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# How Poor is The Poverty Line?

- A matter of dietary norms and perceptions

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# Abstract

Millennium Development Goal 1 (MDG 1) on halving extreme poverty is measured with the international poverty line. The purpose of the study is to evaluate the measurement of MDG 1 by reviewing the robustness of the international poverty line and some of its national sub-reports. There are at least two problems in assessing a reliable poverty line, namely what constitutes extreme poverty and what kind of life situation this refers to. Through a qualitative content analysis, the study shows that the selected national reports lack a reliable reference for human dietary energy requirements pivotal for estimating a fair threshold for food needs. In the case that a reliable source was used, the activity level was prone to a wide range of interpretations and lacked procedural consistency. The FAO (2011) has presented minimum dietary energy requirements that are below the references used in the national reports, which could shift the poverty line. The study also shows that the concept of “extreme poverty” has been used inconsistently. MDG 1 identifies extreme poverty as the inability to meet basic food- and non-food needs. The international poverty line is based on a myriad of national poverty lines ranging from minimum- to generous needs, where extreme poverty is defined as people barely having enough for the food component alone. These two variables create obstacles in setting a reliable international poverty line. A small shift in the international poverty line changes the poverty rates substantially, making it difficult for poverty programs and MDG 1 in truly identifying the people in most need of help.

**Key concepts:** Poverty assessment, MDG 1, Extreme poverty, Basic needs, Human energy requirements

# Abbreviations

<b>BMR</b>	Basal Metabolic Rate
<b>BCRD</b>	Central Bank of the Dominican Republic
<b>CBN</b>	Cost of Basic Needs
<b>CSES</b>	Cambodia Socio-Economic Survey
<b>EHPM</b>	Encuestas de Hogares de Propósitos Múltiples
<b>ENCOVI</b>	Encuesta Nacional Sobre Condiciones de Vida
<b>FAO</b>	Food and Agriculture Organization
<b>HBS</b>	Household Budget Survey
<b>IBGE</b>	Brazilian Institute of Geography and Statistics
<b>ILO</b>	International Labour Organization
<b>INE</b>	National Institute of Statistics
<b>INSD</b>	National Institute for Statistics and Demography
<b>Kcal</b>	Kilocalories
<b>LSMS</b>	Living Standard Measurement Survey
<b>MECOVI</b>	Programa para el Mejoramiento de las Encuestas y la Medición de las Condiciones de Vida en América Latina y el Caribe
<b>MDER</b>	Minimum dietary energy requirement
<b>MDG</b>	Millennium Development Goal
<b>ONE</b>	National Statistical Office
<b>PAL</b>	Physical Activity Level
<b>PEA</b>	Institute of Research and Applied Economics
<b>POF</b>	Pesquisa de Orcamentos Familiares
<b>PPP</b>	Purchasing Power Parity
<b>RDV</b>	Ravallion, Datt & Van de Walle
<b>WHO</b>	World Health Organization
<b>UN</b>	United Nations
<b>UNSD</b>	United Nations Statistics Division
<b>UNU</b>	United Nations University

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# 1 Introduction

## 1.1 Assessing poverty

In 2005 an estimated 1.4 billion people were considered to live in extreme poverty (UN, 2010). The UN Millennium Declaration states that the responsibility for worldwide economic and social development must be shared among nations multilaterally. A global action plan to reduce poverty was therefore adopted consisting of eight Millennium Development Goals (MDGs) (UN, 2000). MDG 1 aspires to eradicate extreme poverty through halving the proportion of people living on less than US\$1 (now US\$1.25) a day from 1990 levels till 2015 (UN, 2011<sup>1</sup>).

The World Bank is an international institution considered to play a vital role in providing informative-, financial- and technical assistance to developing countries with the priority to fight poverty (World Bank, 2011<sup>2</sup>). It is one of the leading institutions to provide global estimates of poverty. The concept of the US\$1 a day poverty line was initially established in the 1990 “World Development Report”. The monetary figure was considered to reflect the minimum amount of money required to meet basic needs per person per day. To meet basic needs or not to be classified as poor, the poverty line had to be met. The poverty line was regarded as a global yardstick and was partially based on low income countries in which data was available. The international poverty line is the mean of a group of national poverty lines (Kakwani, 2007).

There are various methods in reaching a poverty line. The absolute poverty lines aim to calculate the cost for obtaining physiological basic needs, usually consisting of a food component and a non-food component (such as clothing, transportation, rent, health care and education). The absolute poverty lines in relation to relative poverty lines, allow for poverty comparisons across time and space without having to consider subjective perceptions of basic needs or local preferences. The nutrition-based poverty line method and the cost of basic

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<sup>1</sup> UN, 2011. [www.un.org/millenniumgoals/](http://www.un.org/millenniumgoals/) [2011-04-02]

<sup>2</sup> World Bank, 2011. [www.worldbank.org](http://www.worldbank.org) [2011-04-08]

needs (CBN) method is the prevailing combination in practice (Ravallion, 2010). The methods compute the amount of money required to buy the basic food needs in accordance with nutritional recommendations. Nutrition refers to dietary energy requirements, meaning the amount of food an individual needs to eat in order to compensate for human energy expenditure. A standard is to use calories per person per day (kcal/per/day) (Kakwani, 2007). Calories are often used synonymously with kilocalories, which is the more correct term, and therefore this paper will use the unit kcal and calories interchangeably.

Based on updated data, the US\$1 poverty line has been recalculated to the US\$1.25 poverty line. This poverty line is still the yardstick most commonly referred to in an international context. It is also considered the international poverty line, set out to measure the poorest of the poor qualitatively as well as quantitatively (Ravallion *et al.* 2008). According to Ravallion, Chen and Sangraula (2008) there was a consensus within the international community on the US\$1 poverty line. It was set as the standard for measuring extreme poverty, and became the main indicator for MDG 1.

The persisting method used for calculating the international poverty line is not without flaw. Researchers on the field criticize the process, as it deals with many variables of which data isn't always available, comparable or reliable. Many assumptions and substitutions are made to fill the gaps that are plentiful, in order to make global assessments possible (Ravallion, 1992).

..too little work typically goes into assessing the robustness of poverty comparison – both qualitative and quantitative – to change in the underlying measurement assumptions. Much of the data we now routinely use in poverty analysis is full of errors, and that is unlikely to change. And there are unavoidable value judgements underlying measurement practice. (Ravallion 1992, p. 2)

The “World development Report” (1990) used national poverty lines to estimate a global representative international poverty line (World Bank, 1990). Subsequently Ravallion *et al.* (2008) updated the international poverty line in the “Dollar a Day Revisited” report, using a new set of national reports. These two main reports and the national sub-reports are important to check for conceptual coherence, usage of solid recommendations and references as well as procedural consistency. Obscurities of the prior can have significant implications on MDG 1 poverty rates and policy programs that follow.

## 1.2 Purpose

The purpose of the study is to evaluate the measurement of MDG 1, by reviewing the robustness of the international poverty line and its national sub-reports. Poverty line obscurities can have implications on MDG 1 poverty rates, the identification of the truly poor and social policy actions that follow.

## 1.3 Questions at issue

### **Main Question of the essay**

How well is MDG 1 measured?

### **Sub-questions**

How is extreme poverty defined and how consistently is it used?

How is basic food needs measured and how reliable are the baseline data?

How sensitive are the poverty lines to adjustments?

## 1.4 Delimitations

The focus of this study is MDG 1A which aspires to eradicate extreme poverty through halving the proportion of people living on less than US\$1.25 a day from 1990 levels to 2015. The nine national reports used for the study were selected mainly because they were the only accessible and updated national reports available, but also due to the limited timeframe of the study. There are many variables that can be checked for consistency in the reports, with the purpose of evaluating the international poverty line. This study focuses on conceptual coherence of extreme poverty as well as nutritional references and recommendations. Procedural inconsistencies affect the international poverty line significantly and therefore this study will briefly touch upon methods used and their limitations.

## 2 Methods and sources

MDG 1 was chosen as the general focus area as it is the poverty action plan most commonly referred to in an international context. This study aims to reach into the foundation of the MDG 1 measurement base-reports, in order to check for obscurities in setting the international poverty line. The information on MDG 1 was derived from the official UN website as well as the Millennium Development Goals Report 2010, to obtain an updated view of the MDG 1 key attributes and indicators. This is a literature study of a selection of scientific literature and relevant national reports. The method of investigation is an in-depth analysis of the contents of some of the reports used by the World Bank, in setting the international poverty line. The empirical data are collected with a qualitative approach, selected in order to extract detailed- as well as comprehensive data. This is obtained by using an in-depth approach. The empirical data is cross-referenced with the conceptual framework in order to draw conclusions.

The “conceptual framework” consists of reports from various international organization, international institutions and researchers in the field of poverty assessment. A literature review was conducted in order to obtain a comprehensive understanding of the poverty phenomenon and how poverty is assessed. The information was selected for the purpose of cross-referencing the conceptual frame with the empirical material for conceptual coherence as well as methodological- and reference consistency. The selected information explains the concept of poverty and extreme poverty as well as the standard for human energy requirements. The sub-questions of the study were selected because they are key links in drawing conclusions. Poverty severity and basic needs have to be defined in order to estimate the nutritional requirements for those specific needs.

The first part (I) of the study is a content review of reports from the World Bank and the UN as well as literature from researchers Ravallion, Kakwani, Gordon and Ray. In the second part (II), the contents of the national reports are analyzed followed by a cross-referencing procedure. The national reports, that the international poverty line is based on, is cross-referenced with the conceptual framework. The results cannot be generalized beyond the material processed in this study.

- I. The first part of the study, provided information on the main actors responsible for the measurement of MDG 1, namely the World Bank and Martin Ravallion, director of the World Bank's Development Research Group. The 1990 "World Development Report" by the World Bank, set the standard for the first international poverty line. The work by Ravallion provided this study with key information on the conceptual and methodological development of the international poverty line. Other institutions and researchers that were used to evaluate the overall poverty concept were the UN, Gordon, Ray and Kakwani. The literature was chosen as it provides ample information on the concept of extreme poverty and basic needs.

Ravallion is the most prominent researcher within the poverty line field. In the many reports that he has authored, he explains and critiques the procedures mounting up to the international poverty line. However, little seems to be considered in reforming the procedures used. Conventional poverty measurements and methods are persistently used for consistency purposes. The study acknowledges that the first international poverty line (1990) may have been set in accordance with the capability of the time context. The 2008 "Dollar a Day Revisited" report outlines the current international poverty line. The latter report is used as the main source as it provides this study with updated empirical material and should have considered the critique that the first poverty line has been subjected to.

- II. The "Dollar a Day Revisited" report written by Ravallion *et al.* (2008), provided the study with empirical material consisting of an updated set of national poverty line reports. The reports selected for this study were the following: Albania, Bolivia, Brazil, Burkina Faso, Cambodia, El Salvador, Nicaragua and Zambia. The reports are mainly conducted by the World Bank in cooperation with the national governments. Because of the predominant role of the World Bank, bias of external input rather than national input should be taken into consideration. The national reports used for analysis are merely a part of the 88 reports that were used in estimating the new international poverty line. The national reports used were the only updated reports found using Google search and World Bank online archive search. The Djibouti poverty assessment report was available, however due to the lack of French proficiency the report was excluded. Reports that did not use the CBS method were also excluded as they would have had no information on the focus area of the study.

Updated reports (2001 and later) were a priori as they should consider the latest set of available recommendations and approaches for a more refined poverty indication. The national reports were cross-referenced with the information derived from the first (I) part of the study. The reports were checked for conceptual coherence in the definition of poverty and extreme poverty. In the result section of the paper, these findings are presented under the topic “Poverty lines”.

The national reports were checked for data on nutritional requirement that reflect minimum basic food needs. This requires a human energy recommendation or reference. Although some reports use a solid source the nutritional references selected need to be properly accounted for. To check for reliability in the national estimates, this study refers to the human energy requirements standard assembled by the Food and Agriculture Organization (FAO), the World Health Organization (WHO) and the United Nations University (UNU). FAO’s minimum dietary energy requirements (MDER) estimates (2010) were used as cross-referencing data for the nutritional estimates used in the national reports. They were used because they are considered to withhold global comprehensive data on the field of minimum food needs. The “Human energy requirements Report of a Joint FAO/WHO/UNU Expert Consultation” (2004) was not available until 2004, which means that the national poverty reports have had limited chance in using this set of data. However, the methodology of computing dietary requirements has been available since 1985 provided by the WHO. The 2004 report builds on prior WHO methodology and although adjustments have been made, the earlier data is quite reliable depending on how they are used. The nutritional data gathered from the empirical material are presented under “Nutritional cut-off point”.

Poverty line sensitivity is also briefly mentioned as it has a significant impact on “poverty rates”. The first two sub-questions of the study mount up to a presumed shift in the poverty line, thus indicating changing poverty rates.

# 3 Conceptual framework

To understand how poverty analysts assess poverty, it is important to lay out the foundation of some of the different concepts and methods that are being used. Assessing poverty is anything but a straight-forward and easy task. It has many obstacles that are yet to be overcome and after decades of criticism, the poverty assessment procedures are still profoundly debated.

## 3.1 Defining Poverty and Extreme Poverty

There are many definitions of poverty that either stresses the human deprivation of basic needs or the absence of opportunities and capabilities that affect the human standard of living and well-being. According to Ravallion (1992) “The basic needs approach goes back to Rowntree in York, England at the turn of the nineteenth century... The most important component of basic needs is food to attain some recommended food energy intake.” (Ravallion 1992, p. 26) According to the 1990 World Development Report, “Poverty is concerned with the absolute standard of living of a part of society.” (World Bank 1990, p. 26) Further absolute poverty is defined by the World Summit on Social Development as:

A condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services. (Gordon 2005, slide 3)

According to Ray (1998, p. 250-253) “the discourse on poverty is a notion of a poverty line”, that distinguishes poor from non-poor through a critical monetary line. This line subsequently represents “a minimum acceptable economic participation in society” or “an expenditure threshold that is regarded as minimally necessary for “adequate” participation in economic life”. What constitutes adequacy or an “acceptable economic participations in society” is rather ambiguous, and susceptible to relative interpretations (Ray, 1998).

The 1990 World Development Report defines poverty as “the inability to attain minimal standard of living” (World Bank, 1990). However, poverty lines and thus poverty can be based on subjective judgments of what people of a society perceive as minimal (Ravallion, 1992). According to the UN:

“..extreme poverty” can be defined as “poverty that kills,” depriving individuals of the means to stay alive in the face of hunger, disease, and environmental hazards. When individuals suffer from extreme poverty and lack the meager income needed even to cover basic needs, a single episode of disease, or a drought, or a pest that destroys a harvest can be the difference between life and death. (UN 2005, p. 4)

Undernutrition is a distinct concept of “poverty”, that can be considered as “food energy poverty” (Ravallion, 1992). “Absolute lines aim to measure the cost of certain “basic needs,” which are often interpreted as physiological minima for human survival; nutritional requirements for good health and normal activity levels are widely used to anchor absolute lines.” (Ravallion 2010, p. 3) Undernourishment is defined by FAO and the World Food Programme (WFP) (2010, p. 8) as “existing when caloric intake is below the minimum dietary energy requirement (MDER).”

In order to conduct cross-country comparisons and global poverty assessments, the World Bank has set up a poverty standard through an international poverty line. The World Development Report of 1990 states that everyone living under the international poverty line, of US\$1 a day, live in “poverty” (World Bank). The cut-off point of US\$1 is what distinguishes the poor from the non-poor. It is the yardstick referred to in MDG 1 on halving “extreme poverty” by 2015 (UN, 2010). The 1990 World Development report, however, has a second poverty-line referred to as the “extreme poverty” line of US\$0.75 a day (World Bank, 1990).

Concluding remark: Separating the “extremely poor” or “the poor” from the “non-poor” is an ambiguous process where an absolute standard of living has to be set. Assigning an absolute standard of living is susceptible to interpretation and subjective judgments, due to the difficulty of deciding what acceptable levels and adequacy of necessity entails. Extreme poverty is equally as ambiguous and can be seen as anything from poverty that kills or severe deprivation, to minimum necessity or acceptable basic needs. Basic needs consist of diffuse variables, where “minima” for human “survival” for a “healthy and normal activity lifestyle” are part of the same severity level.

## 3.2 The Poverty line

In the 1990 World development report, the World Bank presented the first ever global extreme poverty estimates. The estimates were based on a monetary figure that was believed to resemble the absolute minimum amount of money of which an individual has the capability to acquire basic needs (World Bank, 1990). The report based its estimates on national poverty lines and concluded that US\$1 a day was needed. This line was updated in the 2008 “Dollar a Day Revisited” report. The main changes that were made entailed new and improved PPP<sup>3</sup> rates (Kakwani, 2007).

According to Ravallion (1992, 2010) the most common principal steps in estimating national poverty lines are:

- Measure household consumption
- Adjust for difference in cost of living
- Establish a poverty line
- Compute the poverty rate

Through surveys at household level, poverty analysts are able to obtain household income-, expenditure- and consumption figures. These figures (usually consumption figures) are believed to indicate the monetary well-fare capability for acquiring the basic food needs as well as allowances for non-food spending. An estimated 80 percent of national poverty assessments are computed with the cost of basic needs (CBN) method, which calculates the cost of attaining the food and non-food component (Ravallion, 1992). When the poor have been distinguished, they are counted (so called headcount) and presented as a percentage of the population, in a so called “poverty rate” (World Bank, 1990).

### **The Food component**

The food component is obtained through converting recommended nutritional (dietary) requirements to an adequate consumable domestic food basket and estimating its worth. The food basket is at best drawn from a domestic reference population and further converted to

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<sup>3</sup> Purchasing Power Parity (PPP) is a measure to recalculate the 1 USD to local currency based on purchasing power rather than official exchange rates. “Purchasing power parity exchange rates are the essential ingredients of determining internationally comparable poverty lines and they allow international comparisons of costs of living in different countries” (Kakwani 2007, p. 19).

monetary means (Ravallion & Bidani, 1994). The nutritional requirements that the food basket should contain, is decided by estimating human energy needs required for a specific human expenditure level (activity level). The nutritional requirements reference should represent the individuals of a given group by taking factors of age, gender, health and weight for attained height into consideration (FAO, 2011<sup>4</sup>). If a person lacks the monetary means to acquire the food component, he or she will be considered poor.

### **The non-food component**

The non-food allowance can be assessed with Engel's law that measures poverty by the food share of total consumption. According to Engel's law, poverty and extreme poverty occur when high levels of expenditure are used for food consumption. Engel had a threshold of 60 percent food for poverty and 80 percent for extreme poverty. Thus poor is assumed to use 40 percent non-food needs while extremely poor use 20 percent for non-food needs. A more common way is to calculate the average non-food share for the population living close to the poverty line (Ravallion, 2010).

## **3.3 Assessing the food component**

As stated in the prior section, in order to assess poverty, most developing countries have prescribed nutrition (human energy requirements) as a part of the foundation for basic needs. The absolute poverty lines aim to calculate the cost of physiological basic needs, usually consisting of a food component (food basket). CBN computes the amount of money required to buy the basic food basket in accordance with nutritional recommendations. Nutrition refers to human dietary energy requirements, meaning the amount of food an individual needs to eat in order to compensate for human energy expenditure. A standard is to use calories per person per day (kcal/per/day) (Kakwani, 2007). In the "Dollar a day revisited" report a common figure for nutritional basic needs, based on national reports, were estimated to be 2100 kcal per person per day (Ravallion *et al.* 2008).

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<sup>4</sup> FAO, 2011. Minimum Dietary Energy Requirements  
[www.fao.org/fileadmin/.../MinimumDietaryEnergyRequirement\\_en.xls](http://www.fao.org/fileadmin/.../MinimumDietaryEnergyRequirement_en.xls)

## Calculating human energy requirements

The new standards for human energy requirements was released by FAO, UNU and WHO in 2004, which updates available material by WHO that dates back to 1985. The purpose of the information is to advice on scientifically sound food- and nutrient requirements as well as formulate recommendations for action. “FAO/WHO recommendations are currently utilized in virtually all countries, and nutrient requirement reports are among the most frequently referenced and most sought-after publications in both organizations”. (p. iii) To reach a human energy requirement estimate, the Basal Metabolic Rate function (BMR), meaning energy required to sustain basic bodily functions in a complete rest mode, is multiplied with the physical activity level (PAL). Variables such as weight for attained height (Body Mass Index), gender, age, health and life situation are considered when estimating BMR levels (FAO, UNU & WHO 2004).

**Table 1: Classifications of lifestyles in relation to the intensity of habitual physical activity (PAL)**

Category	PAL value
Sedentary or light active lifestyle	1.40-1.69
Active or moderately active lifestyle	1.70-1.99
Vigorous or vigorously active lifestyle	2.00-2.40

*(FAO et al. 2004, p. 38)*

## Estimating energy requirements for a population

In order to estimate a sound energy expenditure of a population, national population census<sup>5</sup> data are required. Energy requirements can be measured by energy expenditure or energy intake, with the former seen as more reliable due to procedural recording problems of the latter. As stated earlier, undernourishment is defined by the FAO and WFP (2010) as existing when caloric intake is below minimum dietary energy requirements (MDER). The MDER is the amount of energy needed to maintain a minimum acceptable weight for attained height in an individual with a “light” activity level. It varies by country and time depending on the gender and age structure of the population (FAO & WFP, 2010). Extremely low PAL estimates are barely enough for survival and non-compatible with long-term health and

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<sup>5</sup> A census is based on statistical total population count including demographic specifics.

capability of earning a living. WHO (1985) identified a mean PAL value of 1.27 for inactive individuals in crisis situations. People in crisis situations are however not inactive and more prone to stress which therefore according to the FAO *et al.* (2004) should make for a higher PAL estimate. According to consultations, a PAL value of 1.40 (see table 1) which represents the lower part of a light active lifestyle, would be more appropriate for short-term relief interventions (FAO *et al.* 2004). A new standard of Body Mass Index (BMI) was released in 2006, thus updating the FAO *et al.* (2004) minimum dietary energy requirements. When assessing the MDER for a national population, the MDER is the weighted average for the various groups of that population. When the demographic features change in a population, so do the MDER thresholds along with the undernourishment rates. The following table shows the updated MDER for the countries chosen for analysis. The table shows old census data recalculated with adjusted BMI. The different study years show relatively small differences in caloric requirements.

**Table 2: Food Needs or MDER for relevant countries estimated by FAO**

<b>Minimum Dietary Energy Requirements</b>			
<b>(kcal/person/day)</b>			
<b>Country</b>	<b>1990-92</b>	<b>1995-97</b>	<b>2003-05</b>
Albania	1890	1890	1910
Bolivia	1710	1710	1730
Brazil	1810	1830	1850
Burkina Faso	1720	1720	1730
Cambodia	1670	1680	1750
Dominican Republic	1830	1830	1840
El Salvador	1720	1730	1760
Nicaragua	1720	1730	1770
Zambia	1740	1750	1750

(FAO, 2011<sup>6</sup>)

Between study periods 1995-97 and 2003-05, the estimates differed between 0 and 70 kcal with an average of 25 kcal between the periods, indicating that changes to the requirements are very small from year to year. Between study periods 1990-92 and 2003-

<sup>6</sup> FAO, 2011. Minimum Dietary Energy Requirements

[www.fao.org/fileadmin/.../MinimumDietaryEnergyRequirement\\_en.xls](http://www.fao.org/fileadmin/.../MinimumDietaryEnergyRequirement_en.xls)

05, the estimates only differed between 10 and 80 kcal with an average 31 kcal difference. This indicates that adjustments over a decade are also very small.

When estimating energy requirements for a population at household level, it is also important to consider that different gender and age groups require different energy intake. One way of adjusting for the differences in the cost of living, among individuals of a household, is to use equivalence scales. The OECD scale, most commonly used by Eurostat, assigns different individuals of a household with different weights. 1 for the first adult, 0.7 for other persons of more than 13 years of age and 0.5 for children of 13 years and younger (EUROSTAT, 2003).

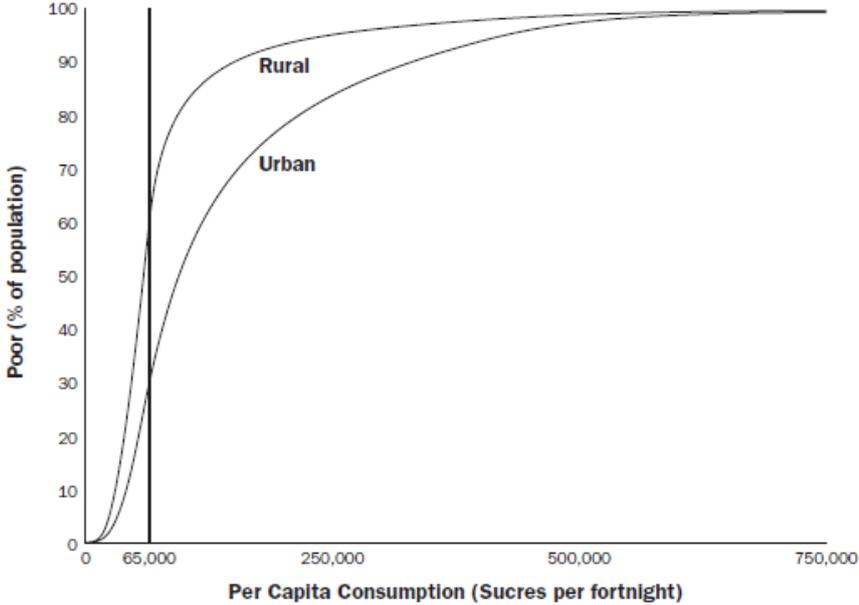
Concluding remarks: When estimating energy requirements for a population, variables such as gender, age and population numbers are relatively straight-forward to estimate. Generalizing an activity level and working habits for a population is however rather speculative. The MDER merely shows the lower end of human energy requirements, based on light activity levels. The range is wider than that and average acceptable activity level can span beyond the MDER in both directions. “Adequate” human energy requirements are the caloric requirements needed to sustain energy expenditure, while maintaining a healthy body composition for a preferred activity level and life situation. The recommended level for a well-off population, considers nutritional capabilities for healthy and well-nourished individuals. The acceptable level of energy requirements or nutritional adequacy is still subjected to relative interpretation of whether poverty considers people well-off or deprived. If a country assumes that the population generally engages in strenuous subsistence labour, the human energy requirements may well be higher than that of the MDER. For a population where unemployment is high, a sedentary lifestyle may be the more pronounced activity level. The question thus still remains as to what is considered a standard activity level for people living in extreme poverty.

### 3.4 Poverty line sensitivity

In countries where undernourishment rates are high, consumption of dietary energy needs close to the cut-off point (threshold for minimum energy requirements) is common. This makes the MDER parameter highly sensitive to shifts. The new MDER have had a huge impact on the number of people estimated to live in hunger towards a significant drop in

hunger rates (FAO, 2011). This is also the case when it comes to people living in poverty. If people show tendencies to consume close to the poverty line, a shift in the poverty line will change poverty rates significantly. This can be stated in a cumulative distribution function of per capita consumption. The slope of the distribution curve is relatively steep around the cut-off point, making poverty rates drop or increase with a small downward or upward shift of the cut-off point.

**Figure 1: Cumulative Distribution Function for Ecuador**



*(Lanjouw, 2001)*

## 4 Country reports

In this chapter, the country reports that constitute the foundation of this study are presented. To offer a better overview of the results, the most important features of the reports have been listed in the table below. Below the table, each report is presented thoroughly.

**Table 3: Summary of the empirical result**

a	b	c	d	e	f	g
Country	Year	Survey	Type of Poverty Line	Poverty Rates (%)	Kcal/Capita/day	Reference activity level
Albania	2003 (2002)	LSMS CBN	Full poverty line Absolute poverty line Poverty line	25.4	2288	not available (n.a.)
			Extreme poverty line Food poverty line	4.7		
Bolivia	2005 (2001)	MECOVI	Upper poverty line Moderate poverty line Lower poverty line	64.6	n.a.	n.a.
			Extreme poverty line	36.8		
Brazil	2007 (2002/03)	POF	Upper poverty line Intermediate poverty line	21.5	2300	n.a.
			Food poverty line	8.5		
Burkina Faso	2005 (2003)	CBN	Official poverty line	46.4	2283	n.a.
			Extreme poverty line	n.a.		
Cambodia	2006 (2004)	CSES	Baseline poverty line National poverty line Total poverty line Overall poverty line	35	2100	Subsistence- level
			Food poverty line	20		
Dominican Republic	2006 (2004)	ENCOVI	Poverty line	40	2161	n.a.
			Extreme poverty line	16		
El Salvador	2005 (2002)	EHPM	Total poverty line	43	2200	n.a.
			Extreme poverty line	19		
Nicaragua	2003 (2001)	LSMS CBN	General poverty line	45.8	2200	n.a.
			Extreme poverty line	15.1		
Zambia	2005 (2002/03)	LCMS CBN	Total poverty line Poverty line	56	1770/2464	Average of low-high active lifestyle
			Core poverty line Extreme poverty line Food poverty line	56-36		

Column (a) refers to the country report  
Column (b) refers the publishing year and (survey year)  
Column (c) refers to the type of survey used  
Column (d) specifies the different poverty lines used  
Column (e) is the percentage of people under the cut-off point  
Column (f) specifies the used nutritional requirements kcal/person/day

Besides the problems examined in the study, there is also a set of measurement problems. Consumption is usually measured through a Household Budget Survey (HBS) standardized by the International Labour Organization (ILO), the United Nations Statistics Division (UNSD) and EUROSTAT or a Living Standard Measurement Survey (LSMS) standardized by the World Bank. Both survey types have similarities but also differences. The variations for both are large and an LSMS can occasionally be similar to an HBS. HBS usually measures consumption factors by conducting interviews and by diary keeping, while LSMS mostly use interviews alone. HBS usually sample households over the whole year to account for seasonal variations, while the LSMS usually measures a shorter period. Both surveys have the following deficiencies:

- Sample errors, due to fairly small samples
- Non-response (less serious in developing countries)
- Short measurement period (1-4 weeks) with the risk that the household is classified as poor when it might not be the case or vice versa
- Problems for the households to correctly remember their consumption
- Both surveys are designed to measure averages for groups of households, not to classify each household
- Most of the consumption, e.g. food can only be measured on a household level. Comparing households of different sizes is not fair, but comparing per capita is not less fair, due to scale of economics and that children need less calories
- Sensitivity to errors: small changes can have a huge impact on the poverty rate, as most poor are clustered around the poverty line

These problems add to the problems studied in this paper, meaning that poverty comparisons are even more unreliable (EUROSTAT 2003; ILO 2003; World Bank 2002).

## 4.1 Albania

### **Report**

Albania: Poverty Assessment 2003

The report is a collective effort between the World Bank, the Institute of Statistics of Albania, Albanian government agencies and the Human Development Promotion Center.

The poverty line was calculated from the 2002 Living Standard Measurement Survey (LSMS) using the cost-of-basic needs (CBN) method.

### **Poverty lines**

“An individual is considered poor if her level of per capita expenditure falls below a minimum level necessary to meet her basic food and non-food needs. This minimum level of consumption is denoted the “poverty line” and represents the cut-off point separating the poor from the non-poor.” (p. 10) The food poverty line is the cost of obtaining a certain minimum amount of calories, while the absolute poverty line/poverty line/full poverty line also includes essential non-food items.

### **Poverty rates**

“Setting a poverty line is seldom uncontroversial, and is often the focus of heated public debate, particularly when it is used as a reference threshold for entitlement programs. For distributions around the line, the choice may be particularly difficult, as even a small shift of the line can have significant impact on the poverty number.” (p. 10)

The absolute poor, including the extremely poor, amounted to 25.4 percent of the population, while the extremely poor alone, amounted to 4.7 percent. “A large number of individuals are clustered around the poverty lines. Increasing the poverty line by 10 percent increases the percentage of poor individuals by 25 to 50 percent, depending on the poverty line used. This is true for negative shifts in the poverty line as well.” (p. vi)

### **Nutritional Cut-Off Point**

The report used the FAO recommendations on the minimum calorie needs according to age and sex. Subsequently, recommendations were adjusted to the Albanian population according

to the 2001 census. The estimate amounted to 2288 kcal/person/day (no further details were provided).

### **Comments**

The estimates are based on consumption data collected by recall (by remembering and not by diary keeping). Food was measured only for 14 days per household and only during spring of 2002. The sample size was 3 600 households. No scale of equivalence is used. There is sensitivity analysis conveying that a large number of individuals are clustered around the poverty line. Reference for preferred activity level is absent in the report.

## **4.2 Bolivia**

### **Report**

Bolivia Poverty Assessment: Establishing the Basis for Pro-Poor Growth 2005

The World Bank in collaboration with the Social and Economic Policy Unit and the National Institute of Statistics (INE) started the preparation of the Bolivia Poverty Assessment.

The World Bank has supported the INE in developing national representative annual household surveys since 1999. The improvement of the surveys of living conditions project “Progama para el Mejoramiento de las Encuestas y la Medición de las Condiciones de Vida en América Latina y el Caribe” (MECOVI) was used for data collection together with 2001 census data.

### **Poverty lines**

The official poverty lines are based on both expenditure data and income data. The rural areas were measured with per capita household expenditure while the urban zones were measured using per capita income data. Extreme poverty is considered as income below attainment of food containing minimum caloric requirements. Poverty is considered as income insufficient to cover the food component as well as the non-food component. There is a high poverty line reflecting the upper limit of a value of non-food products and a lower line determining an inferior limit.

### **Poverty rates**

Based on income data, 65 percent of the population was considered poor while 41 percent were considered extremely poor. Official rates show that 36.8 percent of the population lived in extreme poverty while 64.6 percent lived in moderate poverty according to a mix of income data and expenditure data.

### **Nutritional Cut-Off Point**

There is no figure of caloric needs in the report but the report does state that a basket of basic food products have been calculated alongside minimum caloric intake recommendations made by the WHO.

### **Comments**

The report has no technical part (metadata) describing the sample, measuring periods, etc., but as it is based on the LSMS approach it is probably not measuring the whole year and uses a short time span (7-14 days) for food consumption. Reference for preferred activity level is absent. No scale of equivalence is mentioned. There are two poverty lines reflecting basic food and non-food needs, a high poverty line as well as a lower poverty line.

## **4.3 Brazil**

### **Report**

Brazil Measuring Poverty using Household Consumption 2007

The report was a collaboration between the World Bank, Brazilian Institute of Geography and Statistics (IBGE) and the Institute of Research and Applied Economics (PEA).

The poverty lines were calculated from the 2002/03 household budget survey. Intermittent surveys “Pesquisa de Orcamentos Familiares (POFs)” provided information on income, consumption and expenditure data.

### **Poverty lines**

According to the report Brazil didn't have an official poverty line prior to 2005 and instead used a variety of poverty lines depending on the policy purpose. In 2006 a poverty line had still not been presented and the poverty lines used in the report were considered as unofficial measures.

Three different poverty lines that were considered to capture the dimensions of consumption based poverty were namely a food poverty line (extreme poverty line), an intermediate poverty line (CBN lower line) and an upper poverty line (CBN upper poverty line).

1. The *food poverty* line reflects the cost of the minimum food requirements.
2. The *intermediate poverty line* reflects the cost of satisfying the minimum livelihood needs, which include the minimum food needs and essential non-food needs. The non-food component is determined by the expenditure that people, whose total consumption is the same as the food poverty line use for non-food needs (people that are required to compromise basic food needs for basic non-food needs).
3. The *upper poverty line* differs from the prior in that the non-food component is determined by the expenditure that people, whose consumption already meets the required food needs, use for non-food needs (people that don't have to compromise basic food needs for basic non-food needs).

According to the report the first two poverty lines are the lines most relevant for policy development, as they identify households with most pressing needs. They also fall in accordance with the monetary thresholds for the administrative poverty lines commonly used to determine eligibility for poverty alleviation in Brazil.

### **Poverty rates**

According to the report 8.5 percent of the population was equal to or beneath the food poverty line meaning they didn't have enough money to meet basic food needs. The intermediate poverty line was estimated to be 21.5 percent of the Brazilian population.

### **Nutritional Cut-Off Point**

The report used FAO daily food requirements to estimate the food anchor for the CBN poverty lines. The requirements were estimated to be 2300 kcal per person per day.

### **Comments**

The estimates are based on an HBS with 48 569 households. The survey measures the full year, but food consumption is only measured for 7 days for each household. There are three unofficial poverty lines. Scale of equivalence is described but not used. "In the absence of no

generally accepted methods for calculating either adult equivalence scales or for accounting for economies of scale within households, per capita is used in spite of its limitations and its consequences for welfare and poverty measurements.” (p. 10-11) Reference for preferred activity level is absent in this report.

## 4.4 Burkina Faso

### **Report**

Burkina Faso Reducing Poverty through Sustained Equitable Growth 2005

The report was a collaborated effort between the World Bank, Ministry of Economy and Development, the National Institute for Statistics and Demography (INSD) and the German Gesellschaft für Technische Zusammenarbeit.

The objective of the priority surveys conducted in 1994, 1998 and 2003 was to present a picture of monetary and non-monetary poverty over time, using a less expensive questionnaire than the LSMS. Based on the surveys conducted, INSD constructed a poverty line using the CBN method.

### **Poverty lines**

The sum of the food and the non-food component determines the official poverty line. The food component is based on required food consumption to meet basic food needs. The non-food component is equal to the non-food expenditure observed for households whose food consumption is close to the food poverty line.

### **Poverty rates**

The priority survey was considered to merely show a “snapshot poverty” due to the occurrence of abnormal events present in the years when data were collected. The poverty rate was estimated to be 46.4 percent of the population in 2003.

### **Nutritional Cut-Off Point**

Recommended intake was estimated to 2283 kcal/person/day. “In setting the poverty line there is a certain subjective element, the most important being the choice of the caloric requirement that would “anchor” the food component of the line. This raises the question how robust poverty rankings are across time to the choice of the poverty line.” (p. 14)

## **Comments**

Estimates are based on 8 500 households only measured during a 4 month period. Food consumption is only measured 15 days for each household. The report refers to an official poverty line. Reference for preferred activity level is absent in this report and scales of equivalence are not mentioned. The data used is considered to be a snapshot estimate and therefore rendered incomparable.

## **4.5 Cambodia**

### **Report**

Cambodia Halving Poverty by 2015? Poverty Assessment 2006

The report was a collective effort consisting of several government ministries and the World Bank. The 2004 Cambodia Socio-Economic Survey (CSES) was conducted by the National Institute of Statistics (NIS).

### **Poverty lines**

The report acknowledges a baseline poverty line, a total poverty line and an overall poverty line consisting of the national food poverty line (the food component) along with three regional non-food allowances. “Someone who consumes less than the food poverty line is not receiving the minimum amount of food (calories) necessary to maintain their health, and in theory has no ability to meet non-food consumption needs for clothing, shelter, medical care, and so on.” (p. 20)

### **Poverty rates**

The extremely poor that fall below the food poverty line were estimated to be 20 percent of the population while 35 percent of the population fell under the national poverty line. According to the 2004 CSES, 28 percent lived under the poverty line. Non-poor households are considered vulnerable with a living standard close to the poverty line. Due to this the Cambodian report also classifies household well-being by distinguishing the very-poor and the moderately poor from the well-off.

### **Nutritional Cut-Off Point**

The cut-off point is set at 2100 calories per day (considering persons of all ages and both sexes at a subsistence-level dietary intake) with no further reference.

### **Comments**

The survey uses both recall (7 days for food) and diary keeping for one month, but only the recall data are used in the report. No scale of equivalence is used. The sample is 11 993 households. The poverty line is updated from an earlier line. Activity level is referred to as subsistence workload level.

## **4.6 Dominican Republic (DR)**

### **Report**

Dominican Republic Poverty Assessment Achieving More Pro-Poor Growth 2006

The report was a collective effort consisting of the World Bank, the Inter-American Development Bank, the Central Bank of the Dominican Republic (BCRD), the National Statistical Office (ONE) and government agencies. An inter-agency process was established by the World Bank and IDB in order to discuss poverty measurement methods. The result of that process was further used as a foundation for the poverty analysis of the report.

“The country lacks regular household surveys specifically designed to measure the monetary and non-monetary dimensions of poverty and track living conditions.” (p. 4)

“The Dominican government is committed to revise and update the monetary poverty levels with an income and expenditure survey developed by the National Statistical Office (ONE) and the Central Bank (BCRD) during 2006.” (p.iv) Although not clearly stated the “Encuesta Nacional Sobre Condiciones de Vida (ENCOVI)” living standard survey seems to have been used.

### **Poverty lines**

Poverty is considered as having the monetary means to consume less than minimum caloric intake as well as basic non-food needs. Extreme poverty is considered as having incomes too low to afford the food basket of minimum caloric intake. The analysis draws on international

good practices to estimate poverty under different methodological variations due to limitations of data that is required in order to estimate an adequate national poverty line.

### **Poverty rates**

40 percent of the population were perceived as poor while 16 percent of the population were perceived as extremely poor in 2004.

### **Nutritional Cut-Off Point**

The nutritional Cut-off point was set at 2161 calories per person per day which according to the report is considered as a standard for the Latin American and the Caribbean region.

### **Comments**

The estimates are based on only 33 basic food components. There is no official poverty line, given existing data limitations and the lack of consensus on what constitutes an adequate poverty line for DR. No scale of equivalence is used. There is a poverty rate sensitivity analysis. Reference for preferred activity level is absent in this report. A poverty line estimate was considered non-available in the “Dollar a Day Revisited” (Ravallion *et al.* 2008).

## **4.7 El Salvador**

### **Report**

El Salvador Poverty Assessment Strengthening Social Policy 2005

Due to the earthquake of 2001, The Government of El Salvador requested advice and assistance on poverty reduction, social sector policy and poverty monitoring. Hence the World Bank developed an analytical and advisory program of which the report is part of. The Inter-American Development Bank also facilitated expertise on the field.

One of the key purposes of the report was to generate a consistent poverty profile for the period 1990-2002. The country’s national household survey “Encuestas de Hogares de Propósitos Múltiples” (EHPM) was used to collect data on household incomes but not on consumption. According to the report, strengthening of the EHPM together with census updates will help identify the poor more accurately.

### **Poverty lines**

The report used the Government of El Salvador's official poverty lines, based on the standard methodology of minimum caloric intake. The extreme poverty lines correspond to the estimated monthly cost of a basic food basket that provides a minimum caloric need. The total poverty lines are obtained by multiplying the extreme lines by a factor of two to allow for non-food expenditures. The official poverty lines use different consumption baskets for urban and rural areas to achieve the same minimum caloric requirement. The cost of these food baskets is updated yearly.

### **Poverty rates**

Official poverty numbers published by the Salvadoran statistical agency are household level figures based on household income collected through the EHMP. According to the statistical agency 43 percent of the population were perceived poor respectively 19 percent extremely poor in 2002. According to the World Bank 37 percent were poor while 15 percent were extremely poor.

### **Nutritional Cut-Off Point**

The minimum food basket that goes into providing the minimum caloric requirements was estimated to be 2200 kcal per day for a family of four.

### **Comments**

The poverty estimates are only based on income. The World Bank is using a different definition of the poverty line than the official one. Sensitivity analysis is performed. The sample size is 13 000 households. Reference for preferred activity level is absent in the report as well as scales of equivalence. A poverty line estimate was considered non-available in the "Dollar a Day Revisited" (Ravallion *et al.* 2008).

## **4.8 Nicaragua**

### **Report**

Nicaragua Poverty Assessment: Raising Welfare and Reducing Vulnerability 2003

The report was a collaborated effort between the government of Nicaragua, the World Bank, the Nicaragua Program for Improving LSMS, the National Institute of Statistics and MECOVI-Nicaragua task team. The report utilized nutritional data from the Instituto de

Nutrición de Centro América y Panama and the Panamerican Health Organization of the WHO. The nutrition-based poverty line was calculated from the 2001 LSMS using the CBN method.

### **Poverty lines**

According to the report “extremely poor” (allowance for food needs) is a subset of “the poor”. “The general poverty line” consists of extreme poverty (food component) and non-food consumption. “A person is considered poor if his/her total per capita annual consumption was below the general poverty line, and a person is considered extremely poor if his/her total per capita annual consumption was below the extreme poverty line.” (Meaning below the amount needed for food alone) (p. 2)

### **Poverty rates**

In 2001 all poor (general poverty) including the extremely poor were estimated to 45.8 percent of the population. Out of that 15.1 percent were considered extremely poor.

### **Nutritional cut-off point**

The minimum energy requirement (kcal/person/day) recommended for Nicaragua was 2187 or 2200 kcal in 2001. “Because of demographic changes in the period of 1998-2001, the minimum caloric requirement weighted average increased from 2,187 to 2,200 Kcal/day.” (Increase of 0.6 percent.) (p. 2) “During the 1998-2001 period, the composition of the Nicaraguan age-sex population changed and a new minimum caloric requirement was computed; the new value was estimated at 2,187 Kcal/day (a decrease of 0.57%).” (Annex 1, p. 1) (Confusing number of whether there was an increase or decrease in calories, however a change is noted)

### **Comments**

The data is based on a LSMS type of survey with no diary keeping. The sample size is 4 191 households. The poverty line is “computed” and updated from earlier poverty lines. No scale of equivalence is used. The technical description is very limited and reference for preferred activity level is absent in the report. A poverty line estimate was considered non-available in the “Dollar a Day Revisited” (Ravallion *et al.* 2008).

## 4.9 Zambia

### **Report**

Zambia Poverty and Vulnerability Assessment 2005

The Living Condition Monitoring Survey (LCMS) was carried out by the Zambian Central Statistics Office 2002/03. The report utilized data from WHO, demographic and health surveys as well as the 1990 and 2000 population censuses. The qualitative researches were mainly conducted by the World Bank.

The poverty line was calculated from the Living Condition Monitoring Survey collected in 2002/03 using the CBN method.

### **Poverty lines**

“The notion of a poverty line is conceptually rooted in a “standard of living.” The poverty line is the minimum level of consumption below which people are unable to meet their basic needs for food, housing, and everything else. There is no single correct poverty line, and any poverty line necessarily reflects some measure of judgment about what “basic needs” entails in a particular society.” (p. 36)

The poverty line and the total poverty line are used synonymously in the report reflecting consumption required for food- and non-food needs. ”The non-food share was determined by examining the consumption patterns of a typical household near the poverty line.” (p. 36)

According to the report the core poverty line reflects food needs and is sometimes referred to as the food poverty line or the extreme poverty line. The report stresses that analysis for other countries refer core poverty rates to extreme or severe poverty rates.

“This analysis defines both a total poverty line and a core poverty line equal to the food poverty line.” (p. 38) However because non-food expenditure is a part of basic needs and should be included in the total poverty line, basic food needs are not met if total consumption is equal to the food poverty line. According to the report an alternative core poverty line can be obtained through lowering the caloric requirements from more generous WHO recommendations, to minimum requirements. Non-food expenditure is thus accounted for. Hence “the core poverty rates in this paper can be viewed as poverty rates which account for both food and non-food needs but assume a lower calorie requirement.” (p. 38)

## Poverty rates

In interviews conducted on material deprivation, 56 percent of the population was considered poor in 2002/03. Using the same method, the Central Statistics Office of Zambia calculated that 67 percent of the population was considered poor. The poverty rates are calculated using a poverty line and a lower food or core poverty line. The two poverty lines differ between 56 percent for poverty and 36 percent for core poverty.

## Nutritional cut-off point

Minimum calories required per adult per day were estimated to 2464. This is the unweighted average of calories required for adult men and women in three workload categories. The estimate is based on an average of low to high (medium) active person from the WHO 1985 guidelines. This is the baseline estimate for the food poverty line, the minimum consumption level of food required to meet basic food needs alone. By downsizing the WHO's more generously recommended adequate nutritional requirements to minimum requirements, non-food expenditure can be accounted for in a basic core poverty line. The lower calorie requirement amounts to 1774 kcal based on 72 percent of the WHO's more generous recommendations.

**Table 4: Recommended Calories by Age, Sex and Workload and Adult Equivalents by Age**

Age	Workload	Male	Female	Average of male and female	Implied Adult Equivalent (based on 2464 per adult)
<1		820	820	820	0.33
1-2		1150	1150	1150	0.47
2-3		1350	1350	1350	0.55
3-5		1550	1550	1550	0.63
5-7		1850	1750	1800	0.73
7-10		2100	1800	1950	0.79
10-12		2200	1950	2075	0.84
12-14		2400	2100	2250	0.91
14-16		2650	2150	2400	0.97
16-18		2850	2150	2500	1.0
18-30	Light	2600	2000	2300	
30-60	Light	2500	2050	2275	
>60	Light	2100	1850	1975	
18-30	Medium	3000	2100	2550	
30-60	Medium	2900	2150	2525	
>60	Medium	2450	1950	2200	
18-30	Heavy	3550	2350	2950	
30-60	Heavy	3400	2400	2900	
>60	Heavy	2850	2150	2500	
Adult Averages		2817	2111	2464	

(p. 55)

## Comments

The survey measures the full year using diary and recall methods. Food is measured for 30 days. The poverty line is “determined”. The sample size was 10 000 households (metadata<sup>7</sup>). Although equivalent scales are clearly stated in table 4, they were never used for the caloric requirement estimation. Thus the caloric requirements of 2464 per adult per day refer to the average caloric expenditure of the adult male/female population. The Zambian census of population and housing (2003) states that children 0-14 constituted 45.3 percent of Zambia’s population (rates were higher for rural areas). This implies that the calorie requirements are overestimated and that in almost half of the cases a child (who should not be working) is assigned a caloric requirement seen as generous for an adult engaged in an average of low-high workload value. The gender aspect is considered by estimating energy requirements as the mean of male/female workload suggesting that the same amount of men and women carry the same workload. Thus gender variation in workloads is not taken into consideration. The calorie requirements had a down-sized option in order to account for non-food needs.

## 4.10 Cross-reference scheme of nutritional needs

In the following figure, the national report’s nutritional references were cross-referenced with FAO’s (2011) MDER of the study period 2003-05.

**Table 5: Nutritional cut-off points by National reports and FA/WHO/UNU**

<b>Country</b>	<b>Nutritional Cut-off Point (kcal/person/day)</b>  (National reports)	<b>Food needs (MDER kcal/person/day) 2003-05</b>  (FAO, 2011)
Albania	2288	1910
Bolivia	n.a.	1730
Brazil	2300	1850
Burkina Faso	2283	1730
Cambodia	2100	1750
Dominican Republic	2161	1840
El Salvador	2200	1760
Nicaragua	2200	1770
Zambia	1774 /2464	1750

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<sup>7</sup> Metadata collected from the Central Statistical Office of Zambia

Table 4 shows that almost all national reports had estimated the human energy requirements to be higher than that of the MDER stated by FAO. The Zambian report did however give two estimates, one being a reduced interpretation of the recommendations provided by the WHO, which were considered to be generous. The generous amount of calories was reduced in order to reach minimum nutritional requirements. The nutritional requirements of 1774 kcal/person/day are very close to the MDER estimate, differing by some 25 kcal. The Zambian report therefore acknowledges that a minimal dietary energy requirement is a fair estimate to use in conducting a poverty line. If MDER estimates are considered a viable indicator for food poverty, the supposed overestimation of the energy requirements can cause a shift in the poverty line, subsequently changing poverty rates substantially.

# 5 Discussion

The concept of poverty has varying severity levels. It is not a concept simple to define, let alone measure. Even though the international poverty line sets out to distinguish the poor from the non-poor, as a seemingly dichotomous variable, the foundation reports clearly distinguishes between poor, extremely poor and many levels in between. The old international poverty line would imply that a person with 95 cents a day is poor, but in no real need, if having 1 dollar and 5 cents to live on per day. Yet non-poor households are considered vulnerable with a living standard close to the poverty line. Due to this, the Cambodian report classified household well-being by distinguishing the very-poor and moderately poor from the well-off.

The term “extreme poverty” is inconsistently used. When comparing the national reports to the MDG 1 and the usage of the term “extreme poverty”, it becomes apparent that one means poverty more severe than the other. The national reports use “extreme poverty” meaning barely enough for food needs, while MDG 1 means having barely enough for food and non-food needs. MDG 1 should perhaps state that the goal to “halve extreme poverty” is actually a goal to “halve poverty”, of which extreme poverty is merely a part.

Poverty can be categorized in (at least) two different dimensions; a severity level and a food/non-food dimension.

Level	Food	Food + non-food
Extreme poverty	Extreme food poverty Undernourishment Hunger	Extreme/severe poverty
Poverty	Food poverty	(Moderate) Poverty

Poverty consists of two basic need components that vary in the national reports. The non-food component is calculated differently in the reports resulting in inconsistencies. There is a spectrum ranging from a lower poverty line to an upper poverty line, depending on the calculation method used and the population selected in retrieving non-food figures. The poverty lines consisting of the two components are many: the poverty line, absolute poverty line, full poverty line, official poverty line, total poverty line, general poverty line, baseline poverty line and overall poverty line. The reason as to why there are so many lines referring

to basic needs, may be because national policy requires different target groups for different kinds of social welfare programs. Because they are entitlement programs, it becomes rather difficult to set a specific cut-off point, especially seen as a small shift in the cut-off point significantly changes poverty rates. The national reports show that poverty is no simple cut-off matter, resulting in the many poverty lines that can be found in the reports.

The Zambian report declared that the “extreme poverty line” and the “poverty line” were equal yet contradictory. The prior usually refers to the food component alone which is contradictory as all people allow for non-food expenditure. According to the Zambian report, an alternative core poverty line could be obtained through lowering the caloric requirements from more generous WHO recommendations, to minimum requirements. The report therefore acknowledges that a minimal dietary energy requirement is a fair estimate to use in conducting a poverty line. Depending on the accuracy of census material as well as lifestyle activity level, the nutritional requirements will differ. Most reports did not provide an adequate enough source of information to conclude how accurate the nutritional estimates were. Even when reliable sources were used, the activity level required for a specific lifestyle is open for a wide range of interpretations. The Zambian report calculated nutritional needs on the average of light to high activity level, while FAO, WHO and UNU state that short term relief interventions may be based on the lower range of the activity level scale. The Zambian report presented equivalence scaling which is a crucial procedure that adjusts for differences in the cost of living. The report failed to follow through on this point, when setting the nutritional cut-off point. In the case of Zambia, all children are thus assigned a caloric requirement seen as generous for an adult engaged in an average of low-high workload value.

The new set of food need figures presented by the FAO (2011) show food needs below the ones presented in all national reports. The prior are figures used for hunger alleviation and may not be the most appropriate figures in concluding poverty, if poverty assumes healthy active people with a subsistence lifestyle. Undernourishment can, however, be seen as food poverty and thus be defined as having barely enough for a light active lifestyle. Whichever is more accurate is not for this study to decide. It is, however, important to look into the variation that is prevalent in order to soundly identify people in severe need of help, the poorest of the poor or the extremely poor.

Some reports fall outside the study period of the FAO (2011) food need estimates. Between study periods 1995-97 and 2003-05, the estimates differed between 0 and 70 kcal with an average of 25 kcal between the periods, indicating that changes to the requirements are small from year to year. Between study periods 1990-92 and 2003-05, the estimates only differed between 10 and 80 kcal with an average 31 kcal difference. This indicates that adjustments over a decade are small. The FAO food need document, states that countries with high prevalence of undernourishment has a high proportion of population consuming dietary energy levels close to the cut-off point. The MDER is therefore considered to be a highly sensitive parameter.

Sensitivity in the shift of the poverty line was stressed in the Albanian report. The Albanian report acknowledged that the setting of a poverty line is seldom uncontroversial. It is often the focus of public debate, mostly because it is used as a reference threshold for entitlement programs. A large number of individuals are clustered around the poverty lines making it difficult to set the cut-off points, as even a small shift of the line can have significant impact on the poverty rates. The report further acknowledged that an increase of the poverty line by 10 percent would subsequently increase or decrease the percentage of poor individuals by 25 to 50 percent, depending on the poverty line used. The same phenomenon is illustrated in the cumulative distribution function of per capita consumption. The slope of the distribution curve is relatively steep around the cut-off point making poverty rates drop or increase with a small downward or upward shift of the cut-off point. These variations can affect poverty programs and MDG 1 in truly identifying the people in most need of help. However, if it turns out that food needs are exaggerated, poverty rates will drop significantly thus giving new prospect to the achievement of MDG 1.

In order to achieve a solid international poverty line, the national reports need to be nationally representative and comparable. Brazil is included as baseline material for the new international poverty line, even though the report states that they have no official poverty line. Zambia and El Salvador both have their own poverty lines that differ from that of the World Bank estimates. Burkina Faso is a “snapshot poverty line” not considered as a line that can be compared, due to the occurrence of abnormal events present in the years when data were collected. The other countries are not clear in this respect. Further only the DR’s, El Salvador’s and Nicaragua’s poverty lines were considered non-available, thus probably not used in the international poverty line estimate.

There are many other inconsistencies that were found in the national reports. Some reports measured poverty in urban or rural areas only, as well as used expenditure data or income data depending on what surveys could provide. All these variables add up to an ambiguous international poverty line. Considering the approaching MDG deadline, these inconsistencies are worthwhile following up on in order to improve standard poverty assessment procedures.

## 6 Conclusions

The study concludes that there is a lack of consistency in the use of the “extreme poverty” concept between the selected national reports and MDG 1. MDG 1 uses the international poverty line as an indication of extreme poverty which includes a food component and a non-food component. The international poverty line, however, has a myriad of national lines to select from. These lines range from “extreme poverty” (food poverty) using a minimum or generous food component, to “poverty” including a minimum or moderate non-food component. This leaves a gap for interpretation in identifying the people most in need of help, which is a priority for MDG 1.

The study also shows that the national reports lack important details and reference data, crucial for setting reliable nutritional cut-off points that further indicate basic food needs. A reference activity level, needed to calculate food needs, was specified in only one national report. This reference was however subjected to a wide range of interpretation and did not follow through with important methodological criteria, crucial in setting a sound cut-off point. When cross-comparing the national report’s dietary energy requirements to that of the FAO’s MDER estimates, all reports showed excess in the estimation of food needs. Further, none of the studied countries use a scale of equivalence, saying that all people, young or old, unemployed or hard working, need the same amount of energy intake.

The new and current international poverty line is based on dubious definitions and outdated data with dire reference to population energy needs. Besides the quality problems inherited with sample surveys in general, the factors stated above create obstacles in setting a reliable international poverty line. The nutritional requirements, which constitute a fundamental part of poverty indication, should be based on solid and sufficient reference data. Poverty estimations also need to opt for conceptual and methodological consistency. The international poverty line is a global indicator of major importance. A small shift in the international poverty line changes the poverty rates substantially. This can subsequently alter the course of MDG 1 and the politics that it entails.

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