the consequent percentages of the population below the poverty lines. Two papers² published later had tried to highlight the extent of distortion at the state level arising out of this questionable method of calculation of the rural and urban poverty lines, which were the basic data required by the Planning Commission, the government and the public. But these objections were ignored. How distorted they were has now been demonstrated by

the calculations of the Tendulkar Committee of the Planning Commission last year. It is now clear that the Commission and the governments in India persisted with erroneous calculations of poverty lines at the state level for more than 16 years.

The Tendulkar Committee

Finally, in 2009 the Planning Commission set up another expert committee under the chairmanship of Suresh D Tendulkar, whose report³ was accepted by the Planning Commission this year. The Tendulkar Committee made a basic corrective departure. It used the price data from the NSSO's consumer expenditure survey for the latest available year (2004-05) to calculate the price indices for the rural and urban areas of the states as well as the union. Besides the 80% of the items in the consumer baskets for which price data were available from the NSS surveys, the committee used other similar survey data from NSS surveys for education and health expenditures and for rent. This removed a major source of error from the poverty line calculations by the Planning Commission following the recommendations of the Lakdawala Committee.

The Tendulkar Committee decided to move away from the calorie norm as a starting point for definition of the poverty line. Instead, it said that in order to maintain continuity with the past it will stick to the percentage of population below the poverty line for the all-India urban population for 2004-05 already calculated on the lines of the Lakdawala Committee recommendations.⁴ It then reworked the corresponding poverty line, showing this level of urban poverty, after adding the estimated education and health expenditures per capita. Then, it stated that it will assume that the poverty lines for the all-India rural as well as the poverty lines for the rural and urban populations of the states shall be the same, with the differences in prices in the urban and rural areas of the states being adjusted. It did its calculations accordingly, including devising spatial price indices with the help of the NSS price data.

In checking the resultant calorie intake in different states and in rural and urban areas at the new poverty lines so calculated, the committee found that in urban areas the poverty line calorie intake was a little lower than 1,800 kcal and in most rural

areas a little below 2,000 kcal. This, the committee pointed out, was consistent with the latest prescription for the purpose by the Food and Agriculture Organisation (FAO). The committee said that there had been a steady decline in calorie intake over the years in both rural and urban India except in the very lowest expenditure group. This, the committee considered could be the result of the changing food preferences of people as well as food and non-food items over time. The committee felt that as long as the poverty line expenditure, originally calculated on the basis of a basket of food providing the normative calories enabled the person (or household) to purchase that basket, the change in food consumption and calories was a matter of consumer choice that must be respected.

I consider that by taking into account the NSS implicit prices at the all-India and the individual state level, the Tendulkar Committee did a major correction and improvement. But, having taken this corrective step, I wonder why it did not do so with regard to the all-India urban poverty line itself on the basis of which all other poverty lines were to be calculated. It accepted the earlier estimated proportion of the urban population below the poverty line for 2004-05 as the basis of its subsequent calculations, for the sake of continuity. But it could have maintained the sense of continuity in another way. It could have recalculated the all-India urban poverty line with the help of NSS implicit price data in 1973-74 and related it to the all-India urban price data, and calculated it as a weighted average of the state-level NSS price data for 2004-05 instead of the urban consumer price index data of the Labour Bureau. That would have yielded a different poverty line and a different proportion of the poor for the all-India urban population, how much and in which direction I do not know. (I cannot try to calculate it because the data are not available to me.) Even at this stage, I would urge that this may be done, to be fully consistent with the basic Tendulkar Committee approach.

The Tendulkar Committee decided to use the all-India urban poverty line, calculated in the above manner, for calculation of rural and urban poverty lines for the

states. For this purpose the committee went into the preparation of the spatial price indices for the rural and urban populations of the states as well as the all-India rural, after calculating Laspeyres and Paasche and finally the Fisher price indices for 2004-05, on the basis of NSSO data for 2004-05.

I wonder why the committee took all this trouble. Since it wanted the all-India urban poverty line basket to be the basket for deriving the all-India rural and the state rural and urban poverty lines, the straightforward procedure could have been the valuation of the urban basket at respective all-India rural and the state rural and urban prices for 2004-05. Of course, this would not have been straightforward for all individual items in the all-India urban poverty level basket. For, in different states, in rural and urban areas, not all individual items appearing in the all-India basket would be found. For example, jowar/bajra/ragi would not be found in many states' baskets; tapioca would not be found in states outside Kerala; not every edible oil/pulse would be found in the baskets of every state, though these would all feature in the all-India basket. Hence it would have been necessary to take the physical quantity of the broad groups, like cereals, cereal substitutes, pulses, edible oil, clothes, footwear, etc, and estimate the price index of each group, at the state urban and rural levels, by taking the commodity share of the individual items in the state's basket in the total quantity of the same group as weights.

To identify the total expenditure group in the state's urban/rural expenditure table for which these group average prices are to be calculated, it would be desirable to choose that total expenditure group in which the total cereal consumption was reported to be about the same as in the all-India urban poverty line group. Then these weighted group prices could have been used to value the all-India urban poverty line level basket for the urban/rural areas of different states. This would have ensured the physical quantities in the all-India basket at the state level, while being valued at different prices in the states.

These state-level urban and rural poverty lines could then be used in the subsequent years for adjusting the respective poverty lines for changes in prices. The NSSO has

been conducting annual consumption expenditure surveys with a smaller state sample. But it would yield price data to adjust the state poverty lines every year. The Planning Commission of course would be free to change the base basket for the poverty line when it chooses to do so.

I wonder why, given the opportunity to redefine the poverty lines, the committee, after deciding to use the NSSO prices, persisted with the calculation methods of the Lakdawala Committee, instead of the straightforward calculation with the all-India urban poverty line basket which it had decided to stick to. Had it used the latter it would have avoided the unnecessary calculation of spatial price indices every subsequent year for the purpose, as the committee report suggests. It is not too late for the Planning Commission to do so. Having made a major correction, persisting with the other errors is not understandable.

Changing Demands

Finally, the declining calorie intake of the people in rural as well as urban areas: The Tendulkar Committee report as well as the documents which were prepared for this committee's work generally explain this declining tendency as essentially an expression of the consumers' changing preferences over the years. This may be so, particularly at the higher per capita expenditure levels. But, there are other circumstances that have contributed to this.⁵ Over the years there has been a steady change in the demand for work for both earning and living in most rural and even urban areas. For example, mechanisation of many agricultural operations and for lifting water from wells for irrigation has reduced the need for the harder work involved for the farm workers. Thanks to the provision of wells/tube wells in many villages, women and children do not have to walk long distances to fetch water for household needs. The increased bus transport has almost eliminated the need to walk from one village to another for family and business needs; indeed, a person today appears to prefer to wait for hours to catch a bus than walk the distance. All this has resulted, gradually, in less strenuous work, leading to a lower demand for energy intake.

Another development has also contributed to this. The supply of persons of

working age, in rural areas, has increased over the years. But the demand for workers has not kept pace with this supply. In urban industrial work this would mean growth in the number of the unemployed. But, in rural areas, in agriculture in particular, this results in sharing of the limited work by the larger number of workers. This has resulted in declining normal hours of daily work. Informal enquiries in different parts of rural India yield the information that the effective number of hours of work during a day is today no more than five hours, irrespective of when the worker comes for work and when he departs. In the early 1960s, it was about 6.5 hours. Indeed, studies based on recorded documents show that in Nellore district of Andhra Pradesh, farm workers used to put in nine hours of work during the day in the 1880s and 1890s. Be that as it may, the declining hours of work during the last half century has been both the cause and the consequence of lower food, mainly cereal, intake. Indeed, a well-known American economist had pointed out in the 1950s that such distribution of work due to faster growth of the working age population than the demand for work, will lead to the disguising of rural unemployment in this manner. All this is not voluntary, but involuntary. I might add that this declining food intake also leads to a worker not being able to put in the same amount of "work" in an hour as before, thereby leading to greater demand for workers for the same amount of work. There are also reasons for greater expenditure on certain non-food items, which cannot be strictly called the voluntary choice of consumers. These are what Marshall called conventional necessities. One would have found in those days working women with sarees with ump-teen knots. It is no longer so, thanks to both greater exposure to the outside world and availability of relatively cheaper wear. These are not voluntary choices, strictly speaking.

I do not wish to go into the question of the lower calorie norm for India calculated by the FAO and quoted by the Tendulkar Committee. I only wish to mention that on the basis of the calorie needs of Indian children, boys and girls of different age groups and of adult men and women, in

rural and urban areas, under sedentary, moderate and heavier working conditions, estimated by the Indian Council of Medical Research,⁶ I have calculated the average calorie needs of an average Indian in rural and urban India, under moderate and sedentary work conditions, with the help of the 2001 population age and sex distribution data for weights. They are: For urban India, 2,260 kcal and for rural India, 2,170 kcal, and for all 2,200 kcal, for moderate work by adult men and women. If we assume only sedentary work by the adults, the norms are: for rural, 1,970, for urban, 2,025, and for all 1,980 kcal. The rural norms are lower than the urban because the percentage of children in the rural population is higher than in the urban. The FAO norms are lower than when all adults are assumed to be doing only sedentary work. I do not know if FAO has used the Sukhatme method of deducting twice the standard deviation from the average to get at the lower limit of the norm they calculated.

NOTES

- 1 For a detailed discussion, see, Nilakantha Rath, "Poverty in India Revisited", *Indian Journal of Agricultural Economics*, January-June 1996.
- 2 See N Rath above, and Sharadini Rath, "Poverty by Price Indices", *Economic & Political Weekly*, 4 October 2003.
- 3 S D Tendulkar (Chairman), *Report of the Expert Group to Review the Methodology for Estimation of Poverty*, Planning Commission of India, 2009. See also, Himanshu, *Towards New Poverty Lines for India*, Planning Commission, 2009, a document accompanying the Tendulkar report.
- 4 The committee says that it considered this all-India urban poverty line a proper useful base for continuity because there had been no complaint about the urban poverty line based on the Lakdawala Committee recommendations. My recollection is different. In the very first meeting of the Poverty Eradication Mission set up by the Government of Andhra Pradesh, the then chief minister, Chandrababu Naidu, began the deliberations of the meeting with a scathing attack on the urban poverty estimates for Andhra Pradesh. He said that he thought such terrible mistakes had been committed because most likely the basic data collected by the NSSO were wrong. I was a member of the Mission. I suggested to the chief minister that before he questioned the correctness of data, it is necessary to examine the way the poverty calculations were made. I had later sent copies of my 1996 paper to the deputy chairman of the Mission for the information of the CM and others in the Mission. In the meeting some officials mentioned that the Government of Uttar Pradesh had also raised serious objections to the urban poverty estimates for Uttar Pradesh.
- 5 The points in this section have been raised in N Rath (1996), cited above.
- 6 National Institute of Nutrition, *Nutrition Requirements and Recommended Dietary Allowances for Indians: A Report of the Expert Group of the Indian Council of Medical Research (Final Draft)*, 2009, Table 4.14.