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The Department of Census and Statistics Announces the

Official Poverty Line
for
Sri Lanka

For the year 2002 the official poverty line is *Rs. 1423*
(Real total food and non-food consumption expenditure per person per month).

Introduction

A number of poverty lines had existed in the past in studies conducted by different organizations, including the Department of Census and Statistics (DCS). To resolve the question of which poverty line should be adopted as the Official Poverty Line for Sri Lanka, a consultative approach was adopted, involving stakeholders within the country as well as donor organizations.

A workshop was convened in March 2004 to understand the methodological issues surrounding poverty estimation, where an international expert presented best practices from other countries. Based on recommendations that emerged from the workshop, a detailed analysis was undertaken by the poverty study group of the DCS with two international consultants. This involved detailed analysis of Household Income and Expenditure Survey (HIES) data conducted in 2002, 1995/96 and 1990/91, based on which an acceptable methodology was determined to construct consistent poverty trends across time and space. This note briefly outlines the methodology and the results thus obtained.

Rationale for the chosen approach

There are two broad classes of methodologies for estimating a poverty line: a "relative" poverty line and an "absolute" poverty line. The "relative" poverty line is defined in terms of some percentage cut-off point in a welfare distribution, such as the bottom three deciles[1] of per capita total consumption expenditure[2] distribution. The "absolute" poverty line is explicitly fixed at a specific welfare level. In comparison to the "absolute" poverty line, the "relative" poverty line is appealing in that it is both simple and transparent; however, it provides little on poverty profiles over time and across districts because there is always a bottom 30 percent of the population irrespective of changes in living standards.

The DCS chooses the "absolute" poverty line approach, as is the practice adopted in most developing countries, so that changes in poverty over time or across regions can be easily checked with reference to this same fixed poverty line.

[1] Lowest decile has the lowest ten percent of the persons, when the households are arranged in the ascending order of their per capita total consumption expenditure.
[2] Total consumption expenditure in this bulletin, refers to the total consumption expenditure on both food and non-food items.

A nutrition-based anchor for the poverty line and updating the poverty line

The official poverty line in Sri Lanka is fixed at a welfare level of a person who meets a certain minimal nutritional intake (2030 kilocalories) in 2002. More precisely, the official poverty line of 2002 is defined at the per-capita expenditure for a person to be able to meet the nutritional anchor of 2030 kilocalories in 2002. For other survey years, the poverty lines are obtained by updating the official poverty line of 2002 with Colombo Consumer Price Index (CCPI) for inflation.

There are two points to note before describing how the nutritional anchor is determined. First, the official poverty line is fixed at a level of real total consumption expenditure rather than the nutritional anchor[3]. This is because the welfare (or utility) of an individual depends not only on his or her nutritional intake but also on consumption of items other than food, such as clothing, shelter, education and health services. A poverty line fixed in terms of real total consumption will capture the same welfare level obtained from such goods across the survey years - even though we recognize that such a line may not necessarily represent the nutritional anchor in every survey year.

Second, the welfare (or utility) level of a person is measured by the person's per-capita expenditure adjusted for inflation to accommodate for changes in cost of purchasing the same bundle of goods over time. As long as preferences and tastes of consumers do not change over time, their real consumption expenditures approximate their welfare level even if consumption patterns change in response to changes in relative prices among items. However, to accommodate changes in people's preferences and tastes, it is recommended that the poverty line be re-estimated every 10 years.

Once the poverty line is determined for the year 2002, the poverty line for the other survey years 1995/96 and 1990/91 are obtained by updating the official poverty line of 2002 with Colombo Consumer Price Index (CCPI)[4].

Construction of the official poverty line

Choice of a nutrition-based anchor:

As before, the nutritional anchor for the official poverty line is expressed in terms of calories intakes. There are many other important nutritional inputs, such as proteins, micronutrients etc., but it is natural to assume that the minimum requirements of these nutrients will be met if calorie requirements are met.

Nutritional requirements vary from person to person depending on the age, gender and also activity level of the person. These also vary from country to country depending on factors such as race, climatic condition etc. The Medical Research Institute of Sri Lanka (1989) has provided a study that lists the daily allowances of calories for Sri Lankans by age and gender, shown in Table 1, which forms the basis for the official poverty line.

Based on Table 1 and country's population by age and sex, elicited from HIES 2002, the per-capita calorie requirement is calculated as follows. First, the national aggregate of daily

[3] To compute real expenditures, nominal expenditures are adjusted for price differences across districts through an appropriate price index. For details on how such spatial index was constructed, see Box 1.

[4] CCPI is based on a price survey covering only the City of Colombo. However the DCS is currently developing a new official price index covering all the district of the country – SLCPI and this index may be used to update the official poverty line for the future years.

calorie allowances is calculated by summing up the nutritional allowances across all individuals in different age and sex groups. Average calorie allowance is then calculated by dividing the national aggregate of daily calorie allowances with the total population. The average per capita calorie allowance thus obtained is the nutritional anchor for the poverty line – 2030 kcal per capita per day in 2002. The next step is to define the poverty line corresponding to the nutritional anchor – 2030 kcal per capita per day. This is done using the Cost of Basic Needs (CBN) approach.

Table 1: Daily recommended nutrient allowances for Sri Lanka

Age group	Kilo calorie	
	Male	Female
< 1 Year	818	818
1 - 3 Years	1212	1212
4 - 6 Years	1656	1656
7 - 9 Years	1841	1841
10 - 12 Years	2414	2238
13 - 15 Years	2337	2300
16 - 19 Years	2500	2200
20 - 39 Years	2530	1900
40 - 49 Years	2404	1805
50 - 59 Years	2277	1710
60 - 69 Years	2024	1520
70 Years +	1771	1330

Source: The Medical Research Institute of Sri Lanka (1989) (simplified version)

Note: The number of groups is reduced from the original table.

Choice of the "Cost of Basic Needs" method:

The objective of a poverty line is to capture the basic needs necessary to meet minimum living standards. The cost-of-basic-needs (CBN) method addresses this objective through defining a consumption bundle – incorporating food and non-food items – that is adequate to meet the nutritional requirements, and estimates the cost of purchasing that consumption bundle[5]. The important question related to this method is that of how to estimate the non-food component of the poverty line, in a way such that it captures the basic non-food requirements. A standard approach, recommended by a number of researchers, has been to estimate the non-food component from the expenditure composition of households whose food expenditures are close to what is required to achieve the nutritional anchor.

The standard approach for poverty line estimation using the CBN method is to first find a food consumption bundle of the population likely to be poor (called henceforth the "reference group"), and then estimate the cost of consuming this bundle using the prices faced by the reference group. The food expenditure thus derived constitutes what is referred to as the food poverty line. This method is described in detail below.

How the food poverty line is derived

In Sri Lanka, the method outlined above is implemented to derive the food poverty line in the following way: (i) the households in the 2nd to 4th deciles ranked by real per-capita total consumption expenditure are chosen as the reference group; (ii) all food items for which information on expenditure, quantity and estimated calorie value are available are selected; (iii) the aggregates of food expenditures and calorie intakes in the reference group are calculated; (iv) the cost per calorie is derived by dividing the former with the latter; (v) **the food poverty line is defined at Rs. 973**

[5] The CBN approach has been recently gaining in popularity. Recent examples of countries that have adopted this include Nepal, Bangladesh and Indonesia.

per capita per month by multiplying the per calorie cost with the nutritional anchor per month (2030*30 kcal)[6].

The food poverty line obtained above has to be translated into a poverty line that also incorporates the expenditure required to attain basic non-food needs. How this is done is described below.

How to derive the non-food component of the poverty line

Deriving the non-food component of the poverty line is less straightforward than deriving the food poverty line, since it is not clear what level of non-food expenditures should be defined as basic needs. Important literature in this area proposes a range of seemingly appropriate non-food poverty lines by linking non-food expenditures to food expenditures.

The lower bound of the non-food poverty line is defined as the ***average per capita non-food expenditure of households whose per capita total expenditure is close to the food poverty line***. The logic behind this definition is as follows. Such households' non-food expenditure should be considered as absolutely necessary for sustaining the minimum living standards, simply because any amount of spending on non-food items for such households necessarily reduces their food expenditure below what is required to attain the minimum calorie requirement. The upper bound is defined as the ***average per-capita non-food expenditure of households whose per-capita food expenditure is close to the food poverty line***. The rationale for such an "upper bound" is as follows. The average non-food expenditures among households whose food expenditure is around the food poverty line is applicable to households that no longer need to sacrifice food expenditures necessary to meet the minimum calorie requirement in order to consume non-food items. As long as the non-food poverty line is chosen from the range between the above lower and upper bounds, such an approach is justifiable. The national poverty line is then calculated by adding up the food poverty line and the non-food poverty line.

The National Poverty Line

We avoid the two extremes for the non-food line – the upper and lower bounds – and instead select the average. Taking the average of the upper and lower bounds is a simple and straightforward selection, and acceptable as a practical solution. To estimate the upper and lower bounds, we use a simple non-parametric approach. For estimating the upper bound, the reference group is selected as households whose real per capita food expenditures are within an interval of plus or minus 10 percent around the food poverty line[7]. The median per-capita non-food expenditure of this reference group is taken as the upper bound.

Estimating the lower bound differs only in terms of the definition of the reference group. This group now consists of households whose real per-capita total expenditures are in the interval of plus or minus 10 percent around the food poverty line.

Table 2 summarizes all poverty lines, where the upper (lower) poverty line denotes a sum of the food poverty line with the upper (lower) bound

[6] Per capita consumption expenditures are used for the poverty line estimation as well as poverty estimates due to its simplicity and transparency. Analysis on equivalence scale and economy of scale indicates that there is no marked difference between the two scales viz (1) per capita and (2) per adult equivalent, in terms of Head Count Index.

[7] Households with food share less than 0.18 (1 percentile of the food share distribution) are omitted as outliers. These treatments have been done in order to avoid undetected outliers of non-food expenditures, which were seen to be not negligible in the data set.

of non-food poverty line. The national official poverty line for Sri Lanka is an arithmetic mean of the lower and upper bounds.

Interpretation of the Official Poverty Line

The persons living in the households whose ***real per capita monthly total consumption expenditure is below Rs.1423 in the year 2002 in Sri Lanka are considered poor***.

In applying this poverty line, one has to ensure that the line represents the same standard of living across time and accounts for variations in cost of living in different areas.

Table 2: Summary of poverty lines at 2002 national prices

Poverty line	Rs./month
1. Food poverty line	973
2. Lower poverty line	1267
3. Upper poverty line	1579
4. Official poverty line (average of 2. and 3.)	1423

Source: HIES 2002.

How to adjust for price differences over time and across districts

The national poverty line is defined at the 2002 national prices. The line needs to be deflated with the CCPI to obtain the official poverty at the current prices for other survey years. Using the CCPI, the national poverty lines for 90-91 and 1995-96 are Rs. 475 and Rs. 833 respectively (at current prices). Also using SLCPI, the **official poverty line for May 2004 is Rs 1526** at current prices.

Price differences exist not only over time, but also across districts, which are accommodated by adjusting the national poverty line with spatial price indices computed for each district (see Box 1 for details).

Box 1: Constructing spatial price indices

The challenge in constructing spatial price indices is to find the appropriate reference group of households, which will minimize the chance of obtaining biased poverty estimates. The spatial price index is computed here as a Laspeyeres' index using implicit prices of food items from the household survey – for a reference group that consists of households belonging to the 2nd to 4th decile of nominal per capita consumption. Even though the price index is based only on prices faced by the reference group, it is used to adjust consumptions of the entire population. This is however unlikely to affect poverty estimates, since the groups whose consumptions are most likely to be distorted by this choice, namely the rich or the very poor, will remain poor or rich irrespective of small perturbations in the price index. More importantly, the selected reference group is the most appropriate group for computing the price index, since even small errors in the price index could change their position vis-à-vis the poverty line, leading to biased estimates. The spatial price index is constructed at the district level.

As Table 3 shows, the poverty line for Colombo, after adjusting for price differences across districts, is higher than the national poverty line. It is also higher than poverty lines for all other districts for every survey year, reflecting higher prices in Colombo district. On the other hand, Hambantota and Anuradhapura

record significantly lower poverty lines than the national poverty line. This implies that the same level of nominal consumption expenditures imply much better living standards in Hambantota and Anuradhapura than in Colombo, since the residents in the former districts can afford to purchase more goods than those in the latter.

Table 3: Nominal poverty lines by district.

District	PL 1990-91	PL 1995-96	PL 2002
National	**475**	**833**	**1423**
Colombo	518	908	1537
Gampaha	489	875	1508
Kalutara	494	866	1523
Kandy	485	850	1451
Matale	466	816	1395
Nuwara Eliya	494	841	1437
Galle	489	833	1466
Matara	470	816	1395
Hambantota	470	791	1338
Kurunegala	456	791	1352
Puttalam	461	841	1423
Anuradhapura	456	816	1380
Polonnaruwa	475	783	1366
Badulla	485	850	1409
Monaragala	480	791	1366
Rathnapura	494	833	1451
Kegalle	466	858	1437

Source: HIES 1990/91, 1995/96, and 2002 and CCPI

Poverty estimates using official poverty line

Using the poverty line obtained above, poverty headcount ratio is computed for 1990-91, 1995-96 and 2002. Headcount ratio is defined as the percentage of the population whose monthly per capita total consumption expenditure falls below the district level poverty line. Table 4 provides these estimates for the 17 districts included in the survey. Table 5 provides estimates nationally and for different sectors, namely urban, rural and estates[8].

Table 4: Poverty headcount ratio by district (%).

District	1990-91 (%)	1995-96 (%)	2002 (%)
National	**26.1**	**28.8**	**22.7**
Colombo	16	12	6
Gampaha	15	14	11
Kalutara	32	29	20
Kandy	36	37	25
Matale	29	42	30
Nuwara Eliya	20	32	23
Galle	30	32	26
Matara	29	35	27
Hambantota	32	31	32
Kurunegala	27	26	25
Puttalam	22	31	31
Anuradhapura	24	27	20
Polonnaruwa	24	20	24
Badulla	31	41	37
Monaragala	34	56	37
Rathnapura	31	46	34
Kegalle	31	36	32

Source: HIES 1990-91, 1995-96, and 2002

[8] There are two ways of making consumption expenditures comparable to poverty lines: 1) evaluating both poverty lines and consumption expenditures at *area-specific* prices, 2) evaluating both poverty lines and consumption expenditures at *national* prices. For the district level poverty headcounts in Table 4, the first method is used: poverty headcount ratios are calculated by comparing *nominal* consumption expenditures with *district* poverty lines reported in Table 3. For the sector level poverty headcounts in Table 5, the second method is used: poverty headcount ratios are calculated by comparing *real* consumption expenditures with the *national* poverty line. This is done because the national poverty line cannot be adjusted for sectoral price differences, as the spatial price index is computed at district level.

Table 5: Poverty headcount ratio National and by sector (%).

Sector	Survey period		
	1990-91 (%)	1995-96 (%)	2002 (%)
National	**26.1**	**28.8**	**22.7**
Urban	16.3	14.0	7.9
Rural	29.4	30.9	24.7
Estate	20.5	38.4	30.0

Source: HIES 1990-91, 1995-96 and 2002.

Finally, Table 6 and 7 shows the proportion of households that are poor – nationally, and for different sectors, provinces and districts.

Table 6: Percentage of poor households based on the Official Poverty Line by sector and province.

Sector & Province	Survey period		
	2002 (%)	1995/96 (%)	1990/91 (%)
Sri Lanka	**19.2**	**24.3**	**21.8**
Sector			
Urban	6.2	11.0	12.9
Rural	20.8	25.9	24.7
Estate	24.3	32.2	16.7
Province			
Western	9.2	13.0	15.6
Central	20.8	31.3	25.8
Southern	23.6	27.0	24.7
North Western	22.3	23.6	21.6
North Central	18.1	20.4	20.4
Uva	31.8	40.2	27.0
Sabaragamuwa	28.9	36.1	26.8

Table 7: Percentage of poor households based on the Official Poverty Line by district.

District	Survey period		
	2002 (%)	1995/96 (%)	1990/91 (%)
Sri Lanka	**19.2**	**24.3**	**21.8**
District			
Colombo	5.0	8.8	13.1
Gampaha	9.2	11.3	11.7
Kalutara	17.7	24.6	27.0
Kandy	20.9	32.7	30.9
Matale	24.5	36.8	24.3
Nuwara Eliya	18.2	25.9	15.6
Galle	21.7	25.5	25.0
Matara	23.2	29.5	23.3
Hambantota	27.8	26.2	26.3
Kurunegala	21.2	22.6	22.8
Puttalam	24.5	25.8	18.6
Anuradhapura	17.2	21.9	20.1
Polonnaruwa	20.1	17.1	21.2
Badulla	31.5	35.8	26.8
Monaragala	32.4	48.4	27.4
Rathnapura	30.1	40.0	26.4
Kegalle	27.5	31.7	27.3

Previous definition of poverty

Until the **current official poverty line (i.e. *"real per capita monthly total consumption expenditure of Rs.1423 in the year 2002")*** is established, the DCS had been using a poverty line based on a Food Energy Intake method (FEI). **The DCS will not use this FEI methodology in its future poverty analyses**.

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