Counting the Poor

Measurement and Other Issues

C Rangarajan, S Mahendra Dev

Since the submission of the report of the 2012 expert group on poverty measurement, there have been a few comments on it. The purpose of this note is to clarify some of the issues raised by researchers and others on this report. The clarifications discussed here are (1) what is new in the approach defining the poverty line; (2) the use of calories; (3) multidimensional poverty; (4) high urban poverty in many states; (5) NAS-NSS consumption differences; (6) poverty measures in other countries; (7) public expenditure and poverty; and (8) poverty ratio eligibility for access to programmes. As most of the researchers have commented on multidimensional poverty, this note also elaborates on the reasons for not considering this measure in the report.

C Rangarajan (*c.rangarajan@nic.in*) is currently Chairman, Madras School of Economics; S Mahendra Dev (*profmahendra@igidr.ac.in*) is Director, Indira Gandhi Institute of Development Research, Mumbai.

In India, we have had a long history of studies on measurement of poverty.[1] The methodology for estimation of poverty used by the Planning Commission has been based on the recommendations made by working group/task force/expert groups consisting of eminent experts in the field.

In June 2012, the Government of India appointed an expert group (with C Rangarajan as chairman) to take a fresh look at the methodology for the measurement of poverty. The committee submitted its report towards the end of June 2014 (GoI 2014).

In defining the new consumption basket separating the poor from the rest, the expert group was of the considered view that it should contain a food component that addresses the capability to be adequately nourished as well as some normative level of consumption expenditure for essential non-food item groups (education, clothing, conveyance and house rent) besides a residual set of behaviourally determined non-food expenditure.

As a first step towards defining the food component of the poverty line basket, the expert group has computed the average requirements of calories, proteins and fats based on norms of the Indian Council of Medical Research (ICMR), differentiated by age, gender and activity for all-India rural and urban regions to derive the normative levels of nourishment at the all-India level for 2011-12, separately for the rural and the urban populations. Accordingly, the energy requirement works out to 2,155 kilocalorie (kcal) per person per day in rural areas and 2,090 kcal per person per day in urban areas. It is, however, more appropriate to treat the normal calorie requirements to be within a range of +/- 10% of these values and the lower level of such a range to be adequate enough to not adversely affect health. The protein and fat requirements have been estimated on the same lines as for energy. These requirements are 48 gm and 28 gm per capita per day, respectively, in the rural areas; and 50 gm and 26 gm per capita per day, respectively, in urban areas.

A food basket that simultaneously meets all the normative requirements of the three nutrients defines the food component of the poverty line basket proposed by the expert group. These nutrient norms are met for persons located in the sixth fractile (25%-30%) in rural areas and for those in the fourth fractile (15%-20%) in urban areas in 2011-12. The average monthly per capita consumption expenditure on food in these fractile classes is Rs 554 in rural areas and Rs 656 in urban areas.

The median fractile (45%-50%) values of clothing expenses, rent and conveyance are treated as the normative requirements of the basic non-food expenses of clothing, housing and mobility of a poverty line basket. This works out to Rs 141 per capita per month in rural areas and Rs 407 in urban areas. The observed expenses of all other non-food expenses of the fractile classes that meet the nutrition requirements are considered as part of the poverty line basket. This works out to Rs 277 per capita per month in rural areas and Rs 344 in urban areas.

The new poverty line thus works out to a monthly per capita consumption expenditure of Rs 972 in rural areas and Rs 1,407 in urban areas in 2011-12. For a family of five, this translates into a monthly consumption expenditure of Rs 4,860 in rural areas and Rs 7,035 in urban areas.

Clarifications on Issues

Since the submission of the report of expert group (Rangarajan), there have been a few comments on the report published particularly in this journal (Ray and Sinha 2014; Mishra 2014; Subramanian 2014) and elsewhere (Deaton and Dreze 2014). Of course they have also commented on the positive aspects of the report. We provide clarifications below on various issues raised by them.

What Is New?

It may be noted that the poverty line computed by the Rangarajan group has three components: (a) food component, (b) normative level of expenditure for essential non-food items such as education, clothing, conveyance and house rent, and (c) behaviourally determined expenditure for other non-food items.

The group has gone back to the idea of separate poverty line baskets for rural and urban areas. This stands to reason. This is also consistent with the way we have derived the poverty line. The introduction of norms for certain kinds of non-food expenditures is an innovation. It is a simple recognition of the fact that these expenditures constituted a significant part of total consumption. In the absence of any other normative criteria, the median fractile class expenditures were treated as the norm. In fact, non-food consumption as a proportion of total consumption has been steadily rising. That is why the group decided to take a fresh look at the basket rather than only update the old basket for price changes.

Mishra (2014) says that the expert group takes the commodity basket from two fractile groups and that this poses a behavioural dilemma. It may be noted that when we adopt two norms, one for food and the other for certain non-food expenditures, obviously the emerging basket will not correspond to the behavioural pattern of a particular expenditure class. Our attempt has been to estimate the level of private consumption expenditure which will meet certain minimum requirements.

Srinivasan (2007) calls for a new approach to poverty measurement. He says,

> Useful starting points for a new approach lie in anchoring poverty lines in social norms and in the distinction made by PPD[2] between goods and services to be bought by households from their own resources and those to be supplied by the state, thus providing a meaningful way of distinguishing the responsibilities of households (i e, the private sphere) and those of the state (i e, the public sphere).

In a personal correspondence with one of the authors he elaborates his idea as follows:

> I have suggested an alternative, namely to start from a socially defined poverty bundle of goods and define as those who do not consume that bundle. In valuing the bundle and updating it requires the use of prices actually paid by the poor and also excluding that part of the bundle whose cost is in part met by subsidies (personal correspondence).

The suggestion of Srinivasan, that we should start from a "socially defined poverty bundle of goods", is a good idea. But the problem is in how to arrive at such a socially defined poverty bundle. In some ways, this is precisely what we have done regarding private expenditure. We have arrived at a minimum level of private consumption expenditure, both in relation to food and non-food items. Unless a method is specified to arrive at socially defined poverty bundle of goods, it may be difficult to measure poverty. We have discussed below on the contribution of public expenditures.

Among other things, Subramanian (2014) provides a critique of the expert group's methodology for identifying the poverty line, particularly unvarying "poverty line basket". It may be noted that the report of the expert group chaired by Lakdawala discussed the issues of the fixed commodity basket and varying commodity basket and opted for the fixed one for comparability. It may, however, be noted that while the basket may remain the same in terms of composition, weights for price indices could change since the updation of the poverty line is to be done using the Fisher Index. As the expert group (Tendulkar) said, the "proposed price indices (Fisher Ideal indices in technical terms) incorporate both the observed all-India and the state level consumption patterns in the weighting structure of the price indices" (GoI 2009: 2).

Use of Calories

Deaton and Drèze (2014) criticise the group for going back to calorie norms. Ray and Sinha (2014) appreciate the use of calories but they do not agree with the sharp reduction in rural daily calorie requirements. They also mention Amartya Sen who said that there was no decline of calories for the population around the poverty line. Apart from taking the recent ICMR norms, the revised calorie norm is also justified on the following grounds.

(i) First, as a recent study by Meenakshi and Viswanathan (2013) shows, the average calorie norms could be significantly lower if we replace the 95th percentile heights and a body mass index (BMI) of 21 that underline the ICMR norms for adults by a possibly more appropriate (for the current adult population whose height is given) median (or mean) heights and a BMI of 19 that is still higher than the lower limit of 18.5 that defines a healthy adult.

(ii) Second, we have the idea (Sukhatme 1981) of a margin of homeostatic adaptation within which individuals can adapt, without an adverse impact on health and activity status, to variation in intakes around the norms.

These two factors would suggest that the calorie norms be treated as lying in the range, of, say, ±10%, where intakes at the lower level need not compromise health and activity status.

The new poverty line is not limited only to calorie intake but also extends to fats and proteins. As mentioned above, calories, fats and proteins are used mainly for locating the food component. It is true that there is no direct correlation between calorie and nutrition. Some use the calorie norm directly as a cut off for measuring poverty. This method may give implausible results (Dev 2005). There are many other factors which contribute to nutrition. But taken in conjunction with other factors mentioned in the report, relating minimum food consumption to calorie, fat and protein requirements appears to be a reasonable approach. The expert group (Rangarajan) takes the considered position that, taken in conjunction with public provisioning of a range of public goods and services (sanitation, drinking water, immunisation and vaccination, etc) on a universal basis, the access to the food component of the poverty line basket will have a favourable impact on the nutrition-status outcomes for the population. Without such norms, the minimum level may turn out to be arbitrary. The Tendulkar group itself did not abandon calorie norms. They took the urban poverty basket as given. They also claimed that ultimately the poverty line that they recommended satisfied Food and Agriculture Organization (FAO) norms.

Ray and Sinha (2014) rightly point out the importance of micronutrients for nutrition. We recognise the need for micronutrients but data on this are not readily available to include them in the food component of the poverty line. They also mention that dietary habits vary across regions and that the poverty line should be based on state variations in consumption. This is not a new thing and these issues were discussed in the expert group (Lakdawala) report. In fact, there was a note of dissent by S Guhan highlighting the need for separate poverty lines based on variation in consumption of different states. But all the expert groups (Lakdawala and subsequent reports) decided to have all India consumption basket only.

Multidimensional Poverty

Ray and Sinha (2014) are critical of the report saying that the group did not widen the concept of poverty to multidimensional poverty as mentioned in the terms of reference. They use National Sample Survey (NSS) and National Family Health Survey (NFHS) data to highlight multidimensionality. Subramanian (2014) also says that the expert group has "forfeited an opportunity to press the case for a multidimensional assessment of poverty". It may be noted that the group discussed these issues and has given reasons in the report for why it has not attempted estimating multidimensional poverty. The search for non-income dimensions of poverty possibly stems from a view that in terms of the capabilities approach to the concept and measurement of poverty, some of these "capabilities", may not be tightly linked to the privately purchased consumption basket in terms of which the poverty lines are currently drawn. Therefore, poverty based on income or consumption is different from deprivations based on education or health.

Oxford Poverty and Human Development Initiatives (OPHDI) and the United Nations Development Programme (UNDP) together developed the multidimensional poverty index (MPI). It used 10 indicators relating to health, education and standard of living. However, these multidimensional indicators/measures raise several issues regarding their measurability, aggregation across indicators, and, crucially, of databases that provide the requisite information at reasonably short intervals. These need to be considered and evaluated carefully. For example, the child mortality indicator has a problem as it is for population groups and not for households.

Aggregation is another problem. In principle they should be independent. Access to safe drinking water, for example, cannot be aggregated with indicators, of, say, child mortality. Even in respect of independent indicators, analytically appropriate rules of aggregation require that all of them relate to the same household. It is this factor that dictated the choice of NFHS-3 (2005-06) as the database for OPHDI-study, which, in turn, dictated the choice of the indicators used in the study. The 2005-06 index would hardly be appropriate for the present day. More generally, this requirement poses several data constraints. For example, decennial censuses provide valuable information on access of households to a range of housing amenities – water, electricity and about the materials used for the floor, the walls and the roof of structures that house the population. Besides the obvious issues of periodicity (once in 10 years), this information cannot be combined with those from NSS surveys on social consumption (on access to publicly provided good and services) or the NSS employment-unemployment surveys that capture school attendance of children and educational outcome for all. It is also difficult to combine NSS data on consumption poverty with other deprivations which relate to some other households.

Most importantly, the fact that the data sources listed above (the same holds good for the data collected under the Socio-Economic Caste Census (SECC) 2011 as well) cannot be combined with the consumer expenditure surveys – the database for poverty line defined in terms of consumption basket – as they relate to different sets of households, also rules out combining it with indicators based on "other criteria" as proposed in the terms of reference.

It may be noted that the group is not against multidimensional poverty or deprivations. One can analyse the progress of non-income indicators like education, health, sanitation, drinking water, child mortality, etc, over time along with income or consumption poverty. But, aggregating all of them into an index would have several problems as indicated above. Deaton and Dreze (2014) also indicate that

> it is important to supplement expenditure-based poverty estimates with other indicators of living standards, relating for instance to nutrition, health, education and the quality of the environment.

On multidimensional issues Srinivasan (2007) says viewing the public services as another dimension besides consumption in a multidimensional conceptualisation of poverty is more fruitful. However, he is critical of multidimensional indices. He says,

> collapsing many relevant but not necessarily commensurate dimensions into a single index defined as an arbitrarily weighted sum of disparate indexes makes little sense. The Human Development Index pioneered by the UNDP is an example of an arbitrarily weighted sum of non-commensurate indexes. It is certainly not a multidimensional conceptualisation in any meaningful sense but simply yet another arbitrary unidimensional index (Srinivasan 2007: 4,162).

In the minds of most people, being rich or poor is associated with levels of income. The various non-income indicators of poverty are in fact reflections of inadequate income. Defining poverty in terms of income or in the absence of such data in terms of expenditure seems most appropriate and it is this method which is followed in most countries.

Higher Urban Poverty

Deaton and Dreze (2014) and EPW (2014) say that under the Rangarajan group's method, urban poverty ratio is higher than rural poverty in many states. Based on the expert group (Tendulkar) methodology, urban poverty is lower than rural poverty (except for Punjab) in 2011-12. In fact, there was severe criticism of the Tendulkar expert group methodology for its use of the urban basket for rural areas and for underestimating urban poverty. Their report has also been criticised for not taking into account the aspirations of people. Therefore, the Rangarajan group tried to correct this problem by including median fractile expenditures for four essential non-food items.

It is true that based on the Ragarajan expert group methodology, 13 out of 28 states showed higher urban poverty than rural poverty. These states are: Andhra Pradesh, Bihar, Goa, Haryana, Jammu and Kashmir, Karnataka, Kerala, Manipur, Nagaland, Punjab, Rajasthan, Tripura, Uttar Pradesh and Uttarakhand.

What are the possible explanations for higher urban poverty in some states? One can give the following explanations:

It may be noted that the Lakdawala Committee-based estimates for 2004-05 show that 10 out of 28 states showed higher urban poverty than rural poverty. The Lakdawala group and Rangarajan group have consumption baskets separately for rural and urban areas. On the other hand, the Tendulkar group had only one consumption basket for urban areas which is used for rural areas. Obviously, in the Tendulkar group methodology, rural poverty would be higher than urban poverty because getting the urban basket in rural areas is costly. In contrast, there are two baskets (rural and urban baskets) separately in Lakdwala group and Tendulkar group.

In the Rangarajan group analysis, the median fractile (45%-50%) values of clothing expenses, rent, conveyance and education expenses are treated as the normative requirements of the basic non-food expenses of clothing, housing, mobility and education of a poverty line basket. This works out to Rs 141 per capita per month in rural areas and Rs 407 in urban areas. The basic non-food expenses constitute 14.5% of total poverty line in rural areas and 29.1% in urban areas. It shows that the share of these items in urban areas is twice that of rural areas. It is known that house rents and conveyance charges, in particular, are much higher in urban areas than in rural areas. As a result of this higher share of basic non-foods, the share of total non-foods in the total poverty line in urban areas is 53% as compared to 43% in rural areas.

One may ask the question: why do only 13 states have higher urban poverty? What about other 15 states which have a higher rural poverty than urban poverty? It is possible that in these 15 states, in spite of the inclusion of normative expenses on basic non-foods and higher expenses on housing and conveyance, the purchasing power of a larger number of people in rural areas does not match that of the urban population. This needs detailed study.

It is also possible that in spite of Mahatma Gandhi National Rural Employment Guarantee Act and other schemes, a significant number of rural poor may be migrating to urban areas in search of employment. In other words, poverty is being exported from rural to urban areas. Studies have shown that seasonal migration is quite high from rural to urban areas. This also needs investigation.

NAS-NSS Consumption Differences

Ray and Sinha (2014) say that the committee discussed the differences between the National Accounts Statistics (NAS) and the NSS but lost an opportunity in suggesting a compromise to resolve the issue. It may be noted that these two estimates of consumption (NAS and household survey based) do not match in any country and India is no exception. What is alarming in India is that the difference between the NAS and NSS is widening over time. For example, the difference was less than 10% in the late 1970s; it rose to 50% in 2009-10. The differences are much higher for non-food (46%) as compared to food. Some adjustments made in the report reduced the differences from 45.8% to 32.5%. But the differences are still high. Apart from the problems in the NAS, the fatigue of the respondents in NSS might result in non-capture of some of the non-food items. This can be rectified in future NSSs. However, it is still difficult to reconcile the differences between NAS and NSS, particularly for non-food items.

Poverty Measures in Other Countries

There are also comments that we should look at the poverty measures of other countries. The expert group looked at the methodology of poverty estimation of other countries. Most of the developing countries use a consumption basket-based poverty line. Developed countries generally use the concept of relative poverty. In some countries the poverty line is an exogenously set proportion of mean or median income of population. Ray and Sinha (2014) also talk about inequality and relative poverty. However, if we look at the Indian data the proportion of population with consumption as a fraction of the median remains largely invariant over time.

Reviewing the method of estimation of poverty in other countries and by the World Bank, the Rangarajan expert group arrived at the conclusion that neither their methodological nor procedural aspects are superior to what is being used in India at present. The estimates of poverty in India are based on a methodology which stands apart for it is able to measure the incidence of poverty by capturing the demographic pattern and consumer behaviour separately in rural and urban areas and also by capturing the state-wise variation in the prices of goods and services.

Public Expenditure and Poverty

The poverty line is based on private consumer expenditure. If we take into account public expenditure, the actual well-being of the household will be higher than what is indicated by the poverty line. In the seven-year period 2004-05 to 2011-12, public expenditures on education and health per capita at constant 2004-05 prices have nearly doubled with an implied compound annual growth rate of close to 10% per annum. Given that these services are, typically, provided at heavily subsidised prices – if not given free – the reported private expenditures as captured in the NSS consumer expenditure surveys on them would be lower than their true value. However, in the absence of data on the distribution of the public expenditures on these social services by size-class of private consumption expenditure, they cannot be factored into either the construction of the poverty line or in the assessment of their impact on measured poverty. In the case of the public distribution system (PDS), we do have information on the monthly per capita expenditure of households using PDS and the quantities of grains, etc, bought. One could, therefore, analyse the impact of PDS on measured poverty (Himanshu and Sen 2013).

Poverty Ratio for Eligibility under Programmes

Finally, the Planning Commission has earlier decided to delink the consumption-based poverty estimates for allocating resources to states. The expert group deliberated on the issue of use of poverty ratio for determining the eligibility and entitlements for a wide range of poverty alleviation programmes and social welfare schemes implemented by various ministries and departments of the Government of India in association with the state governments.

The group recommends that the beneficiaries under target group-oriented schemes of the government may be selected from the deprivation-specific ranking of households. Such ranking of households could be generated for a large number of indicators representing deprivation and levels of living for which the information has been gathered at the household and individual level in the SECC-2011 and population census. The beneficiaries could be selected from this set of households until the resources earmarked for the programme/scheme permit.

To conclude, to obtain a general picture of the progress of the country, a suitable measure on poverty is useful. Poverty is not the same as hunger. Hunger is far worse. Nor does the poverty line mean a comfortable standard of living. It represents the absolute minimum. Obviously, policy should work towards not only to reduce the number of people below that line but also ensure that people in general enjoy a much higher standard of living. Numbers do indicate that the poverty ratio in India is coming down even though it may remain at a high level. Policymakers must continue to follow the twofold strategy of letting the economy grow fast and attacking poverty directly through poverty alleviation programmes.

NOTES

1 Srinivasan (2007) reviews the evolution of poverty lines in India from a historical perspective and critically discusses some issues relating to official poverty lines. Srinivasan (2013), among other things, discusses about poverty lines in India in the recent past.

2 PPD refers to the Perspective Planning Division of the Planning Commission.

REFERENCES

Deaton and Dreze (2014): "Squaring the Poverty Circle", *The Hindu*, 25 July, Vol 44, No 31.

Dev, Mahendra, S (2005): "Calorie Norms and Poverty", *Economic & Political Weekly*, Vol 40, No 8.

EPW (2014): "Rangarajan's Measure of Poverty", Editorial, *Economic & Political Weekly*, 2 August.

GoI (2009): "Report of the Expert Group to Review the Methodology for Estimation of Poverty", Planning Commission, Government of India.

– (2014): "Report of the Expert Group to Review the Methodology for Measurement of Poverty", chaired by C Rangarajan, Planning Commission, Government of India.

Himanshu and Abhijit Sen (2013): "In-kind Transfers: Impact on Poverty", *Economic & Political Weekly*, Vol 48, Nos 45-46.

Meenakshi, J V and Brinda Viswanathan (2013): "Estimation of Calorie Norms and Measurement of Food Intake: Some Implications for the Magnitudes of the Prevalence of Undernutrition in India", *Indian Economic Review* (Special Issue on "Perspectives on Economic Development and Policy"), Vol XLVIII, No 1, pp 167-88.

Mishra, Srijit (2014): "Reading between the Poverty Line", *Economic & Political Weekly*, 27 September, Vol 49, No 39.

Ray, Ranjan and Kompal Sinha (2014): "Rangarajan Committee Report on Poverty Measurement: Another Lost Opportunity", *Economic & Political Weekly*, 9 August, Vol 49, No 32.

Subramanian, S (2014): "The Poverty Line: Getting It Wrong Again …and Again" *Economic & Political Weekly*, Vol 49, No 47, 22 November.

Srinivasan, T N (2007): "Poverty Lines in India: Reflections after the Patna Conference", *Economic & Political Weekly*, 13 October.

– (2013): "Planning, Poverty and Political Economy of Reforms: A Tribute to Suresh Tendulkar", *Indian Economic Review* (Special Issue on "Perspectives on Economic Development and Policy"), pp 167-88, Vol XLVIII, No 1.

Sukhatme, P V (1981): "On Measurement of Poverty", *Economic & Political Weekly*, Vol 16, No 32, pp 1318-24.