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MEASUREMENT OF POVERTY AND THE STATISTICAL DATA REQUIRED

Introduction

1.   Poverty is a major issue which is currently receiving a lot of attention from economists and politicians. It has also been one of the main themes dealt with in United Nations international conferences since 1990, particularly the World Summit for Social Development, held in Copenhagen in 1995, and the Fourth World Conference on Women, held in Beijing the same year. In recognition of its importance the United Nations proclaimed 1996 the International Year of the Eradication of Poverty and 1997-2006 the First United Nations Decade for the Eradication of Poverty.[1]

2.   In many developing countries, however, statistical data related to the measurement and analysis of poverty and poverty eradication policies are not given sufficient attention. This is particularly true in the Arab region, which ranks last in terms of the availability of statistical data and field studies related to poverty. In all but a few Arab countries (namely Jordan, Egypt and Morocco), most of the limited data available that could be used for the measurement and study of poverty are in the form of indirect results of statistical activities undertaken without having the measurement and study of poverty as one of the main goals.

3.   The lack of poverty-related statistics puts Arab countries at a disadvantage, particularly as the need for such statistics is expected to increase in the future; efforts to provide and develop these statistics should therefore be given high priority by the statistical organizations of these countries.

A. The concept and causes of poverty

4.   Poverty is a complex concept with many economic, political and perhaps scientific and historical dimensions. The concept of poverty varies in different countries and cultures and has changed over time. However, it is generally agreed that poverty is a state of physical deprivation reflected in inadequate food consumption, in terms of both quantity and quality; poor health, education and housing; the lack of funds to buy durable goods or possess other material assets; and the lack of financial reserves or protective mechanisms for coping with illness, handicaps, unemployment, disasters and other crises.

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[1] See General Assembly resolution 50/107 of 20 December 1995.

5.   In addition to physical deprivation, people living under conditions of poverty experience isolation and banishment; are unable to make decisions, choose freely, dispose of productive assets, or deal with external or internal difficulties; and suffer from feelings of dependence and insecurity. In the Human Development Report 1997,[2] the concept of poverty and deprivation takes into account not only income and consumption but also social indicators such as those related to health and education, security indicators such as those related to crime and conflict, environment and sustainability indicators, and indicators of economic, social and political participation.

6.   The incidence of poverty and its persistence are related to a number of economic, social, cultural and environmental factors. The most important of these factors are the poor distribution of income and wealth, the mismanagement of resources, environmental degradation, population growth, natural disasters, and the marginalization of certain groups in society such as women and the rural population. Economic policies, especially those related to economic reform, as well as internal and international conflicts, are among the factors that have contributed to the creation of poverty and its continuance in some countries during the past few years.

B. The measurement of poverty

7.   The first attempts to measure poverty among the population of a specific country or region were based on indicators of household income. Eventually, however, the limited accuracy of household income data and the differences in family size and age structure were taken into consideration, and other indicators were used instead, including those related to household expenditure and consumption, such as the percentage of expenditure on food in relation to total expenditure and the per capita consumption of calories in relation to nutritional needs.

8.   Some of the methods used for poverty calculation are based on the general concept of poverty, which incorporates not only consumption but also aspects such as health and environmental conditions; level of education; the degree of security and the level of protection against crime, illness, unemployment and disasters; and freedom of expression and choice. Some of these methods, including those used in regression models, linear equation systems and other econometric approaches, rely on the data available in household surveys or other statistical sources. There are also measurement methods that are based on observation and subjective judgement; for example, anthropological researchers classify families according to their living standards based on what the researchers know about different aspects of their lives. The most commonly used poverty measurement methods at present are those that incorporate poverty indicators; such indicators are based on the division of society into two categories, the poor and the non-poor, using the poverty-line method. Each indicator is concerned with measuring one aspect of poverty such as the percentage of the poor, the poverty gap between them and the poverty line, or the different degrees of poverty.

C. The poverty line

9.   The poverty line is determined according to an agreed upon definition of poverty; there are many variations, the most important of which include the following:

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    [2] United Nations Development Programme, Human Development Report 1997 (New York and Oxford, Oxford University Press. 1997).

(a)   The absolute poverty line is determined by calculating the total cost of a basket of food and non-food goods which fulfills basic consumption needs, including the necessary provisions for clothing, housing, health and education. This poverty line is absolute in that it does not change with changes in place and time since it is based on the identification of minimum consumption levels to fulfil basic needs;

(b)   The abject poverty line is determined by identifying the minimum total cost of basic nutritional goods needed for survival;

(c)   The relative poverty line is an indication of the relative position of an individual or a household within a certain society. It is measured on the basis of the average income of that society, and it might be equal to 50 per cent of the average income or to the averaged maximum income of 10 per cent of the low-income population. The relative poverty line, unlike the absolute poverty line, changes with the change of income among countries and with the change of time in the same country;

(d)   The subjective poverty line is determined on the basis of a society's collective opinion regarding the minimum acceptable standard of living in that society. It can also be determined on the basis of legislation; for example, it might be considered equal to the minimum wage or to the maximum income exempt from income tax or benefiting from social subsidies. Legislators determine these limits based on their subjective judgement of the minimum socially acceptable level of income. Therefore, the subjective poverty line changes not only with time and place but also as individuals in a society change. It has been noted that an individual's estimate of the minimum acceptable living standard tends to increase as his or her income rises.

10.   Absolute and abject poverty lines may be the most appropriate criteria to be used in those developing and low-income countries that seek to fulfil their populations' minimum basic needs. The relative poverty line is more suitable for developed and high-income countries, as such countries usually provide various safety nets which guarantee that the minimum basic needs of almost everybody will be met. The problem of poverty in high-income countries relates to ensuring the fair distribution of income rather than securing the fulfilment of basic needs.

D. Estimating the absolute poverty line

11.   The two most common methods of estimating the absolute poverty line are described below:

(a)   The proposed food pattern method is based on the identification of a basket of food products which provides a balanced diet at the lowest cost. The contents of this basket are usually determined by nutritionists in accordance with the nutritional habits and traditions of the society and are calculated at minimum prices. The absolute poverty line is then estimated to be equal to the cost of this basket times the reverse of the percentage of expenditure on food in total consumption expenditure. Estimating the poverty line using this method requires the identification of the components of the proposed basket, the minimum prices of these components, and expenditure on food as a percentage of total household consumption expenditure;

(b)   The actual food pattern method involves calculating the average total number of calories consumed daily by an individual in each of the household income/expenditure categories based on the amounts of the different foods consumed. The income/expenditure category for which calorie intake is

closest to the average number of calories needed by an individual is chosen, and through the use of linear interpolation, the total expenditure required to provide the average number of calories needed is then considered the absolute poverty line.

12.   Applying the actual nutritional pattern method requires detailed data on per capita consumption in terms of the quantity and value of the main food products and on the total per capita expenditure in each income/expenditure category, as illustrated in the table. These quantities and values should include all of the food products consumed, whether purchased or obtained through other means such as own-production or in the form of aid or gifts. In addition, the number of low income/expenditure categories should be sufficient to calculate the poverty line and other poverty indicators (there should be four or five such categories); more specifically, the income/expenditure limits for these categories should be determined so that between 1 and 10 per cent of the total number of households are included under each category and according to the expected percentage of poor households.

Table. Per capita consumption of main nutritional products

Food product		Expenditure Category (currency unit/year/household)					Total expenditure categories
		Less than A	A to less than B	B to less than C	X	X or more	
Cereals and cereal products							
Flour	Amount (kg)						
	Value						
Bread	Amount (kg)						
	Value						
Rice	Amount (kg)						
	Value						
Total value of cereals and cereal products							
Legumes							
Broad beans	Amount (kg)						
	Value						
Beans	Amount (kg)						
	Value						
Total value of legumes							
Vegetables							
Fruits							
Total value of food products							
Total consumption expenditure							
Number or percentage of individuals							
Number or percentage of households							

13.   The actual nutritional pattern method differs from the proposed nutritional pattern method in that the poverty line is estimated on the basis of actual consumption data and not on the basis of a food basket determined by nutritionists according to nutritional considerations. The cost of food in the actual method is calculated on the basis of actual prices paid by the household living at the poverty line rather than the minimum price of each food product; the price variations in the different regions make it impossible for the same household to buy all the food it needs at the lowest prices in the country.

E. Poverty indicators

14.   The poverty line is used to distinguish between the poor and the non-poor. It is usually measured in the local currency using current prices. Therefore, it is not suitable for direct comparisons between countries with different local currencies or between periods with different price levels. The poverty line does not usually reflect the size of the poverty problem in terms of the number of poor or the degree or extent of poverty they endure. However, many indicators related to poverty can be extracted from the poverty line; the most important of these indicators are as follows:

(a)   The headcount index measures the relative significance of the poor in a society (in terms of either individuals or households), as follows:

Headcount index of the poor =

$$\frac{\text{Number of poor under individual poverty line}}{\text{Total population}} \times 100$$

Headcount index of poor households =

$$\frac{\text{Number of poor households under household poverty line}}{\text{Total number of households}} \times 100$$

(b)   The poverty gap is an index that measures the total gap between the income of the poor and the poverty line. It may be calculated in an absolute manner using currency units to determine the total amount needed to increase the consumption level of all the poor to the level of the poverty line. However, for comparison purposes, this index is better calculated as a percentage of the total value of the consumption of the whole population where each person's level of consumption is equal to the poverty line. If the number of poor is q and their levels of consumption are Y_1, Y_2 and ... Y_q, the poverty gap can be calculated as follows (where Z represents the poverty line and N the total population):

$$PG = \frac{\sum_{i=1}^{q} (Z - Y_i)}{NZ} x100$$

(c)   The severity of poverty index reflects not only the poverty gap but also the discrepancies among the poor. It can be calculated as the arithmetic mean of the square values of the relative poverty gaps for all of the poor using the following equation:

$$PS = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Y_i}{Z}\right)^2 x100$$

This index may be divided into two parts, with the first representing the poverty gap and the second representing the disparities among the poor.

15. Calculating the headcount index, the poverty gap, the severity of poverty, and the poverty line itself requires data on total per capita consumption expenditure in each of the income/expenditure categories (the third to the last line in the table) and on the number of individuals (or households) in each of these categories (the next to the last or last line in the table).

F. Status of poverty data and indicators in ESCWA member countries

16. ESCWA members have very few data and indicators on poverty in their countries. For a recent study,[3] it was only possible to obtain the necessary detailed information to calculate the poverty line (the information listed in the table) for three countries, namely Egypt, Iraq and Jordan. For another three countries, Bahrain, Qatar and Kuwait, it was possible to estimate the poverty line indirectly using data related to expenditure on subgroups of food by household expenditure category.

17. All ESCWA member countries have carried out surveys on household income and expenditure. However, the survey results cannot be used to calculate poverty indicators in most of these countries because some of the surveys were carried out a long time ago, the results of some are not available to the public, and most importantly, many have not been classified or published in a manner consistent with the requirements for estimating poverty indicators. Household income and expenditure surveys have been carried out in the ESCWA member countries mainly to provide the necessary data for developing consumer price indices. This involves determining average expenditure on consumer goods in order to identify the goods that should be included in calculating the consumer price index and estimating their respective weights. Many ESCWA member countries include among the objectives of their household income and expenditure surveys a calculation of the elasticity of demand for goods or main groups of goods. These countries usually prepare and publish data on groups of goods by income/expenditure category. However, low income/expenditure categories are often not detailed enough to constitute a sufficient number of categories under the poverty line.

G. Data on the poor

18. Detailed data on the poor are needed in addition to poverty indicators in the study of poverty and the development of policies for its eradication. Most important are data related to the housing situation of the poor, their economic activities, their living standards and conditions in comparison with all other population categories, and the main reasons for their impoverishment.

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[3] Mohammed Hussain Bakir, "Measurement of poverty in the countries of the Economic and Social Commission for Western Asia" (Amman, 9 January 1996) (E/ESCWA/SD/1995/8/Add.1/Rev.1) (in Arabic/English).

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19.   Raw data related to most of the detailed information required with regard to the poor is collected through household income and expenditure surveys. However, these data are rarely published, and when they are reported, they are generally presented in the form of averages for all households, both poor and non-poor. For such data to be useful in studying poverty and developing policies for the eradication of poverty, they should be classified according to household income/expenditure category if the poverty line is not known or agreed upon. As for the process of determining the poverty line, such data would be most useful if they were prepared in a manner which distinguished poor households from non-poor households. With the help of computers, this would likely require little additional effort and cost in comparison with the effort and cost involved in collecting the data independently.