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## **Abstract**

*In June 2012, the Government of India appointed an Expert Group (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. The purpose of this article is to briefly explain the approach taken by this Expert Group (Rangarajan) and also to clarify some of the issues raised by few researchers and others on the report recently. This paper first presents approach of Expert Group (Rangarajan). The clarifications are given under the following heads: (1) what is new in the approach for poverty line; (2) Use of calories; (3) Multi-dimensional poverty; (4) High urban poverty in many states; (5) NAS-NSS consumption differences; (6) poverty measure in other countries; (7) public expenditure and poverty; (8) poverty ratio under eligibility under programmes. As the most of the researchers commented on multi-dimensional poverty, this note elaborates on the reasons for not undertaking this measure in the report.*

**Keywords: poverty line; poverty ratio; multi-dimensional poverty; poverty alleviation programmes; measurement of poverty**

**JEL Code: I30, I32 and I38**

## Counting the Poor: Measurement and Other Issues<sup>1</sup>

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Growth is not the sole objective of economic policy. It is necessary to ensure that the benefits of growth accrue to all sections of the society. Eradication of poverty is thus an important objective. Human beings need a certain minimum consumption of food and non-food items to survive. However, the perception regarding what constitutes poverty varies over time and across countries. Nevertheless, there is need for a measure of poverty. Only then, it will be possible to evaluate how the economy is performing in terms of providing a certain minimum standard of living to all its citizens. Measurement of Poverty has, therefore, important policy implications.

There are in fact many approaches for measuring poverty. Some analysts focus on deprivations of people in terms of health, education, sanitation or housing. There are however many problems associated with this approach including difficulties in aggregating deprivations on several scores derived from different sources. Perhaps the best approach is look at it in terms of certain minimum consumption expenditure per person or preferably per household. Any household failing to meet this level of consumption expenditure can be treated as a poor household. This minimum level of consumption expenditure can be derived, in turn, in terms of minimum expenditure on food and non-food items. The poverty ratio, which is the ratio of number of poor to the total population expressed as percentage. It is also known as head-count ratio. The poverty ratio is measured from an exogenously determined poverty line quantified in terms of per capita consumption expenditure over a month and the class distribution of persons obtained from the large sample survey of consumer expenditure data of the National Sample Survey Office (NSSO).

In India, we have had a long history of studies on measurement of poverty<sup>4</sup>. The methodology for estimation of poverty used by the Planning Commission has been

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<sup>1</sup> Shorter version appeared in Economic and Political Weekly

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based on the recommendations made by Working Group/Task Force/Expert Groups consisting of eminent experts in the field. The Planning Commission has constituted these Groups from time to time to revisit the methodological issues related to the measurement of poverty so as to make the estimates more relevant to the contemporary economic situation. After the Working Group of the Planning Commission delineated the methodology of poverty estimation in 1962, it has been intensely debated by the academicians, experts, policy planners, etc. over the years. In response, the Planning Commission has constituted Task Force/Expert Group from time to time to review the methodology. These include the Task Force under the chairmanship of Y. K. Alagh in 1977; the Expert Groups under the chairmanship of D.T. Lakdawala in 1989 and S.D. Tendulkar in 2005.

In June 2012, the Government of India appointed an Expert Group (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. The purpose of this article is to briefly explain the approach taken by this Expert Group (Rangarajan) and also to clarify some of the issues raised by few researchers and others on the report recently.

## **1. APPROCHES OF THE EARLIER COMMITTEES**

The Planning Commission is the nodal agency in the Government of India for estimation of poverty and these estimates are based on the recommendations of the committees appointed by it. Before going to the Expert Group (Rangarajan), the approaches of earlier committees on estimation of poverty are described below.

The Working Group 1962 recommended that the national minimum consumption expenditure for a household of five persons (four adult consumption units) should not be less than Rs.100 per month or Rs.20 per capita per month in terms of 1960-61 prices. For urban areas, this figure was Rs.125 per month or Rs.25 per capita per month to cover the higher prices there. The poverty line excluded expenditure on health and education, both of which, it was assumed, were to be provided by the State. The Working Group (1962) appeared to have taken into account the recommendation of balanced diet made by the Nutrition Advisory Group of the

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<sup>4</sup> 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.

Indian Council of Medical Research (ICMR) in 1958. This poverty line was widely used in the 1960s and 1970s to estimate the poverty ratio at national and state level.

Task Force 1979 (Alagh) (GOI, 1979) estimated average calorie requirements and the poverty line corresponding to the calorie requirement. The estimated calorie norm was 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas. To work out the monetary equivalent of these norms, 28th Round (1973-74) NSS data relating to household consumption both in quantitative and value terms were used. Based on the observed consumer behaviour in 1973-74 it was estimated that, on an average, consumer expenditure (food and non-food) of Rs.49.09 per capita per month was associated with a calorie intake of 2400 per capita per day in rural areas and Rs.56.64 per capita per month with a calorie intake of 2100 per day in urban areas. The NSS distribution of private consumption was adjusted *pro-rata* to correspond to the consumption estimates of National Accounts Statistics (NAS) made by the Central Statistical Office (CSO). Using the poverty line and the adjusted distribution of persons by expenditure classes for the reference year the percentage of persons below the poverty line was estimated. The poverty line defined by the Task Force at 1973-74 prices was updated by the Planning Commission (to estimate poverty for a later year) using the implicit CSO (Central Statistical Office) private consumption expenditure deflator.

Planning Commission appointed Expert Group (Lakdawala) in 1989 which submitted its report in 1993 (GOI, 1993). The Expert Group (Lakdawala) did not redefine the poverty line. It retained the one defined by the Task Force (Alagh) which was at national level in rural and urban areas. It disaggregated these national poverty lines into state-specific poverty lines in order to reflect the inter-state price differentials measured by Fisher's index. These state-specific poverty lines of base year (1973-74) were updated for subsequent years by using Consumer Price Index for Agricultural Labourers (CPIAL) for rural areas and Consumer Price Index for Industrial workers (CPIIW) for urban areas. Two factors largely distinguish the Expert Group (Lakdawala) methodology of poverty estimation from those of the Task Force (Alagh). First, the Expert Group (Lakdawala) method uses state-specific poverty lines as against national poverty line for estimation of poverty in the state; it thereby captures the cost of living in the states more accurately (as compared to the Task Force method). Second, the Expert Group (Lakdawala) uses the state-wise consumption distribution of the NSS without any adjustment to the NAS

consumption. This is a major departure from the Task Force method, which did this adjustment on a *pro-rata* basis.

The Expert Group under the chairmanship of Suresh D. Tendulkar was constituted by the Planning Commission in December 2005. This group submitted its report in November 2009 (GOI, 2009). The Expert Group (Tendulkar) did not construct a poverty line. It adopted the officially measured urban poverty line of 2004-05 based on Expert Group (Lakdawala) methodology and converted this poverty line (which is URP-consumption based) into MRP-consumption.<sup>5</sup> The Expert Group (Tendulkar) method of estimation of poverty is described in the following three steps.

Step 1: Convert the URP-consumption based urban poverty line into MRP-consumption based poverty line. Here, the MRP-consumption based urban poverty line is worked out as the level of per capita consumption expenditure in the MRP consumption distribution that corresponds to the bottom 25.7 per cent of the population.

Step 2. State-specific urban poverty lines are derived from the (MRP-consumption based) national urban poverty line using urban state-relative-to-all-India fisher indices.<sup>6</sup>

Step 3: The state-specific rural poverty lines are worked out from the state-specific urban poverty lines by applying within-state rural-relative-to-urban Fisher indices.<sup>7</sup>

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<sup>5</sup>URP-consumption = consumption data are collected from the households using 30 day recall period for all the items. MRP-consumption = consumption data for five non-food items viz., clothing, footwear, durable goods, education, and institutional medical expenses are collected using 365-day recall period and 30-day recall period for the remaining items.

<sup>6</sup>This national level urban poverty line is disaggregated into state-specific poverty lines using "urban state-relative-to-all-India" price differentials. The prices differentials are constructed from a variety of price data most of which are implicit. For 15 commodity groups namely cereals, pulses, milk, oil, egg-fish-meat, vegetables, fresh-fruit, dry-fruit, sugar, salt-spices, other-food, intoxicants, fuel-light, clothing & bedding and footwear, the Fisher indices are computed using implicit prices obtained from the NSS consumer expenditure data of 61st Round (2004-05); for five item groups namely entertainment, personal care items, miscellaneous goods, miscellaneous services and durables, Labour Bureau price data underlying CPIAL and CPIIW is used. The pricing of educational services are constructed from the employment-unemployment survey of the NSS 61st Round (2004-05) and of health services are constructed from the health and morbidity survey of NSS 60th Round (January – June 2004).

<sup>7</sup>The state-specific rural poverty lines (of 2004-05) are worked out by adjusting the state-specific urban poverty lines (of 2004-05) with the "within-staterural-relative-to-urban" price differentials computed from the similar price statistics as in the case of disaggregating the national poverty line into state-specific poverty lines in urban areas.

Here, the state index numbers relative to the all-India numbers and the state-specific rural prices relative to the state-specific urban prices are computed from the implicit price indices derived from the quantity and value of different items of consumer expenditure gathered in the NSS consumption expenditure.

Urban poverty is same for both expert groups (Lakdawala and Tendulkar) at 25.7% in 2004-05. However, the all-India rural poverty ratio at 41.8 percent is one and a half times the estimate of Expert Group (Lakdawala) which was 28.3 percent in the same year as Expert Group (Tendulkar) uses urban basket for rural areas.

## **2. SUGGESTED METHODOLOGY BY EXPERT GROUP (RANGARAJAN)**

The high rate of increase in per capita income and consumption in the first decade of this century and the consequential changes in the structure of the economy as well as in people's perspectives on poverty was viewed as requiring a fresh look at the poverty line and its composition. Along-side, significant changes have occurred in the composition of private consumption expenditure: a reduction in the share of food, of foodgrains within food and of cereals within foodgrains.

It is against this background that the Expert Group (Rangarajan) has to define its methodology for drawing up the poverty line and the measurement of poverty<sup>8</sup>. In the past, the Planning Commission had constituted Expert Groups after a gap of about 12 to 15 years. However, Expert Group (Rangarajan) has been constituted less than three years after the submission of its recommendations of Expert Group (Tendulkar) and only one and a half years after the acceptance of its recommendations by the Planning Commission. The apparent urgency with which the Expert Group (Rangarajan) has been formed reflects a need to examine the estimation of poverty in India keeping in

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<sup>8</sup> The Expert Group (Rangarajan) has the following terms of reference

(a) "To comprehensively review the existing methodology of estimation of poverty and examine whether the poverty line should be fixed solely in terms of a consumption basket or whether other criteria are also relevant, and if so, whether the two can be effectively combined to evolve a basis for estimation of poverty in rural and urban areas.

(b) To examine the issue of divergence between consumption estimates based on the NSSO methodology and those emerging from the National Accounts aggregates; and to suggest a methodology for updating consumption poverty lines using the new consumer price indices launched by the CSO for rural and urban areas state-wise.

(c) To review alternative methods of estimation of poverty which may be in use in other countries, including their procedural aspects; and indicate whether on this basis, a particular method can be evolved for empirical estimation of poverty in India, including procedures for updating it over time and across states.

(d) To recommend how the estimates of poverty, as evolved above, should be linked to eligibility and entitlements for schemes and programmes under the Government of India".

mind the changed aspirations regarding the minimally acceptable standards of living in the country.

The first step in measurement of poverty involves determining the poverty line basket (PLB) of goods and services and the associated level of monthly per capita (total) private consumption expenditure as captured by the NSS Consumer Expenditure Surveys. The Expert Group opted for Modified Mixed Recall Period (MMRP) reference period while Expert Group (Tendulkar) considered Mixed Recall Period (MRP) reference period consumption expenditure for estimation of poverty<sup>9</sup>. Experts of Rangarajan group are of the view that the mix of reference periods for different items underlying the MMRP -estimates may be expected to yield estimates that are closer to their true value. Further, in all future NSS Consumer Expenditure Surveys only the MMRP estimates will be available. It automatically implies that deriving poverty estimates using MMRP distribution is not possible for all years prior to 2009-10.

In defining the new consumption basket separating the poor from the rest, the Expert Group (Rangarajan) is 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 behaviorally determined non-food expenditure.

As a first step towards defining the food component of the poverty line basket, the Expert Group (Rangarajan) has recomputed the average requirements of calories, proteins and fats, per- capita per-day at the all- India level for 2011-12, separately for the rural and the urban populations. This is based on ICMR norms differentiated by age, gender and activity for all-India rural and urban regions to derive the normative levels of nourishment. Accordingly, the energy requirement works out to 2,155 kcal per person per day in rural areas and 2,090 kcal per person per day in urban areas. Based on some studies, it is, however, more appropriate to treat the normal calorie requirements to be within a range of +/- 10 per cent of these values and the lower level of such a range to be adequate

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<sup>9</sup> In the Modified Mixed Recall Period (MMRP), the consumer expenditure data is gathered from the households using the recall period of: (a) 365-days for clothing, footwear, education, institutional medical care, and durable goods, (b) 7-days for edible oil, egg, fish and meat, vegetables, fruits, spices, beverages, refreshments, processed food, pan, tobacco and intoxicants, and (c) 30-days for the remaining food items, fuel and light, miscellaneous goods and services including non-institutional medical; rents and taxes.



enough to not adversely affect health<sup>10</sup>. The protein and fat requirements have been estimated on the same lines as for energy. These requirements are 48 gms and 28 gms per capita per day, respectively, in rural areas; and 50 gms and 26 gms per capita per day in urban areas.

A food basket that simultaneously meets all the norms for the three nutrients, with the calorie-norm being satisfied at least at the lower level of the range defines the food component of the poverty line basket proposed by the Expert Group (Rangarajan). The latest information on class distribution of nutrient-intake, based on estimates of food consumption on MMRP, is available for the year 2011-12 (NSS 68<sup>th</sup> Round). It is seen that the nutrient-intake norms, including the calorie –norms at the lower end of the range, are met for the persons located in the sixth fractile (25-30%) in rural areas and for those in the fourth fractile (15-20%) in urban areas. The average monthly per capita consumption expenditure on food in these fractile classes is Rs554 in rural areas and Rs656 in urban areas.

The non-food component of the PLB has both a normative component and, a component given by the observed consumption pattern of households in the fractile-group in which the food –component of the PLB is located. The normative component relates to the private consumption expenditure aimed at capabilities in respect of education, clothing, shelter (rent) and mobility (conveyance). Since it is difficult to set minimum norms for these essential non-food items, the Expert Group (Rangarajan) recommends that observed expenditures on these items by households located in the median fractile (45-50 percentile) be treated as the normative minimum private consumption expenditure on these items. For all other non-food goods and services, the observed expenditure of that fractile- class which meets the nutrient-norms (the 25<sup>th</sup> -30<sup>th</sup> percentile in rural India , and, the 15<sup>th</sup>-20<sup>th</sup> percentile in urban India) is taken to define the PLB in respect of these items.

The monthly per capita consumption expenditure which constitutes new poverty line basket, separately in rural and urban areas, is given below in **Table 1**.

**Table 1: Consumption expenditure of PLB in Rural Areas and Urban Areas-2011-12**  
(MPCE in Rs.)

Items	Rural		Urban	
	Sixth fractile (25-30%)	Median class (45-50%)	fourth fractile (15-20%)	Median class (45-50%)

<sup>10</sup> see Sukhatme (1981) Meenakshi and Viswanathan (2013)

Food	<b><u>554</u></b>	678	<b><u>656</u></b>	977
Four essential non-food items	102	<b><u>141</u></b>	181	<b><u>407</u></b>
Other non-food items	<b><u>277</u></b>	347	<b><u>344</u></b>	571
Total MPCE	933	1166	1181	1955
MPCE-Poverty Line	<b><u>972</u></b>		<b><u>1407</u></b>	

Source: Derived from NSS Consumer Expenditure Survey 2011-12, 68<sup>th</sup> Round

The Monthly Per-capita Consumption Expenditure (MPCE) of Rs 972 (554+141+277) in rural areas and Rs 1407 (656+407+344) in urban areas constitute the new poverty lines at the all- India level as per the recommendation of the Expert Group (Rangarajan). They translate to a monthly per household expenditure of Rs 4860 / in Rural India and of Rs 7035/ for urban India—assuming a family of 5-members in each case.

Estimations of poverty line made for the Expert Group (Rangarajan) based on independent large survey of households by CMIE and using a different methodology wherein a household is considered poor if it is unable to save, yield results that are remarkably close to those derived using the NSSO data. This provides additional evidence to the poverty line derived by the Expert Group. However, the alternative approach can be established only when NSSO initiates surveys on income and expenditure as recommended by the Committee to Review the Methodology for the Estimation of Savings and Investment.

We can look at the proposed poverty line level in terms of PPP dollars per capita per day. As per the most recent (World Bank, 2014) PPP –values, the poverty line translates to \$ 2.14per capita per day for Rural India,\$ 3.10 per capita per day for Urban India and \$ 2.44 per capita per day for the country as a whole. (In PPP conversion US \$1= Rs. 15.11).

Compared to the poverty lines based on the methodology of the Expert Group (Tendulkar), the poverty lines estimated by the Expert Group (Rangarajan) are 19% and 41% higher in rural and urban areas, respectively. The Expert Group (Rangarajan) uses the Modified Mixed Recall Period consumption expenditure data of the NSSO as these are considered to be more precise compared to the MRP, which was used by the Expert Group (Tendulkar) and the URP, which was used by earlier estimations. 67% of the increase in the rural poverty line and 28% of the increase in the urban poverty line is because of the shift from MRP to MMRP.

The national level poverty lines are disaggregated into state-specific poverty lines in order to reflect the inter-state price differential. The method of constructing the state-wise poverty lines from the national level poverty line in 2011-12 is broadly similar to that outlined by the Expert Group (Tendulkar). Implicit prices are calculated from the quantity and value of consumption gathered in NSS consumer expenditure data of the 68<sup>th</sup> Round (2011-12). From these, state relative to all-India Fisher price index has been computed, separately in rural and urban areas. Using the Fisher index, the inter-state price differential is calculated separately in rural and urban areas and from these the national poverty lines (separately in rural and urban areas) in 2011-12 are disaggregated into state-specific poverty lines.

Using these and the state-specific distribution of persons by expenditure groups (NSS), state-specific ratios of rural and urban poverty were estimated. State-level poverty ratio was estimated as weighted average of the rural and urban poverty ratios and the national poverty ratio was computed again as the population-weighted average of state-wise poverty ratios.

The Expert Group (Rangarajan) estimates that the 30.9% of the rural population and 26.4% of the urban population was below the poverty line in 2011-12. The all-India ratio was 29.5%. In rural India, 260.5 million individuals were below poverty and in urban India 102.5 million were under poverty. Totally, 363 million were below poverty in 2011-12. The state-specific poverty ratio and number of poor estimated for the year 2011-12 is given in the expert group (Rangarajan) report (GOI, 2014)

Expert group (Rangarajan) also estimated poverty ratios for the year 2009-10. The price inflation during the period 2009-10 to 2011-12, at the state level (separately in rural and urban areas), has been calculated from the increase in the cost of the consumption basket of the poor, that is the poverty line as estimated by the Planning Commission for these two years using the Expert Group (Tendulkar) methodology.

The estimate of poverty ratio for the years 2009-10 and 2011-12 derived from the Expert Group (Rangarajan) methodology and Tendulkar methodology are summarised in Table 2.

Table 2: Poverty Estimates in 2009-10 and 2011-12

Year	Poverty Ratio			No. of poor (million)		
	Rural	Urban	Total	Rural	Urban	Total
Expert Group (Rangarajan)						
1. 2009-10	39.6	35.1	38.2	325.9	128.7	454.6
2. 2011-12	30.9	26.4	29.5	260.5	102.5	363.0
3. Reduction (%age points)	8.7	8.7	8.7	65.4	26.2	91.6
Expert Group (Tendulkar)						
1. 2009-10	33.8	20.9	29.8	278.2	76.5	354.7
2. 2011-12	25.7	13.7	21.9	216.7	53.1	269.8
3. Reduction (%age points)	8.1	7.2	7.9	61.5	23.4	84.9

Source: GOI (2014)

A comparison of the poverty ratio for the two years 2009-10 and 2011-12 derived from the Expert Group (Rangarajan) method and the Expert Group (Tendulkar) method shows that the average level of poverty ratio derived from the Expert Group (Rangarajan) method is higher than that derived from the Expert Group (Tendulkar) method. The all-India poverty ratio derived from the Expert Group (Rangarajan) method is 8.4 percentage points higher in 2009-10 and 7.6 percentage points higher in 2011-12 than that derived by the Planning Commission using the Expert Group (Tendulkar) method. The all-India poverty ratio in Expert Group (Rangarajan) fell from 38.2% to 29.5%. Totally, 91.6 million individuals were lifted out of poverty during this period. Though Rangarajan Committee methodology gives higher level of absolute poverty ratio, the reduction in poverty ratio from Rangarajan method is not very different than that of Tendulkar method.

The Expert Group (Rangarajan) recommends the updation of the poverty line in the future using the Fisher Index. The weighting diagram for this effort can be drawn from the NSSO's Consumer Expenditure Survey. For the food group, it recommends that the current practice of relying on the unit values derivable from the NSSO consumer expenditure surveys should continue till such time a new consumer price index (CPI) of CSO with a weighting diagram based on the 2011-12 pattern of consumption becomes available. In respect of non-food items, the price indices available in the existing CSO Consumer Price Indices can be used in the construction of requisite Fisher indices. Once the new series of Consumer Price Index numbers (with 2011-12 as the base year) becomes available, it may be used for updating the future poverty line.

### 3. CLARIFICATIONS ON THE ISSUES RAISED BY OTHERS

Since the submission of the report of Expert Group (Rangarajan), there have been few comments on the report published particularly in this journal (Ray and Sinha, 2014, Mishra (2014), Subramanian (2014)) and Hindu Newspaper (Deaton and Dreze, 2014).

Of course they also indicated the positive aspects of the report. We provide clarifications below on various issues raised by them.

*What is new in the approach for poverty line?*

It may be noted that poverty line computed by 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) behaviorally 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 updating the old basket for price changes.

Mishra (2014) says that the expert groups takes commodity basket from two fractile groups and it 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 that "Useful starting points for a new approach lie in anchoring poverty lines in social norms and in the distinction made by PPD<sup>11</sup> 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 of this paper 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).

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<sup>11</sup> PPD refers to Perspective Planning Division of the Planning Commission

The suggestion of Srinivasan that we should start from a 'socially defined poverty bundle of goods', is a good idea. But, the problem is 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, Subrahmanian (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 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) "says 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" (p.2, GOI, 2009)

#### *Use of Calories*

Deaton and Drèze (2014) criticize the group for going back to calorie norms. Ray and Sinha (2014) appreciate the use of calories but they do not agree with sharp reduction in rural daily calorie requirements. They also mention Amrtya 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 shows, the average calorie norms could be significantly lower if we replace the 95<sup>th</sup> Percentile heights and a 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. Secondly, we have the idea (Sukhatme, 1982) of a margin of homeostatic adaptation within which individuals can adapt, without 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 range, of, say,  $\pm 10$  percent, where intakes at the lower level need not compromise their 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 food component. It is true that there is no direct correlation between calorie and

nutrition. Some use calorie norm directly as cut off for measuring poverty. This method may give implausible results (see 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, immunization and vaccination etc.) on a universal basis, the access to the food component of the PLB 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. Tendulkar Group itself did not abandon calorie norms. They took the urban poverty Basket as given. They also claimed that ultimately the poverty line they recommended satisfied FAO norms.

Ray and Sinha (2014) rightly points out the importance of micronutrients for nutrition. We recognize the need for micronutrients but data on this are not readily available to include it in the food component of poverty line. They also mention that variations in dietary habits vary across regions and poverty line should be based on state variations in consumption. This is not a new thing and these issues were discussed in Lakdawala expert group report. In fact, there was a note of dissent by S.Guham 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.

#### *Multi-dimensional Poverty*

Ray and Sinha (2014) are critical of the report saying that the group did not widen the concept of poverty in terms of multidimensional poverty as mentioned in the terms of reference. They use NSS and NFHS data to highlight multidimensionality. Subrahmanian (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 the reasons in the report 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 (OPH) and UNDP together developed multidimensional poverty index (MPI). It used ten 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 data bases that provide the requisite information at reasonably short intervals. These need to be considered and evaluated carefully. For example, 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 data base 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 ten 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, and, 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 data base for poverty line defined in terms of consumption basket-as they relate to different sets of household, also rules out combining it with indicators based on “other Criteria” as proposed in the TOR.

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 multi dimensional 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 multi dimensional indices. He says that “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 United Nations Development Programme is an example of an arbitrarily weighted sum of non-commensurate indexes. It certainly is not a multidimensional conceptualisation in any meaningful sense but simply yet another arbitrary unidimensional index” (p.4162, Srinivasan, 2007).

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 in many states*

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

It is true that based on Rangarajan expert group methodology, 13 out of 28 states showed higher urban poverty than rural poverty. These states are: Andhra Pradesh., Bihar, Goa, Haryana, Jammu&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.

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

In Rangarajan group, 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 to that of rural areas. It is known that particularly house rents and conveyance charges are much higher in urban areas than rural areas. As a result of this higher share of basic non-foods, the share total non-foods in total poverty line in urban areas is 53% as compared to 43% in rural areas.

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

It is also possible that inspite of MGNREGA and other schemes, significant number of rural poor may be migrating to urban areas in search of employment. In other words, poverty is being exported from rural areas 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 NAS-NSS differences but lost 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 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 given in the report

reduced the differences from 45.8% to 32.5%. But still the differences are high. Apart from problems in NAS, the fatigue of the respondents in NSS might not be able to capture some of the non-food items. This can be rectified in future National Sample Surveys. However, still it is 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 consumption basket poverty line. Developed countries generally use the concept of relative poverty. In some countries poverty line is 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 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 far apart for it is able to measure the incidence of poverty by capturing the demographic pattern and consumer behavior 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*

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 CAGR of close to 10 percent per annum. Given that these services are, typically, provided at heavily subsidized 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 PDS, we do have

information on the MPCE 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. Ray and Sinha (2014) also argue for multidimensional measures for identification of the poor. Poverty ratio of Planning Commission can play an important role in deciding allocation of resources among States although now it is delinked as mentioned above. The Ministries and Departments in association with the State Governments may draw the guidelines for defining the beneficiaries for their programmes. The process could be similar in rural and urban areas.

#### 4. CONCLUSION

To conclude, one has to review from time to time the methodologies for arriving poverty estimates in keeping with the changing needs of the population. Poverty lines are only approximations to the socially accepted minimum standards. Thus, in any poverty line approach, an inevitable element of arbitrariness is inescapable. It is by nature subjective and judgmental. There is a hilarious description of how the poverty line evolved in the U.S. in the latest book by Deaton (2013) entitled "The Great Escape". Nevertheless an attempt has been made in the report of Expert Group (Rangarajan) to approach the subject on methodology of measurement of poverty as systematically as possible.

The methodology adopted by the new group on poverty is based on sound principles. However, as the group has clearly indicated, this measure is not considered as an appropriate basis for determining entitlements under various programmes. Each programme focusing on a particular deprivation may have to choose that criterion which is most appropriate for it. But 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 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 poverty ratio in India is coming down even though it may remain at a high level. Policy makers must continue to follow the two-fold strategy of letting the economy grow fast and attacking poverty directly through poverty alleviation programmes.

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