



Royal Government of Cambodia

Ministry of Planning



**POVERTY IN CAMBODIA – A NEW  
APPROACH**

**Redefining the poverty line**

Phnom Penh  
April 2013

## Preface

The Royal Government of Cambodia set up an Inter-ministerial Working Group, which also co-opted professionals from the civil society and academia, to define a new poverty line for the country in late 2011. It is the first time that the government staff has taken up such a task and completed it successfully. The technical capacity that the government staff-members have acquired through external assistance in the last several years, and also the effort that they have made on their own, have helped in completing this exercise almost entirely within the government.

1. The process has been fully consultative, in the sense that all the analysis has been discussed threadbare among the members of the Working Group. There were four formal meetings and other discussions held over three months entailing deliberations of almost 40 hours.
2. Effort has been made to develop an approach that is simple, since the purpose is to keep the concepts, definitions and computations robust and easy to understand.
3. All computations have been done in the Ministry of Planning, under the direction of the General Department of Planning and the National Institute of Statistics.

The Working Group will be a Standing Committee, to review this and such issues in the times to come.

Special thanks are to, H.E. Toun Thavrak and H.E. San Sy Than for providing leadership, and all members of the committee for their active participation. The Ministry of Planning also expresses its gratitude to the UNDP, UNFPA and UNICEF for providing the necessary technical and financial resources to support this exercise. Thanks are also due to the World Bank for having initiated poverty measurement exercises in the 1990s and carried on until 2008, which became the foundation for professionals here acquiring capacities to initiate this exercise. I also express our gratitude to Statistics Sweden for assisting the government in conducting large-scale socioeconomic surveys since over a decade, and which are the sole database on which the method and estimates of poverty are based.

CHHAY Than  
Senior Minister,  
Minister of Planning  
Phnom Penh, April, 2013

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## ABSTRACT

This report presents the results of the new approach to measuring poverty and standards of living, which the Royal Government of Cambodia initiated and carried out through 2011-2012.

### Technical details

- 1) The minimum standard of food consumption is fixed at 2,200 K-Calories.
- 2) The composition of the food from which 2,200 K-Calories are derived is that which the bottom 5<sup>th</sup>-30<sup>th</sup> percentile groups of the population (ranked by total consumption: food + non-food) consume (in Riels). This is to ensure that the food habits of those households and people living at modest levels, alone are accounted for.
- 3) The non-food component in the poverty line comprises of select 14 items consumed by the bottom 20<sup>th</sup>-30<sup>th</sup> percentile groups in the population (in monetary values). These are separately calculated for each of the regions: Phnom Penh, other urban areas, and rural areas.
- 4) There is a small token amount added to account for clean water.
- 5) In calculating total expenditure, items on which people do not actually expend, in cash or kind during the reference period, are not included. This is as per the 'livelihoods approach', which suits a country where >70% of the population is rural and a majority lives in an agrarian environment.

### Results

There were 22.89% people subsisting below the poverty line in 2009, as per computations based on Cambodia Socioeconomic Survey of 2009. Phnom Penh had 12.8% persons below the poverty line; other urban areas had 19.3%; and rural areas 24.6%. The Poverty Gap Index was low at 5% for the country as a whole (scale is 0 to 100; with 100 implying extreme poverty). There is a high concentration of people whose earnings (actually, consumption) are near the poverty line.

This approach to measure poverty differs from the approach developed in 1997 (with World Bank assistance, based on the CSES of 1993-1994) in at least five ways:

1. The food poverty threshold is pegged at 2,200 K-Calories, against 2,100 K-Calories earlier
2. The non-food component in the poverty line is not statistically estimated, but substantively determined
3. Separate estimates have been made for non-food in the three geographical regions – Phnom Penh, Other Urban Areas, and Rural Areas
4. There are no imputed expenditures: Only the actually incurred expenses (in cash or kind) are counted while calculating total consumption expenditure
5. There is a token allowance for clean water.

For reasons (2), (3) and (4), the non-food component of expenditure in the poverty line in urban areas, especially in Phnom Penh, is high. Consequently, the poverty rate as well is higher there. However, it is believed to be more realistic because estimates of the poor, made from another survey (the ID-Poor) are closer to this.

# POVERTY IN CAMBODIA – A NEW APPROACH

## 1. INTRODUCTION

The ultimate purpose of development is raising people's standards of living. There is more than just altruistic motive to it, as excessive and sustained poverty and inequality can threaten both economic and political stability in any society. The world has witnessed this time and again.

A pre-requisite to launching poverty alleviation policies is getting a realistic measure and estimate of poverty. The earlier poverty line drawn in 1997, based on data from the Cambodia Socioeconomic Survey (CSES) of 1993-1994, served the purpose until about the first decade of the present century. With changing realities over time, however, there is need to define a new poverty line. Most developing countries review their poverty lines every decade or two: E.g. both Vietnam and India have recently redefined their poverty lines. As the Royal Government of Cambodia is about to embark on the formulation of the new National Strategic Economic Development Plan, it is timely to redefine the poverty line.

The government set up a National Working Group in November 2011 to examine options in redefining the poverty line. The Working Group comprised of members from different institutions: The Supreme National Economic Council (SNEC), government ministries, academia, civil society, and development specialists hailing from different disciplines. The Ministry of Planning (MOP) was the lead agency. The whole process was nationally driven, thereby ensuring greater ownership by the people and government and also improving national capacities. The MOP staff carried out the statistical work under the oversight of the Working Group.

## 2. STATUS UNTIL 2008

**2.1 Brief background:** As stated above, the first poverty line in the recent era was drawn with assistance from the World Bank in 1997, based on data from CSES 1993-1994. According to it, if a person was unable to get nutrition equivalent to 2,100 Kilocalories (K-Calories) and a stipulated quantity of non-food items, s/he was considered *poor*. The figure of 2,100 K-calories was averaged over persons of all ages, locations, and sexes. The government accepted the poverty estimates based on this poverty line up to 2007. It decided to revisit the issue in 2011 as after 2008, there were no estimates made.

### Box 1: Database

Government regulations require that data for measuring the poverty rate are drawn from the Cambodia Socio-economic Surveys. In the 1990s, the CSES databases were not comparable to each other: in coverage, definitions of variables, or data collection methods. Only the CSES of 2004 and the surveys conducted thereafter covered the whole country and have been reasonably comparable to each other. The 2004 and 2009 surveys were full sample surveys (about 12,000 households) while the ones of 2007, 2008, 2010 and 2011 were 'thin sample' surveys (i.e. the number of observations was about a third of the 2004 or 2009). Nevertheless, they are representative of the country.

Effectively, the poverty rates based on the poverty line of 1997 were considered comparable and officially accepted for 1993-1994, 2004 and 2007 only.

**2.2 Household consumption expenditure** was the sum of all the food items consumed (measured in Riels), current non-food items expended upon (clothing, education, travel, communication, health, energy and other utilities), depreciation values of consumer durables owned, and imputed rent of a

house even if the household owned (and not paid for) the house. This was divided by the number of persons in the household to obtain per-capita figures.

**2.3 The food poverty line** of 1997, based on data from CSES 1993-1994, was defined as the cost of purchasing food equivalent to 2,100 K-Calories per person/day. However, as 2,100 K-calories could be fetched through many combinations of food-items, a *Reference Food Basket* (RFB) that would reflect the food consumption of people living at modest levels was defined. This was the consumption basket of the *lower-end deciles households after ordering households by household per-capita expenditure* (as seen from the CSES 1993-1994). Procedure:

*First*, the cost of the RFB was obtained through adding the monetary value of each food item, irrespective of whether it was purchased or home grown (using price data).

*Second*, the quantities of items were adjusted for the food bundle to provide 2,100 K-Calories.

**2.4 The non-food component in the poverty line:** Everyone, however poor, requires some non-food items. In the poverty line developed in 1997 (based on data from CSES 1993-1994), this was the consumption of non-food items by households having total household (per capita) consumption equivalent to the food poverty line expenditure. The logic was that despite being on the verge of facing hunger if people choose these (non-food) items, these items must be critical for sustenance.

**2.5 Poverty line** was the sum of the cost of food (as per the bundle defined in RFB that would be equivalent to 2,100 K-Calories – let be X Riels) and the cost of non-food items as consumed by those households whose total consumption was equivalent to the food poverty line (let this be Y Riels).

Poverty line = X + Y (in Riels)

All figures are calculated on a 'per-capita' basis.

### 3. KEY ISSUES

**3.1 On food needs:** The poverty line of 1997 (based on CSES 1993-1994 data) pegged the minimum food requirement at 2,100 K-Calories per person/day. This was in conjunction with the prevailing practice in Southeast Asian countries at that time. However, there is no strict scientific norm on what the actual intake should be. There are wastages; some people digest food more efficiently than others; some work-patterns require different food inputs; and so on, which could bring in several variations. The RFB could also change over time.

**3.2 On Non-food:** The non-food component in the poverty line of 1997 (based on CSES 1993-1994 data) was the value of non-food items consumed by those households whose total consumption was just enough to buy them food equivalent to 2,100 K-Calories. The logic for this is stated earlier. However, those who earn incomes which would buy food just equivalent to 2,100 K-Calories are acutely poor and have few if any, choices in life. Hence, this 'choice-based' logic is questionable. Also, there is no reason to believe that this quantity/value of non-food items is 'sufficient' for a minimally acceptable standard of living.

**3.3 On imputation:** The household consumption expenditure included the actual expenses incurred, *plus* the depreciation values of consumer durables acquired in the past, *and* the rent-equivalent of the house, irrespective of whether it is paid or not paid. This 'cost-accounting approach' is unsuited in a country where there is a large non-monetised sector and also, many items are non-fungible.

## 4. THE NEW APPROACH

The starting point of this new approach is to address the key issues mentioned above.

### 4.1 *Calculating household consumption expenditure*

#### 4.1.1 The Approach

The first step is to calculate the *household consumption expenditure* from the Cambodia Socioeconomic Survey data (CSES 2009 in this case, as this is the latest available, full sample survey). For this, a 'livelihoods approach' has been adopted, wherein those items on which the household/person incurs 'out-of-pocket' expenses, in cash or kind including own labour (food, clothes, travel, health, energy, rent, education, etc.) in the past 12 months, alone are accounted for. Assets that a household owns, like a house/hut, domestic utensils, water jars, used furniture, mats, etc., *acquired more than a year back*, are not the items on which the household has spent directly or indirectly in the 12 months under reference. They, therefore, do not form a part of the current household total expenditures.

The following three constitute the household consumption expenditure:

1. Food intake, as reported in the household questionnaire (in Riels)
2. Consumption of non-food items, on which expenditure is incurred in cash or kind (in Riels)
3. Rent of a house if rent is actually paid, repair of own or rented house, energy cost (in cash or kind), and water, sanitation and garbage, if actually paid for.

#### 4.1.2 Calculations

Food: The CSES household questionnaires provide the monetary values of total weekly food expenditure in 20 food-groupings: rice, pork, eggs, dairy products, vegetables, fruits, salt, sugar, tobacco, etc. (grown or bought). These are converted to monthly expenses, and the sum of these 20 item-groups is the 'monthly food consumption'. Per capita values are obtained by dividing the food consumption by the number of persons in the household.

Non-food: The CSES household questionnaires provide the monetary values of 13 non-food items groups in one block, and six in another.

1. The first group of 13 item groupings contain: Medical care, transport, personal care, clothing and footwear, communication (cost of using cell phones or other means to communicate), education, furnishings, servants' salaries, in-country recreation, recreation abroad, gambling, jewellery etc., and miscellaneous items (incl. festivals, ceremonies, funerals, and the like). Some are reported on monthly basis, one six-monthly, and others annually. Since all the values are reported in monetary terms, after re-calculating them to make them monthly, they are added together.
2. The second group contains six items: water, sanitation, garbage disposal, energy (electricity, gas, fuel wood, kerosene oil, etc.), house rent, and house repairs. These are all given in monetary values, and on monthly basis. A simple addition therefore suffices.

The sum of these two sets of items (a total of 19 items) constitutes the non-food expenditure. Again, the per capita values are obtained by dividing the non-food consumption by the number of persons in the household.

Finally, the sum of the per capita food and non-food items is the household (monthly per capita) consumption expenditure – see Table 1.

Table 1: Household (Monthly Per Capita) Consumption Expenditure in Current Riels, 2009 (Food based on 20 food groupings and non-food based on 19 items; all items are at 2009 prices)			
Region	Food	Non-food	Total
Phnom Penh	194,510	188,820	383,330
Other urban areas	152,730	121,270	274,010
Rural areas	107,380	68,934	176,314
Cambodia	120,632	86,141	206,773

## 4.2 The New Poverty Line: Principles

### 4.2.1 Food/calorific needs

Question: How much food is sufficient for human survival at a normal metabolism rate?

Answer: It differs from one individual to another. Instead, what is important is to assess whether a person has sufficient income or entitlement to secure a minimum defined quantity of food.

The National Working Group felt that *each person should be entitled to incomes or resources to consume food quantity, which would provide 2,200 K-calories daily*. The logic is as follows:

- 1) 2,100 K-Calories as per the norm in the old poverty line of 1997 (based on CSES 1993-1994 data)
- 2) A small token amount for wastages and non-edible components in food
- 3) A small token amount for changes in age-distribution

The sum of (2) and (3) above is approximated at 100 K-Calories.

Since there could be multiple ways of obtaining 2,200 K-Calories, a new Reference Food Basket has defined. This is the composition of food intake of households in the bottom 5<sup>th</sup>-30<sup>th</sup> percentile (drawn from a group of 28 food items, constituting > 90% of the calorific consumption). The 0<sup>th</sup>-4<sup>th</sup> percentiles have been left out since there was too much 'noise' in the data in this group. The monetary value of the RFB is derived using the new Consumer Price Index Series for Phnom Penh and Other Urban Areas, and the Diaries for Rural Areas. From the monetary value of the RFB, *the cost per K-Calorie is derived*. The food poverty line is obtained by multiplying this value by 2,200.

The cost of food at the food poverty line for the 3 geographic regions could be seen in Table 2. Numbers differ across regions because the prices vary across regions.

### 4.2.2 Non-food items

For enumerating the value of non-food items in the poverty line, *select* items that households in the 20-30 percentiles from the bottom consume were quantified. Values in expenditure brackets above the bottom 30<sup>th</sup> percentile might include conspicuous consumption quantities (and not represent the modest levels at which poverty lines are drawn in LDCs), while those below the bottom 20<sup>th</sup> percentile would be too low to be sufficient: hence the choice. *This was empirically verified*.

On selection of items: From the first group of 13 non-food items mentioned earlier, five are excluded, i.e. in-country recreation, international recreation, jewellery and similar items, gambling, and paying hired servants' salaries, for reasons obvious. From the second group, (i.e. housing, water, energy and so on) all the six items are included.

The sum of these 14 items (i.e. 8 plus 6), averaged for the bottom 20<sup>th</sup>-30<sup>th</sup> percentiles group, provides the value of non-food items for the poverty line. Estimates for the three geographic regions could be seen in Table 2.



### 4.2.3 The price of clean water

Availability of food *per se* is now not such an issue in Cambodia – it exports food. However, the large gap between consumption-based poverty on the one hand and (child) malnutrition on the other, leads one to conclude that a part of the food is lost due to germs and bacteria in the digestive system. These, in high probability, emanate from contaminated water. If clean water were to be provided, the body should absorb much or the entire food intake. Open defecation and unhygienic waste disposal have similar effects. Hence, there is a case to include these items in the minimum needs list.

For purposes of calculation, it is assumed that the water that people in Phnom Penh consume is reasonably clean, particularly that water which is purified using one or another means. Thus, the average monthly cost of water was calculated for those households who paid for water or used at least one method to purify the water. The *difference* between the cost of purified water in Phnom Penh and that elsewhere is the additional amount people elsewhere *should* be expending, in order to drink clean water. This is not a perfect method but it can at least be taken to be a proxy. Next, since there is no acceptable method to calculate the cost of ‘reasonably hygienic sanitation’, this item is omitted for the moment.

All the expenses are converted to per capita expenses by dividing the total expenses by the number of persons in the household.

### 4.3 New Poverty line: Calculations

Poverty lines are calculated for 3 regions: Phnom Penh, other urban areas, and rural areas from CSES 2009. These are presented in Table 2. Table 3 shows a comparison of the new poverty line with the earlier poverty line (drawn in 1997, based on CSES 1993-1994 data).

Table 2: New poverty lines (expenditure per person per month and day, 2009 prices) based on CSES 2009
<b>1. Phnom Penh</b>
a. <i>Food poverty line</i> : 94,945 Riels per month, at 2,200 K-calories
b. <i>Non-food allowance</i> : 98,106 Riels per month
c. <i>Water</i> : nil
<b>Total (a + b + c): 193,052 Riels monthly per capita, or 6,347 Riels/day per capita</b>
<b>2. Other Urban Areas</b>
a. <i>Food poverty line</i> : 79,293 Riels per month, at 2,200 K-calories
b. <i>Non-food allowance</i> : 53,032 Riels per month
c. <i>Water</i> : 61 Riels per month
<b>Total (a + b + c): 132,386 Riels monthly per capita, or 4,352 Riels/day per capita</b>
<b>3. Rural Areas</b>
a. <i>Food poverty line</i> : 69,963 Riels per month, at 2,200 K-calories
b. <i>Non-food allowance</i> : 35,350 Riels per month
c. <i>Water</i> : 1,247 Riels per month
<b>Total (a + b + c): 106,560 Riels monthly per capita, or 3,503 Riels/day per capita</b>

<b>Table 3: Comparing poverty lines of 1997 (based on CSES 1993-1994 data) and new poverty lines (based on CSES 2009 data), Riels/day at 2009 prices (daily expenses)</b>		
	<b>Old poverty lines (1997 method)</b>	<b>New poverty lines</b>
Phnom Penh	4,185	6,347
Other urban areas	3,438	4,352
Rural areas	3,213	3,503
Cambodia	3,332	3,871

#### 4.4 Summing up

The sum of the food bundle (2,200 calories for the RFB in the bottom 5<sup>th</sup>-30<sup>th</sup> percentile group), non-food items (14 items in all, in the bottom 20<sup>th</sup>-30<sup>th</sup> percentile group) and the gap between the cost of purified water paid for in Phnom Penh and elsewhere, constitutes the poverty line.

## 5. POVERTY RATES

### 5.1 Estimates for 2009

Poverty rates, estimated for the 3 regions and the whole country, are given below in Table 4:

<b>Table 4: Percentages of persons below the poverty line according to the New Poverty Line based on CSES 2009 data</b>		
<i>Region</i>	<i>Food poverty rates (%)</i>	<i>Poverty rates (%)</i>
Phnom Penh	0.3	12.8
Other urban areas	2.0	19.3
Rural areas	5.1	24.6
Cambodia (weighted average)	4.23	22.89

These estimates cannot be compared with the earlier estimates. There are two reasons:

1. The methods to calculate total household expenditure are different in each case
2. Poverty lines are differently calculated

The poverty rate calculated by the old method is estimated at about 14.6%, while by the new method it is about 22.9% (Table 5):

<b>Table 5: Comparing poverty rates using the old method of 1997 and the new method of 2009</b>		
Region	Poverty Rate (%) (old method of 1997)	Poverty rate (%) (new method of 2009)
Phnom Penh	1.8	12.8
Other urban areas	6.9	19.3
Rural areas	17.0	24.6
Cambodia	14.6	22.9

### 5.2 Why is urban poverty higher in the new estimates?

Poverty estimates based on the poverty line of 1997 (based on CSES 1993-1994), e.g. for 2004, 2007, or 2009 (draft), showed the poverty rate in Phnom Penh to be very low, and in other urban areas fairly low. Figures in Table 5 are a departure from the past: urban poverty is visibly higher. There are three reasons for this:

1. The earlier method (of 1997) of calculating total expenditure included the imputed value of rents, paid or not paid. This inflated the total (per capita) household expenditure of people living in Phnom

Penh (and to a lesser extent, in other urban areas), since urban properties are high-valued. An artificial increase in the total household (per capita) expenditure in urban areas, especially in Phnom Penh, meant that poverty rate appeared to be lower.

2. The earlier method (of 1997) of calculating total expenditure included the depreciation values of all old/used consumer durables that a household possessed, again inflating the total (per capita) expenditure, and hence depressing poverty rates.
3. The non-food expenses in the newer method are calculated separately for the three regions: Phnom Penh, other urban areas, and rural areas. Since households in the bottom 20<sup>th</sup>-30<sup>th</sup> percentiles in the total (per capita) expenditure bracket in Phnom Penh consume non-food items in much higher quantities, the poverty line is accordingly higher.

The newer poverty estimates for urban areas are closer to what the ID-Poor Surveys suggest, thereby lending them greater credence. These estimates will allow policymakers to become conscious of the gravity of urban poverty, an aspect that should not be overlooked.

#### Box 2: An Axiom

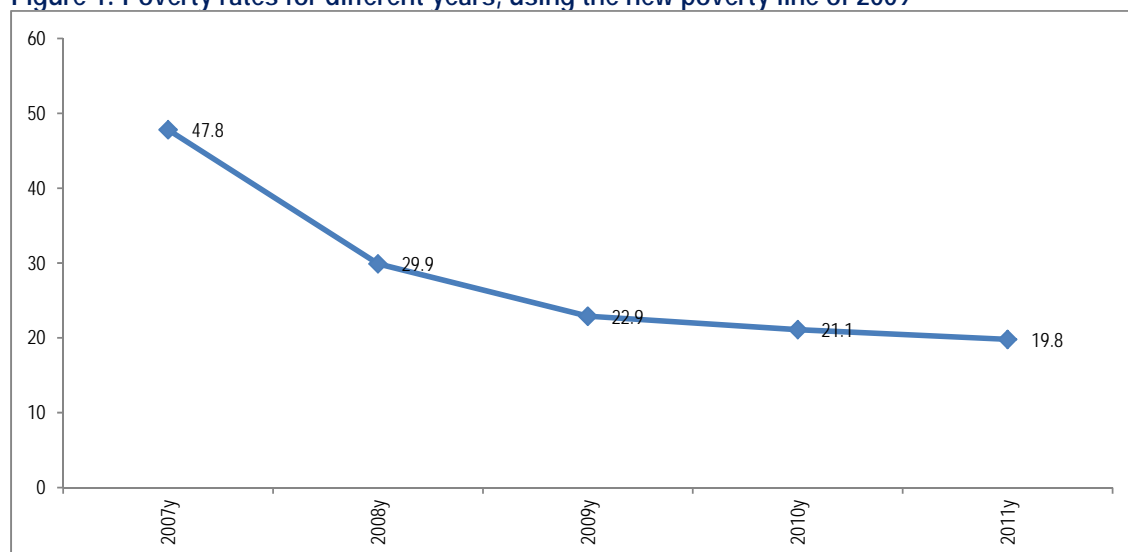
Poverty rate much depends on two factors: calculation of total consumption expenditure, and calculation of the poverty line. An increase in total expenditure will show reduced poverty rate, while an inflated poverty line will show increased poverty rate.

In this report, effort has been made to keep these two to be as rational and balanced as possible.

#### 5.3 Temporal comparison of poverty in the recent years

Poverty rates were calculated for earlier and later years as well as per the new poverty line based on CSES 2009. Comparable data are available for the years 2007, 2008, 2010 and 2011. A new all-Cambodia price series, very recently developed by the NIS (at the Ministry of Planning), was deployed for temporally adjusting the poverty line to inflation. The results are as given in Figure 1 below:

Figure 1: Poverty rates for different years, using the new poverty line of 2009



## 6. CONCLUSION

The first poverty line was drawn in 1997, based on data from of CSES 1993-1994. This is the first change after that, led entirely by a national team. Key features:

1. The food requirements are pegged at 2,200 K-calories (per person per day) – this is a single norm for the whole country.
2. The Reference Food Basket (comprised of 28 items) is defined from the food items consumed by the population in the bottom 5<sup>th</sup>-30<sup>th</sup> percentile group.
3. To sum up the different food items, prices are obtained from two sources: the Consumer Price Series for Phnom Penh and other urban areas, and diaries for rural areas (with some modifications).
4. The poverty line has an allowance for 14 non-food items as expended upon by the bottom 20<sup>th</sup>-30<sup>th</sup> percentile group. Separate estimates have been made for Phnom Penh, other urban areas and rural areas.
5. Attempt has been made to include the cost of clean water in the poverty line, mainly as a token recognition its importance.
6. In 2009, about 22.89% subsisted below the poverty line in Cambodia as a whole: Phnom Penh – 12.8%; other urban areas – 19.3%; and rural areas – 24.9%.
7. For Cambodia as a whole, the poverty rate fell to 21.1% in 2010 and further to 19.8% in 2011.