HNP DISCUSSION PAPER

The Nutrition MDG Indicator

Interpreting Progress

Ritu Chhabra and Claudia Rokx

May 2004

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Health, Nutrition and Population (HNP) Discussion Paper

The Nutrition MDG Indicator
Interpreting Progress

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Paper is an outgrowth of a consultative workshop on "Tracking the Nutrition MDG Indicator"
convened by the World Bank's Nutrition Advisor
in Washington DC, USA, June 2002

Abstract: This paper argues for more nuance in the interpretation of progress towards the Nutrition MDG indicator (halving the prevalence of underweight children, under 5 years old, by 2015). Interpretation of a country's performance based on trends alone is ambiguous, and can lead to erroneous prioritization of countries in need of donor assistance. For instance, a country may halve the prevalence by 2015, but will still have unacceptable high malnutrition rates. This paper analyses which countries are showing satisfactory and unsatisfactory progress using the Annual Rate of Change (ARC), and then introduces the WHO-classification of severity of malnutrition in the analysis to provide more nuance. It highlights that a little less than half of the Bank's client population is likely to halve underweight by 2015. Although the paper uses national data only, it flags the risks and recommends that countries take regional disparities into their needs-analysis. The paper also argues for more attention to the other important nutrition indicators, stunting and micronutrient deficiencies, which remain enormous problems, and briefly discusses solutions to reducing underweight malnutrition.

Keywords: Millennium Development Goals (MDGs), Nutrition, Monitoring and Evaluation, Data

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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FOREWORD

Malnutrition plays a key role in over half of child deaths in developing countries. To achieve the Millennium Development Goals (MDGs), adopted at the UN Millennium Summit in 2000, we must address the challenge of reducing malnutrition and improving child health as an integral part of poverty reduction efforts.

Nutrition underlies achievement for most of the health MDGs. This paper provides critical supporting evidence in the attainment of the goals, especially the first. This goal, which addresses extreme poverty and hunger, uses prevalence of underweight children (under 5 years of age), as an indicator. The paper, which came about as an outgrowth of an expert workshop consultation at the World Bank in June 2002 to consider using underweight as the MDG indicator for Nutrition, examines and interprets the data and progress that countries have made towards halving underweight by 2015. It finds that progress towards achieving the Nutrition MDG indicator, measured as an annual rate of change of at least minus 2.7%, appears satisfactory in forty-one countries, representing 39.5% of the developing world's population. But, what is meant by satisfactory progress? Is halving underweight malnutrition really satisfactory, specifically for countries that have unacceptably high rates of underweight children? There are a number of countries that, even after halving prevalence by 2015, will still have unacceptably high malnutrition rates, and a little less than half of the Bank's client population is likely to halve underweight by 2015. What about the countries that do not have positive trends, or lack data? This paper highlights and examines these issues.

The country data and analysis by country and region, and arguments for a more nuanced interpretation of progress contained within this publication, will be very useful to country teams and operational staff as they monitor and support the progress their clients are making towards achieving the goals. This will serve as a very handy reference for many.

We welcome reader's comments

Alexander S. Preker

Chief Editor, HNP Publications
World Bank

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GLOSSARY

AFR	Africa Region
AIN	Atención Integral a la Niñez
ARC	Annual Rate of Change
BASICS II	Basic Support for Institutionalizing Child Survival II Project
DHS	Demographic Health Surveys
EAP	East Asia and the Pacific region
ECA	Europe and Central Asia region
IFPRI	International Food Policy Research Institute
IMCI	Integrated Management of Childhood Illness
MDG	Millennium Development Goal
NCHS	interNational Center for Health Statistics
LAC	Latin America and the Caribbean region
LBW	Low birth weight
LSMS	Living Standards Measurement Survey
MENA	Middle East and Northern Africa
MICS	Multi-Indicator Cluster- Survey
PROGRESA	Programa Nacional de Educación, Salud y Alimentación
SAR	South Asia region
SSA	Sub-Saharan Africa region
UNICEF	United Nations Children's Fund
WDI	World Development Indicators
WFFC	World Fit for Children
WHO	World Health Organization

EXECUTIVE SUMMARY

Adequate trend data to determine progress towards achieving the Nutrition MDG indicator is available for 71 countries worldwide. A total of 35 countries do not have any data at all, and should give urgent attention to the monitoring of their progress towards the Nutrition MDG indicator. These 35 countries represent only about 4.5% of the population in developing countries, here defined as the World Bank client countries. For the remaining 46 countries, representing about 15% of the Bank's client population, the current available data is insufficient to assess trends, and need updating.

Progress towards achieving the Nutrition MDG indicator, measured as annual rate of change of at least minus 2.7%[1], appears satisfactory in 41 countries, representing 39.5% of the developing world's population. But, what is meant by satisfactory progress? Is halving underweight malnutrition really satisfactory, specifically for countries that have unacceptably high rates of underweight children? There are a number of countries that, even after halving prevalence by 2015, will still have unacceptable high malnutrition rates (for example, Bangladesh has a current underweight prevalence rate of 60% in children under the age of five). The paper also highlights that a *little less than half of the Bank's client population is likely to halve underweight by 2015.*

To address the concern of judging a country's performance based solely on the annual rate of change, the WHO-classification of severity of malnutrition is used to juxtapose progress (annual rate of change) with current prevalence rates. All countries that have a current underweight malnutrition rate of 20% or higher are considered unsatisfactory in terms of their progress to reducing malnutrition sufficiently. Using this method of interpreting trends, 37 countries, representing about 35% of the population in developing countries, are considered *low priority* for action taking, versus 31 countries considered here to be *high or very high priority*, and another 12 countries considered as *medium priority*, in total representing 50% of the population in developing countries.

There are also other concerns with using underweight as the Nutrition MDG indicator. Countries may have low underweight malnutrition prevalence, or may have already halved prevalence rates since the early 1990s, yet have very high stunting rates and micronutrient deficiencies. These are of major concern for good nutrition throughout the life-cycle, but are not included in the analysis of progress towards the MDGs. There is a high risk that stunting and micronutrient deficiencies will be ignored as serious development problems, if development agencies only regard reaching the MDGs as their goal.

This paper argues for a more nuance interpretation of progress, including using the WHO-classification of current severity of malnutrition in the measurement of progress. Countries are grouped following different priorities, high to low priority for action to reduce malnutrition.

The paper also argues for more attention to the other important nutrition indicators, stunting and micronutrient deficiencies, which remain enormous problems. The paper does not include an analysis of those data, it merely reports them in annexes, but strongly recommends countries take them into account and carry out more detailed analysis.

[1] Minimum rate required to halve malnutrition by 2015 is minus 2.7 % annually.

I. Introduction and Background

1.1. Introduction

The World Bank has made a commitment to using the Millennium Development Goals (MDGs) as a guide in formulating policies and programs, and assessing their effectiveness. Eradicating extreme poverty and hunger is the first goal. Between 1990 and 2015, the first two targets are to halve the proportion of people living on less than $1 a day, and to halve the proportion of people suffering from hunger. The key indicator for the alleviation of hunger is 'the prevalence of underweight children (under five years of age)[2].

This paper is an outgrowth of a consultative workshop on "Tracking the Nutrition MDG Indicator", convened by the World Bank's Nutrition Advisor to respond to the goals of alleviating hunger and improving monitoring of progress. The workshop itself was held in response to concern raised about the availability of data for the Nutrition MDG indicator, particularly the time series needed to measure progress. This paper addresses the issue of data availability for effective monitoring of the Nutrition MDG indicator. It reports on the status of countries regarding data availability for monitoring progress and then reviews the progress itself. In addition to underweight, other nutrition indicators are discussed with the objective of providing a more distinct picture of where countries are regarding the nutritional status of children.

The purpose of this paper is to draw attention to the risks posed by using an ambiguous measurement of progress towards reaching goals that have been adopted as guidance by development agencies. Many countries with high needs for action and increased budget allocations risk losing out if development agencies only use these measurements for their prioritization. This paper proposes a more nuance interpretation of progress, and a method to assess priority needs.

After a brief background, a detailed overview of available data on underweight and an analysis of their adequacy to monitor progress is presented. It includes trends and current status by region. This is followed by a review of progress, measured as 'annual rate of change', towards achieving the Nutrition MDG indicator. The definition of progress is critically reviewed in response to concerns raised at the consultative workshop of June 2002. The WHO classification of severity of malnutrition is then included to propose a more nuance measurement of progress. Last, the paper presents a need of a prioritization method using both measurements.

This paper only briefly alludes to the determinants of malnutrition, and does not elaborate on methods of reducing malnutrition. This is part of the ongoing work in the Health, Nutrition, and Population Department of the World Bank, and a major effort to cost the interventions needed to achieve all MDG targets is being spearheaded by the Human Development Network.

[2] The other is reducing the proportion of the population consuming less than the minimum daily caloric requirement.

1.2. Background

The Millennium Development Goals are a set of internationally agreed goals to which countries and institutions have committed themselves to reaching by 2015. The goals were formulated at the Millennium Summit in September 2000, where 191 nations reaffirmed their commitment to eradicating poverty and attaining sustainable development. As a framework, eight broadly stated Millennium Goals with 18 specific targets were accepted for measuring development progress (Annex A). Couched in precise, measurable terms, they include quantitative goals, time-bound targets, and numerical indicators for monitoring progress and ensuring accountability. The process is intended to help refocus strategies on outcomes, connect actions to outcomes, enable development of informed policymaking and programming, strengthen the institutions involved, and build national capacity for monitoring development.

Many institutions and bilateral organizations are now using these development goals as a common framework to guide their policies and programs and assess their effectiveness. The goals will help mobilize national and international partners into action and forge new alliances and partnerships. The World Bank, for example, has made achievement of these Millennium Development Goals a central focus of its activities by designating them as a "corporate priority." Reducing the prevalence of underweight children (under five years of age), by half is one of the indicators of the Millennium Development Goals.

Reducing the prevalence of underweight in children is not only an indicator, but also a goal in itself. Raising the nutritional status of children, and the entire population, will further other goals such as lowering childhood mortality and expanding universal primary education. A well nourished child is more likely to stay in school, become educated, and improve on lifetime earnings due to better mental and physical capacity. A well-nourished population will be instrumental in reducing poverty. At the same time, progress toward other goals helps improve nutrition, since many of the intermediate processes directed toward achieving them also helps improve the nutritional status of children.

The question is how to halve underweight by 2015. Income growth has a positive impact on nutritional status, but experience demonstrates that childhood growth and the reduction of malnutrition can be accelerated with direct nutrition interventions and programs. Income growth is a necessary, but insufficient, factor in reducing the prevalence of malnutrition. For example, Haddad et al (2003) found that, at both the national and household levels, income growth has a steady, but slow, impact on malnutrition. According to their estimates, when holding community and household infrastructure constant, countries that achieve a strong per capita income growth (5% a year), have projected declining malnutrition rates (measured by underweight), of 20% by 2010 and by more than 30% by 2020. If income grows only half as fast (2.5%) a year, the projected reductions are halved. Thus, even with impressive gains in income growth, underweight malnutrition is unlikely to be halved by 2015.

Human resource development to promote well-informed, healthy and empowered people, obviously leads to improved nutritional status of a population. Investing more resources in health and education will indirectly improve nutrition, and in particular will have beneficial effects on the next generation. But again, improving malnutrition through investing in underlying determinants only is unlikely to halve underweight malnutrition by 2015.

Direct nutrition interventions are needed to speed up the reduction in malnutrition. The impact of direct nutrition interventions, or nutrition programs, has been known for some time. Although to date only a few evaluations have been carried out in a rigorous manner so that any reduction in underweight can be attributed to program interventions, there is reasonable evidence that improvements of at least 1-2 percentage points per year can be achieved with large-scale nutrition programs (Gillespie, Mason and Martorell, 1996).

Several types of nutrition programs have been shown to reduce malnutrition effectively. Some examples include transfer programs, such as food stamps, and emergency or relief food distribution programs which show positive, albeit, modest impact on malnutrition reduction. The Mexican program PROGRESA combines income transfers with supplemental feeding and health care delivery to reduce malnutrition (Skoufias et al, 2002). Community based child growth promotion programs have demonstrated encouraging results. For example, the Tamil Nadu Integrated Nutrition Project (Berg 1987), the Tanzania Iringa Nutrition Project (Gillespie et al 2003), Thailand's National Nutrition program (Heaver and Kachondam 2002), and recent experiences with the Community Nutrition projects in Senegal and Madagascar, the AIN program in Honduras (Van Roekel et al, 2002) all show positive impact on the nutritional status of targeted beneficiaries of the programs.

II. Data Availability to Monitor Underweight Effectively

At the of 2001, the WHO Global Database included 801 nutrition surveys since 1960: 370 national surveys from 133 countries and 431 sub-national surveys from 152 countries[3]. To determine whether countries are making adequate progress toward the target of halving malnutrition rates by 2015, at least two data points are needed between 1990 and the present. To determine whether they reach the target by 2015, at least three data points are needed between baseline and endline, as determined during the expert consultation in June 2002 (see Annex B).

Several problems were noted during the consultations as to reasons why there is a lack of data to monitor the nutrition MDG. First, not all countries have underweight data for the baseline year 1990. However, since all underweight data are based on actual surveys, the consultation group decided against extrapolating or filling in estimates and trends between data points. Instead, it was decided to extend the baseline reference point to include data from surveys between 1987 and 1993. Second, although many countries have the two requisite data points, not every country has the required four years between the surveys to allow for changes in nutritional status to be manifested on a population basis (Annex C).

Based on the above criteria, analysis of underweight trends for children under the age of five, and in some cases under the age of three[4] can be done for a total of 71 countries. Another 46 countries have insufficient data i.e., only one data point, or data from surveys less than four or more years apart. Thirty-five countries have no data at all.

Although this quick review presents (at first sight), a large number of countries without data, a more positive picture emerges when considering *data availability by population coverage*. The 71 countries for which data are available represent about 80% of the Bank's client population[5], and those with insufficient data represent about 15.5% of this population[6]. Table 1 provides the details by region. A list of those countries appears in Annex D.

[3] WHO and UNICEF are jointly responsible for annual nutrition indicator reports to the UN secretary general.
[4] Countries for which trend estimates for underweight children under the age of three was included after recalculation: SSA: Cote D'Ivoire, Madagascar, Mali, Tanzania, Uganda; ECA: Kazakhstan; SAR: India and Sri Lanka
[5] Bank's client population are population in countries as listed in the WDI.
[6] Countries listed in the *World Development Indicators* (WDI, 2002)

Table 1: Data Availability to Track Progress towards Halving Underweight in World Bank Client Countries

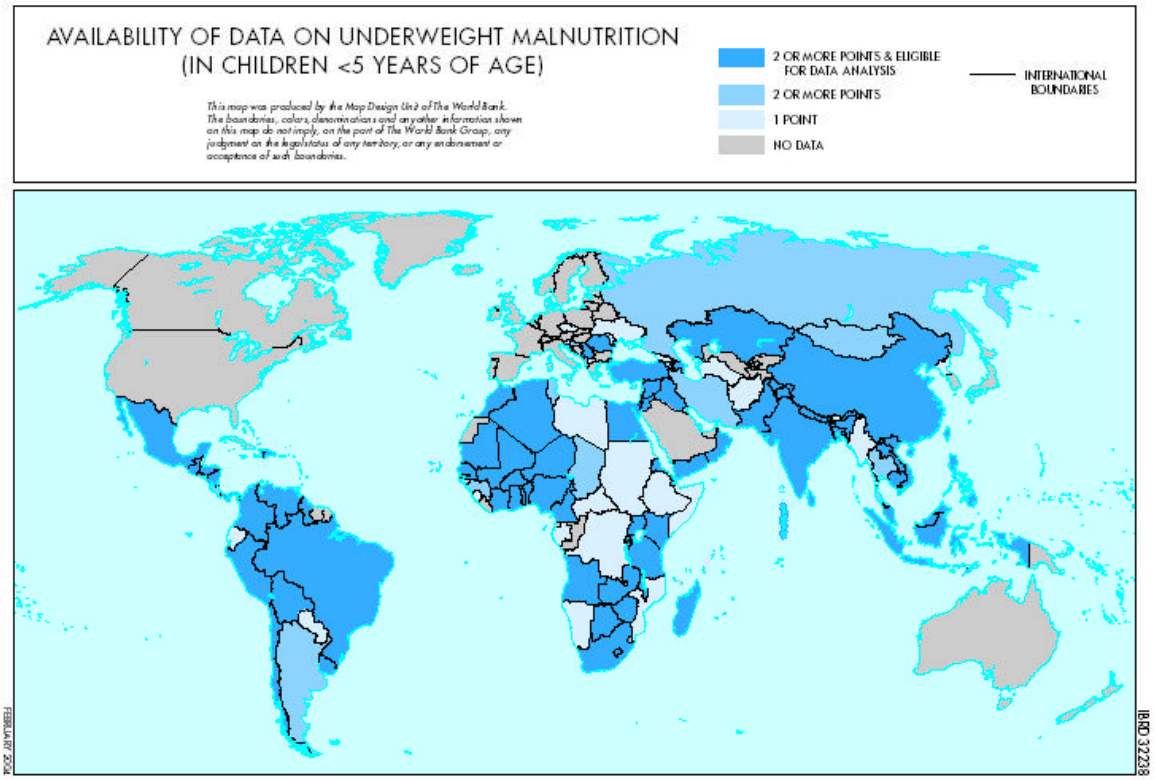
Region	Bank client population (million)	Population in countries with MDG tracking data (million)	%	Population in countries with trend data points, but not fulfilling MDG tracking requirements (million)	%	Population in countries with only one data point (million)	%	Population in countries with no data (million)	%
AFR	687.9	466.8	**67.9**	15.8	**2.3**	197.2	**28.7**	8.0	**1.1**
MNA	306.7	196.3	**64.0**	75.3	**24.6**	9.9	**3.2**	25.3	**8.2**
ECA	476.5	125.7	**26.4**	154.8	**32.5**	75.9	**15.9**	120.0	**25.2**
SAR	1352.8	1324	**97.9**	0	**0**	28.9	**21.3**	0	**0**
EAP	1607.8	1417.4	**88.2**	64	**4.0**	72.8	**4.5**	53.6	**3.3**
LAC	526.6	452.4	**85.9**	41.8	**7.9**	20.2	**3.8**	12.3	**2.3**
Total[a]	**4958.3**	**3982.6**	**80.3**	**351.7**	**7.1**	**404.9**	**8.2**	**219.2**	**4.4**

AFR Africa; EAP East Asia and Pacific; ECA Eastern Europe and Central Asia; LAC Latin America and the Caribbean; MENA Middle East and North Africa; SAR South Asia Region.
a. Includes the total population of countries listed in World Development Indicators, 74 % of total world population.
Source: Authors' own calculations. Population estimates derived from World Development Indicators (2002)

According to these estimates, another 46 countries could monitor their progress towards the goal by conducting an additional survey[7]. Map 1 shows countries colored dark blue have 2 or more data points but not 4 or more years apart, and countries colored light blue have only one data point. Countries that have only one data point and no survey planned in the near future, need to take urgent action so they can monitor their progress.

[7] Macro-International, DHS, and UNICEF, through the MICS, plan new surveys to keep information on countries up to date and assure endline data availability. Macro-International plans to complete 20 DHS in different countries by 2004. UNICEF will conduct MICS surveys as a part of its mid-decade assessment of progress toward the World Fit for Children goals and monitoring of the UNICEF Medium Term Strategic Plan (2000–2005), and may conduct up to 60 additional country surveys, as needed.

Map 1: Availability of Data on Underweight Malnutrition (in children <5 years of age)



III. Current Status and Likelihood of Halving Underweight by 2015

3.1. The Challenge

Halving the prevalence of underweight in five-year-olds by 2015 presents an enormous challenge to countries, as well as development agencies. Over the past decade, underweight prevalence in this age group has decreased from 32% to 28% in developing countries (UNICEF 2001). Meeting the Nutrition MDG indicator entails further reducing the global prevalence of underweight between 12 % and 16% by 2015.

The global figure obscures differences across regions, and not every region is not making good progress towards reducing malnutrition. The situation is most problematic in Sub-Saharan Africa, likely the only region that will not reach the MDG for nutrition. However, much progress has been made in East Asia and the Pacific and in the Latin America regions, where the prevalence of underweight in children under the age of five declined from a regional average of 22% to 17%, and from 11% to 8%, respectively between 1990 and 2000. In South Asia, underweight prevalence declined from a regional average of 54% in 1990 to 46% in 2000, a decline of 0.8 percentage points a year.

Yet, nearly 150 million children in developing countries remain malnourished, and 78% of them live in South Asia, where even if they meet the Nutrition MDG indicator, underweight will remain high. The slow progress in reducing underweight malnutrition, in comparison to other social indicators, over the last two decades demonstrates the magnitude of the challenge for many countries. However, it is possible, as demonstrated by several countries. According to current estimates, Romania, Dominican Republic, and Venezuela have already met the goal and many other countries are making more than adequate progress.

3.2. What is meant by Adequate Progress

What is meant by *adequate progress?* The Nutrition MDG indicator calls for halving the prevalence of underweight children (under fives of age), by the year 2015, using 1990 as the baseline. Will all countries be viewed equally? Some countries already have underweight rates below 10%,[8] the WHO cut-off point for defining underweight as a public health problem. On the other hand, countries like India and Bangladesh, starting at 60% malnutrition in 1990, will have remaining high rates even after halving prevalence. Should India and Bangladesh be considered good performers if they meet the goal of halving their underweight rates by 2015, while still one third of their under-five children remain underweight? What about a country like Brazil, where only 7% of the children under the age of five are underweight, but is making slower progress towards achieving the goal to halve the prevalence to 3%. Should Brazil be infused with more resources to deal with the issue, versus investing more resources in Bangladesh?

To respond to these concerns, the consultation group that met in June of 2002 concluded that the WHO classification[9] for underweight as a public health problem should be taken into account (Table 2).

Table 2: WHO Classification for Assessing Severity of Malnutrition by Prevalence Ranges Among Children Under Five Years of Age

	Severity of malnutrition by prevalence ranges (percent)			
Indicator	*Low*	*Medium*	*High*	*Very high*
Stunting	<20	20–29	30–29	>40
Underweight	<10	10–19	20–29	>30
Wasting	<5	5–9	10–14	>15

Source: WHO 1995

Even though the use of the NCHS standards, that inform the WHO classification, has questions about its validity in diverse populations, there is broad consensus of its use until new data is available (Box 1).

[8] Classification of Malnutrition rates to serve as 'Trigger-levels' for public health decisions. Experience with surveillance has corroborated the usefulness of identifying prevalence ranges to assess the severity of a situation as the basis for making public health decisions. For example, when 10 percent of a population is below the –2 S.D. cut-off for weight-for-height, is that too much, too little, or average? Trigger-levels are intended to help answer this question by giving a guideline for establishing the seriousness of a public health situation. Such classifications are helpful for summarizing prevalence data and can be used for targeting when establishing intervention priorities. A 2.3 percent prevalence of underweight would be found in a normal population distribution.

[9] The prevalence ranges are those currently used by WHO to classify levels of stunting, underweight, and wasting. This largely arbitrary classification simply reflects a convenient statistical grouping of prevalence worldwide. The designations of a prevalence as "low" or "medium" should be interpreted cautiously and not be taken as grounds for complacency. Since only 2.3 % of the children in a well-nourished population would be expected to fall below the cut-off, the "low" weight for age group, for example, includes communities with up to four times that expected prevalence, and the "medium" group, communities with up to an eightfold excess.

Box 1: Child Growth and Use of International Growth Standards

Child Growth is measured in anthropometrical terms: weight for age, height for age, and weight for height. For comparability purposes, how child growth data compares to children across countries, the National Center for Health Statistics (NCHS) growth reference, also referred to as the NCHS/WHO international reference growth standard, is used. These growth curves were formulated in the 1970s, using growth data from healthy well-nourished US children. Evidence suggested, that growth patterns of well-fed , healthy pre-school children from various ethnic backgrounds, compared well with these growth charts, and thus they were adopted by the WHO, in the late 1970s, for use as an international standard..

The use of the NCHS/WHO International growth standards has, however, been challenged in the recent years, specifically in regard to its applicability for assessing the growth of breastfed infants. Recent research conducted by WHO suggested that the growth pattern of healthy breastfed infants differs significantly from the international growth reference. Its use could potentially lead to flawed interpretation of growth of the child, and interfere with the appropriate counseling and nutritional management of the infant and young child. If an infant is assessed to be growing too slowly, based on international growth standards, they may be counseled to be taken off breast milk, and be introduced to solid foods much too early, which often has adverse consequences for the health and nutritional well-being of infants.

There is however evidence to support that the International references still hold ground. According to conclusions of a research study conducted by Bhandari et al (2000), with regard to the anthropometric indicators, children belonging to a higher socio-economic status compared well to the NCHS/WHO reference population. The sub-population with higher parental education had even better growth.

An international effort is currently underway to develop a new international growth reference, undertaken by the WHO Multi-center Growth Reference Study. Until the new reference is developed, the NCHS/WHO growth reference curves will remain the reference values recommended for international use, as maintained by WHO.

Source: Bhandari et al (2002), WHO (1994)

Countries that have less then 3% underweight among children under five, and a stunting rate of less than 20%, should not be considered a problem country or a priority candidate for urgent action for making progress towards the MDGs.

Further, rather than focusing only on outcomes, the adequate rate of change was deemed a more appropriate measurement of progress. Halving the prevalence of underweight between 1990 and 2015 means that all countries have to achieve a minimum of minus 2.7% (calculated using geometric average), annual rate of change (decrease). In the following sections of this paper, country classifications according to WHO categorization of severity of malnutrition, and the annual rate of change (ARC), based on current data, are presented and used jointly as the basis for positioning the likelihood of a county's reaching the nutrition objective.

However, the method proposed in this paper does not address the often-cited problem of ignoring other nutrition indicators, such as, stunting rates, low birth weight and micronutrient deficiencies. Many countries have high stunting rates, even with relatively low underweight rates. Stunting is the indicator that best reflects long-term cumulative effects of inadequate diet, recurrent illness, or both, and is commonly used as a poverty indicator. Height-for-age is an indicator of past under-nutrition or chronic malnutrition, and cannot measure short-term changes in malnutrition. It is associated with a number of long-term factors, including chronic insufficient protein and energy intake, frequent infection, sustained inappropriate feeding practices, and poverty. Stunting, as an indicator, can be used for evaluation purposes but is not suitable for monitoring, as it does not indicate short-term change. Stunting is not used as the Nutrition MDG indicator because it has less trend data available. However, it would be advisable

for countries to include stunting in their nutrition situation analysis, and for development agencies to remain vigilant.

The same suggestion applies to low birthweight incidence rate, another important indicator of nutritional status. Low birthweight is defined as a weight of less than 2,500 grams at birth. It is estimated that at least 17 million infants are born every year with low birthweight. This represents about 16% of all newborns in developing countries. The internationally recommended cut-off levels, of 15% LBW or higher, should trigger public health action. South Asia has the highest incidence of LBW, with one in every four babies born low birthweight. Annex E provides data on low birthweight by country.

The consultation group also considered micronutrient deficiencies, in particular Vitamin A, iodine and iron. Although very little trend data is available for these deficiencies, many countries and organizations include micronutrient surveys in their health surveys and national surveys. Annex F provides available data on iron-deficiency among pregnant women.

Therefore, additional criteria are strongly recommended, especially for countries with a low prevalence of underweight malnutrition. Countries that do not have underweight as a public health problem can still have many stunted and micronutrient-deficient children that need urgent attention. Bolivia can be used as an example, as outlined in Box 2.

Box 2: Nutrition in Bolivia: An example

Underweight malnutrition in Bolivia is low, 8% in 1998, yet stunting rates are high. Twenty seven percent of Bolivian children under the age of five are low-height-for age. Despite the government's large investments to improve nutrition and food security, the situation has not improved. The World Bank study *Poverty and Nutrition in Bolivia* illustrates the situation and analyzes underlying causes. Malnutrition disproportionately afflicts the poor, rural populations, indigenous groups, and households without access to water and sanitation and where women have little education. Reduction in malnutrition has not kept pace with income growth. No programs proven effective in reducing malnutrition have been adopted. Bolivia has spent enormous amounts of money on school feeding and clinic-based growth promotion, an estimated $67 million by the government and nongovernmental organizations in 2000 alone. However, these resources are largely misdirected, spent on poorly designed and inefficiently delivered programs that are not targeted at the most needy. Community-based growth promotion, communication for behavior change in nutrition, and school health and nutrition programs have all shown significant results in improving the nutrition situation of children and mothers. These should be emphasized to address the situation. The study suggests action on several fronts: (i) Develop a national strategy and functional leadership; (ii) Make accurate and practical nutritional knowledge widely available; (iii) Give priority to effective interventions delivered to those in greatest need; (iv) Improve program design at the local level, particularly programs in water and sanitation, rural development, roads, education, and credit, which can have a great impact on nutrition; (v) Correlate nutrition with the poverty issue instead of treating simply as a health issue.

Source: World Bank (2002).

In addition to high stunting rates, nearly 54% of Bolivia's pregnant women are anemic. These are both issues that Bolivia should consider when setting priorities. Micronutrient deficiencies, specifically iron-deficiency anemia in women and children, are likely to be major problems, even in countries with low underweight and stunting rates. Annex F lists available data on low birth weight, and iron deficiency anemia in pregnant women, by country.

3.3. Progress Measured as Annual Rate of Change (ARC)

The geometric average was used to calculate the annual rate of change (ARC), for countries with baseline data between 1987 and 1993, using two data points with at least four years between the two points (Annex C). ***In general, the ARC needed to reach the target of halving underweight rates by 2015, is minus 2.7%.*** The results are presented in Table 3.

Table 3: Progress Measured as Annual Rate of Change by Region

	Satisfactory[10] (ARC [3] -2.7% or already halved underweight)	**Marginally Satisfactory (ARC of –2.4% to –2.69%)**	**Marginally Unsatisfactory (ARC –2.0 to –2.39%)**	**Un-satisfactory (ARC < -2.0%)**	**Highly Unsatisfactory (increasing under-weight rates)**	**Insufficient or no data[11]**
Worldwide						
Countries	41	2	3	15	20	71
Population (million)	1956.2	92.5	318.4	1508.7	335.2	747.4
Population (%)	*39.5%*	*1.9%*	*6.4%*	*30.4%*	*6.8%*	*15%*
Sub Saharan Africa						
Countries	6	0	1	6	13	21
Population (million)	34.1	0	8.2	210.7	213.8	221.1
Population (%)	*5%*	*0*	*1.2%*	*30.6%*	*31.1%*	*32.1%*
East Asia and Pacific						
Countries	4	1	0	3	0	14
Population (million)	1239.2	80.5	0	97.9	0	190.2
Population (%)	*77.1%*	*5.0%*	*0*	*6.1%*	*0*	*11.8%*
Europe and Central Asia						
Countries	11	0	0	0	1	16
Population (million)	337.5	0	0	0	8.2	130.8
Population (%)	*70.8*	*0*	*0*	*0*	*1.7%*	*27.4%*
Latin America and the Caribbean						
Countries	13	1	1	2	1	13
Population (million)	254.8	12	174.5	12.1	2.9	70.3
Population (%)	*48.3%*	*2.3%*	*33.1%*	*2.3%*	*0.6%*	*13.4%*
Middle East and North Africa						

[10] This column also includes countries that have a very low prevalence of underweight (≤ 3%) in children.

[11] This column excludes the countries that have a ≤3% prevalence of underweight in children, as per the latest data available from these countries. The low rate of prevalence (<3%) is considered normal according to the normal distribution curve, and qualifies these countries to be 'highly satisfactory' performing countries for the purposes of the table above.

Countries	7	0	0	0	4	5
Population (million)	90.7	0	0	0	110.0	106.1
Population (%)	*29.5%*	*0*	*0*	*0*	*35.9%*	*34.6%*
South Asia						
Countries	0	0	1	4	1	2
Population (million)	0	0	135.7	1188.0	0.3	28.9
Population (%)	*0*	*0*	*10.0%*	*87.8%*	*0.0%*	*2.1%*

Source: Authors' own calculations. Population estimates: WDI 2002

Cut-offs were made to classify countries into groups based on their current rate of progress towards the Nutrition MDG indicator. The cut-offs may seem too strict given the global experience with underweight reduction, which has been much slower than now proposed for 2015. However, it is precisely for the reason of creating awareness of high needs that strict interpretation is used. For the purposes of this report, countries are classified as follows:

Current Annual rate of change (ARC)	***Performance Status with regard to the MDG***
ARC of –2.7 percent or more	Satisfactory (S)
ARC of –2.4 to –2.69 percent	Marginally Satisfactory (MS)
ARC of –2.0 to –2..39 percent	Marginally Unsatisfactory (MU)
ARC of less than –2.0 percent	Unsatisfactory (U)
ARC positive	Highly Unsatisfactory (HU)
Insufficient / No data	Monitoring assistance required

Worldwide:

At the global level, 6 countries have already halved their underweight malnutrition rates: Kazakhstan, Romania, Dominican Republic, Jamaica, Mexico and Venezuela. Ten other countries with less than 3% prevalence are also included in the category of satisfactory performance. Another 25 countries are likely to halve underweight malnutrition rates, based on their current trend. Together these 41 countries represent about 40% of the Bank's client population. Another 2% show satisfactory progress towards reaching the MDGs. *A little less than half of the Bank's client population is likely to halve underweight by 2015*. For a complete list of countries described by progress towards attaining the nutrition MDG, see Annex H.

But that leaves the other half unsatisfactory, or without data to make any statements. Thirty-eight countries, representing about 43% of the Bank client population, have an unsatisfactory rate of progress towards reaching the malnutrition MDG (ranging from marginally unsatisfactory to highly unsatisfactory). Seventy one countries, representing 15% of the population in developing countries, have insufficient or no data at all. Data collection and monitoring should be designated as priority action for those countries, especially where other human development indicators indicate a risk of high malnutrition (Annex D).

Sub-Saharan Africa (SSA):

In Sub-Saharan Africa, the progress towards halving malnutrition rates has fared the worst. In addition to lack of attention to nutrition and nutrition program implementation, SSA has suffered from natural disasters, many wars and the devastating pandemic of HIV/AIDS, which all have had negative impact on nutrition improvement. SSA is the region with the highest number of countries with increasing malnutrition rates. *Only a small fraction, 6 countries, representing only 5% of the population Sub-Saharan Africa, are making adequate progress* (>-2.7% ARC) towards attaining the MDG. Almost 63%

of the population in Africa lives in countries making unsatisfactory progress. Thirteen of these countries, accounting for about 31% of the population in SSA have alarming trends: increasing rates of prevalence of underweight in children. Twenty-one of the 47 countries, accounting for 32% of the population, do not have enough data to estimate progress toward halving underweight.

Only the Gambia, Botswana, Mauritania, Togo, Ivory Coast and Benin are likely to halve underweight malnutrition prevalence by 2015, if current trends continue.

East Asia and the Pacific (EAP):

Three of the 22 countries in the East Asia and Pacific (EAP) region are likely to halve underweight malnutrition among children under five years of age by 2015. The 3 countries, China, Indonesia and Malaysia, along with Samoa (which has <3% prevalence of underweight malnutrition), together represent 77% of the region's total population. EAP is making the best progress in reducing malnutrition. Vietnam is making only marginally satisfactory progress towards the MDG. Cambodia, Lao PDR, and Philippines, have declining prevalence, but rates are too slow to achieve the goal. Fourteen countries in the region do not have enough data to determine trends. These include most of the small islands such as Fiji, Kiribati, and Papua New Guinea, and larger countries such as the Koreas.

Europe and Central Asia:

In the Europe and Central Asia (ECA) region, two countries, Kazakhstan and Romania, have halved underweight malnutrition in children. Based on current trends, Turkey is also likely to meet the MDG. Yugoslavia, the Russian Federation, Croatia, Georgia, Czech Republic, Moldova, Ukraine and Armenia are countries included in the category of satisfactory performance since they have low rates (<3%) of underweight malnutrition. These 11 countries represent nearly 71% of the regions population. Of the other countries in the region, data were either completely lacking or insufficient for 16 countries, representing about 27% of the region's population. Azerbaijan is a country of concern for the region since it presents increasing rates of underweight prevalence and needs urgent attention. However, the main priorities for the ECA region are to increase data collection and monitor progress toward the MDGs. This region also has other nutrition-related issues of concern, for instance, high stunting rates in the Kyrgyz Republic (25%) and Uzbekistan (31%), and anemia is highly prevalent in all countries. Iodine deficiency also remains, and obesity is an emerging issue that is likely to be high in some countries of this region (Rokx, Galloway and Brown, 2002).

Latin America and the Caribbean:

In the LAC region, 13 of the 31 countries, representing about 48% of the region's population are making adequate progress towards attaining the Nutrition related MDG. Four of these 13 countries, Dominican Republic, Jamaica, Mexico and Venezuela, have already reached the target. Chile and Costa Rica have less than 3% prevalence of underweight malnutrition and are so are included in this category. The 7 other countries, Bolivia, Colombia, El Salvador, Guyana, Haiti, Peru, and Uruguay, are likely to reach the goal by 2015. Guatemala is making only marginally satisfactory progress. Brazil, Honduras and Nicaragua are not making enough progress, and Panama presents increasing rates of underweight prevalence. Panama has relatively low national level rates but very large disparities within the population, and has high stunting rates among the indigenous population. In LAC, 13 countries, representing about 13% of the region's population, have insufficient data to determine trends. Data collection and monitoring should be a priority for these countries.

Middle East and Northern Africa:

In the MENA region, 6 countries, Algeria, Djibouti, Jordan, Morocco, Oman, and Syrian Arab Republic, have made considerable progress toward reducing the prevalence of underweight malnutrition, and based on current trends are likely to reach the nutrition related MDG. Lebanon has low prevalence of underweight malnutrition in children, and is thus also included in this category. Together, these 7 countries represent about 30% of the region's population. MENA, however, presents a bi-polar situation. With some countries faring very well and others far from being on track. Four countries, with 36% of the region's population, present worrisome trends with increasing rates of underweight prevalence in young children. These countries, Egypt, Bahrain, and in particular, Iraq and Yemen, urgently need intensive efforts to reduce underweight in children. In Yemen, 46% of children under the age of five were underweight in 1997, and the trend is still rising. The remaining 5 countries, about 35% of the population in MENA, do not have sufficient data to determine trends, and so need to strengthen data collection and monitoring efforts.

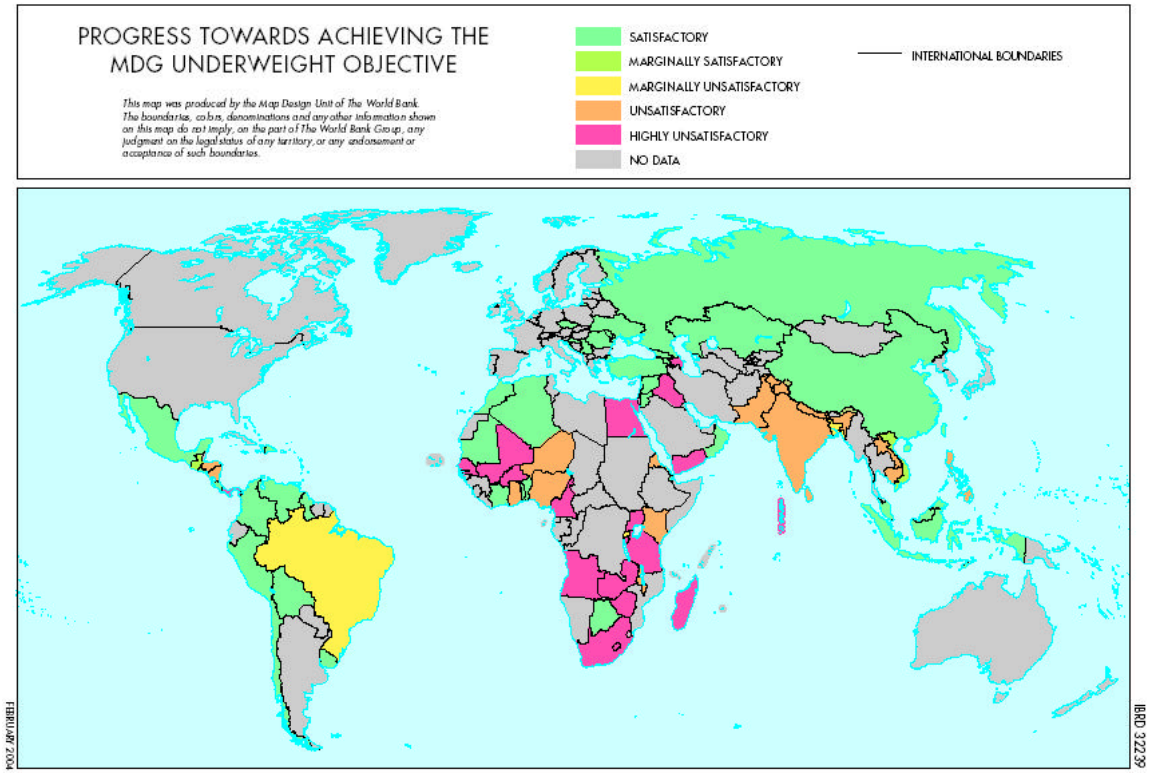
South Asia:

South Asia (SA) is not making good progress towards achieving nutrition related MDG by 2015. Bangladesh is making marginally unsatisfactory progress, and India, Sri-Lanka, Pakistan, and Nepal are making unsatisfactory progress. These five countries, home to the majority of the South Asian population, at current trends are unlikely to achieve the nutrition-related MDG. The Maldives needs urgent attention since the prevalence of underweight malnutrition is increasing. Afghanistan and Bhutan are the only countries in the region that did not have sufficient data to estimate trends.

In addition to making only poor progress on reducing underweight malnutrition, South Asia has very high prevalence rates of underweight malnutrition in children. In these countries, even if the set MDG is met by 2015, the prevalence of underweight children in these countries will be still very high (about 30%) in 2015. In Bangladesh, 66% of the children and 52% of children in India under the age of five were underweight (1990 and 1993 respectively). By halving this rate by 2015, they will still have an unacceptably high prevalence rates of underweight children: a third of the children in Bangladesh, and a quarter of the children in India. These rates of prevalence are more than double the regional averages for the Middle East and North Africa (MENA) and the East Asia and Pacific (EAP) regions, and three times the regional averages for the Latin America and Caribbean (LAC) region, today. This suggests that continued efforts need to be targeted at these countries where prevalence is high.

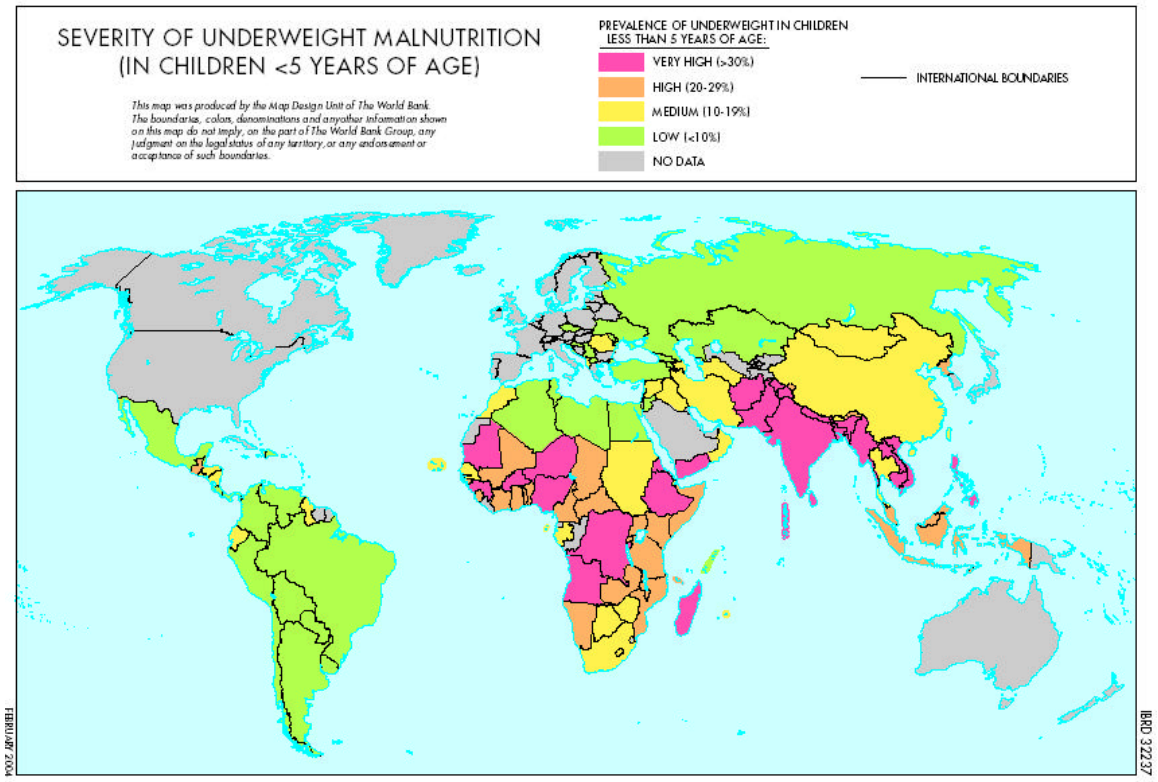
Map 2 shows the countries who are, if the current trend is maintained, making adequate progress, or who will have achieved the target (indicated in green), and countries that need extra efforts because they are making slow progress (indicated in orange), increasing prevalence (indicated in red). Countries indicated in gray did not have any data available at the time of trend estimation.

Map 2: Progress Towards Achieving the MDG Underweight Objective



On a global level, 18 countries have very high underweight prevalence rates of more than 40% (current or baseline, whichever is greater). These countries are: Afghanistan, Angola, Bangladesh, Burundi, Cambodia, Eritrea, Ethiopia, India, Lao PDR, Madagascar, Maldives, Mauritania, Myanmar, Nepal, Niger, Pakistan, Vietnam, and Yemen. In these countries, prevalence will still be high (>20%), in 2015, even if it is halved. Together, these countries represent 33% percent of the Bank's client population. In another 38 countries, with a prevalence of >20% to 39% (current or baseline, whichever is greater), achieving the Nutrition MDG would get them to underweight rates classified as medium severity, by 2015. Map 3 shows the regional variations in severity of malnutrition.

Map 3: Severity of Underweight Malnutrition (in children <5 years of age)



3.4. PROGRESS TOWARDS MDGS MEASURED BY ARC AND WHO MALNUTRITION SEVERITY CLASSIFICATION

Statements about the adequacy of progress towards the MDGs, based on the annual rate of change alone, can be ambiguous. As shown in Map 3, several countries that have reached, or are likely to reach the set objective will still have unacceptably high malnutrition rates in 2015. More nuance should be added to the progress measurement to help guide development agencies in prioritizing their action in countries in regard to addressing underweight malnutrition. The WHO classification of severity of malnutrition as a public health problem provides an excellent additional tool to assess and interpret progress. It enables assessment of the extent that a country needs assistance. It enables development agencies that use the MDGs as a monitoring tool, prioritize their actions.

For the purpose of this paper, countries are grouped into four categories, using current severity of underweight malnutrition in the country, in juxtaposition with the calculated ARC.

Group I - Low Priority Countries:

Group I countries demonstrate satisfactory progress (ARC ≥–2.7%: decreasing rates of underweight malnutrition), and also have relatively low rates of underweight (<20%) at baseline. There are 37 countries in this category. They represent 35% of the Bank's client population. Since underweight malnutrition is not of major public health concern in this group of countries, recommendations to these countries could include maintaining efforts to improve nutrition while also addressing other nutrition problems such as iron deficiency anemia in pregnant women and children, low birthweight, and over-nutrition and obesity. Low birthweight is also an important nutritional consideration, since it increases the risk for fetal and infant mortality and morbidity (WHO 1995). Jordan, for example, who has very low prevalence of underweight malnutrition in children (4% in 2002), has very high rates of anemia in pregnant women (50%). In another example, Bolivia, which although likely to reach the Nutrition MDG indicator, has a severe anemia problem (54% of pregnant women - WDI 2002). In Colombia, well on track to achieve the Nutrition MDG indicator, 17% of children are born with low birthweight, a rate which is considered high. For a country-wise detail please see Annex H.

Group II - Medium Priority Countries:

Group II countries have a lower prevalence of underweight children under five (<20%), but demonstrate unsatisfactory rates of progress towards reaching the Nutrition MDG. They have slower than the required rate of progress (<-2.7% ARC), and in some cases even have a positive ARC (increasing rates of change, signifying increasing prevalence of underweight malnutrition). An example is Azerbaijan, with medium prevalence of underweight but with alarmingly increasing trends (from 10% in 1996 to 17% in 2000). Azerbaijan runs the risk of becoming a 'high prevalence' country, and so efforts to stem this trend should be put in place. Twelve countries belong to this group, representing 11% of the Bank's client population. Countries in this group, despite having low prevalence of underweight malnutrition, need advice on extra efforts to improve performance, and in some cases reverse the trend. See Annex H for country-wise detail.

Group III - High Priority Countries:

Group III countries although demonstrating good progress, (ARC of –2.7% or more), have high rates of underweight prevalence at baseline (20% or higher). Five countries belong to this group, representing about 2.5% of the Bank's client population. Countries in this group, even though making good progress towards halving underweight malnutrition, will need intensified and/or additional efforts to reduce underweight rates even further than the MDG. Annex H lists the countries that fall in this group.

Group IV - Very High Priority Countries:

Group IV countries have a high prevalence (>20%) of underweight malnutrition in children under five ***and*** show poor progress (ARC <–2.7% or a positive ARC). Twenty-six countries are grouped in this category, representing more than 36% of the Bank's client population. *Intensive efforts* are needed to reduce underweight levels in these countries. These countries should be the top priority for efforts put in by development agencies and donor countries.

Of all regions, Africa has the highest number of high and very high-priority countries, but South Asia has the highest percentage of people (98% of population), needing intensive efforts to improve nutrition. Even though a high number of countries in the ECA region need monitoring assistance due to lack of adequate data, nearly 73% of the region's population lives in countries that are low priority or medium priority for action taking to reduce malnutrition rates. Most of these countries already have low rates (<3%) of underweight malnutrition. As stated earlier, these countries are likely to be faced with other issues in malnutrition: obesity and overweight, anemia in pregnant women, and low birthweight. A detailed list of countries using this classification is provided in Annex H.

Table 4 provides a region-wise priority grouping of countries, based on the annual rate of change and prevalence of underweight.

Table 4: Country Priority Classification as Measured by Annual Rate of Change and WHO Classification, by Region

	Group I countries (low priority)	**Group II countries (medium priority)**	**GroupIII countries (high priority)**	**Group IV countries (very high priority)**	**No data/ insufficient data**
Worldwide					
Countries	37	12	5	26	72
Population (million)	1718.4	559.5	118.1	1798.7	763.8
Population (percent)	34.7%	11.3%	2.4%	36.3%	15.4%
Sub-Saharan Africa					
Countries	3	3	3	17	21
Population (million)	7.9	58.7	26.2	374	221.1
Population (percent)	1.1%	8.5%	3.8%	54.4%	32.1%
East Asia and Pacific					
Countries	3	1	1	3	14
Population (million)	1027.5	211.7	79.9	98.5	190.3
Population (percent)	63.9%	13.2%	5%	6.1%	11.8%
Eastern Europe and Central Asia					
Countries	11	1	0	0	16
Population (million)	337.5	8.2	0	0	130.8
Population (percent)	70.8%	1.7%	0%	0%	27.4%
Latin America and the Caribbean					
Countries	13	4	1	0	13
Population (million)	254.8	189.5	12	0	70.3
Population (percent)	48.4%	3.6%	2.3%	0%	13.4%
Middle East and North Africa					
Countries	7	3	0	1	5
Population (million)	90.7	91.4	0	18.6	106.1
Population (percent)	29.6%	29.8%	0%	6.1	34.6%
South Asia					
Countries	0	0	0	6	2
Population (million)	0	0	0	1324	28.9
Population (percent)	0%	0%	0%	97.9%	2.1%

Source: Authors' own calculations, using population data in WDI 2002.

The following series of Figures 1 to 6 and Map 4 further illustrate Table 4. The graphs showing the four groups in Figures 1-6, are divided vertically at minus 2.7%, the minimum rate of change required to halve prevalence by 2015. The graphs are cut-off horizontally at 20%, prevalence of underweight, beyond which rates are considered high.

Figure 1: Priority Grouping of Countries in Sub-Saharan Africa

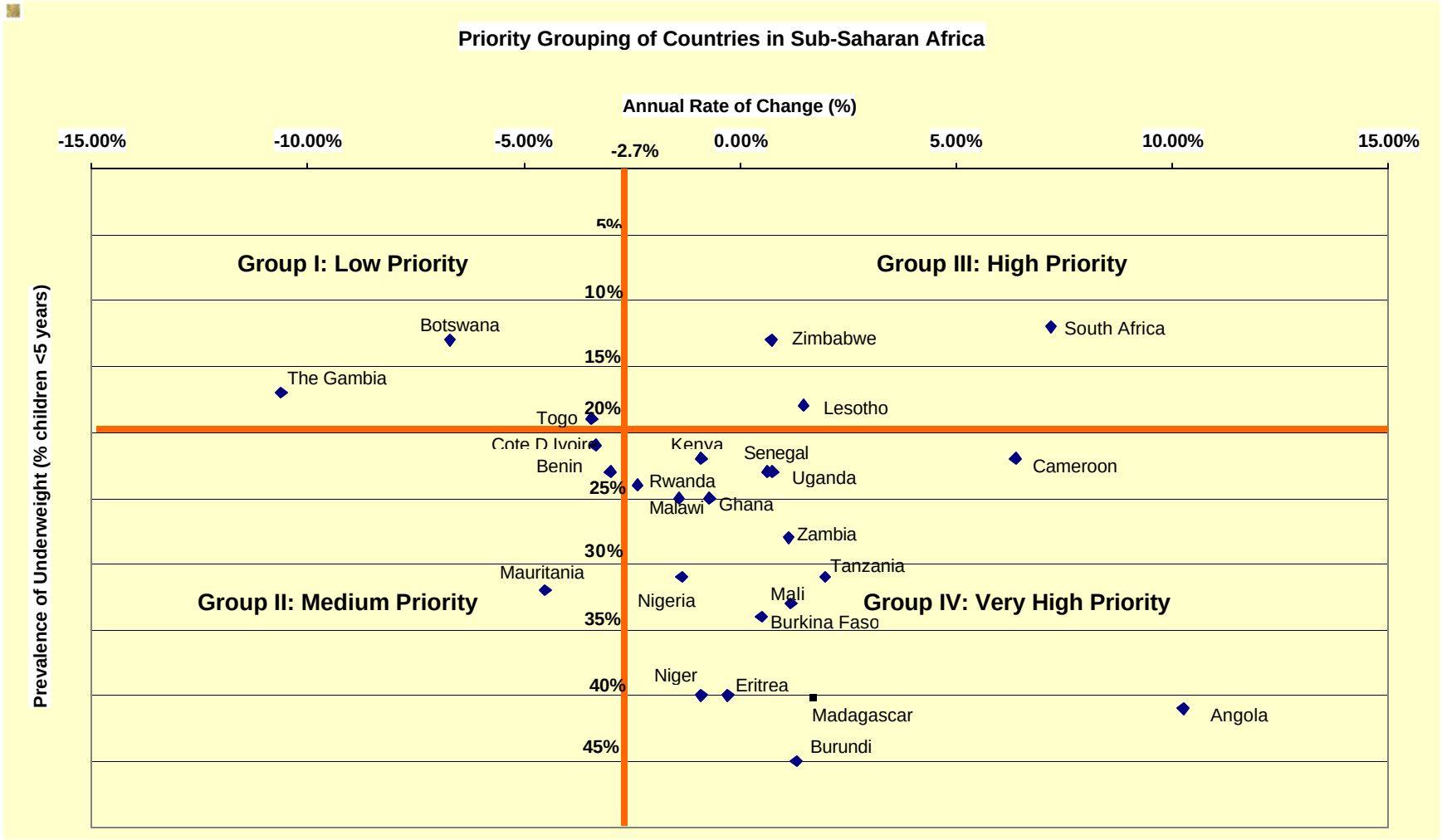


Figure 2: Priority Grouping of Countries in East Asia and Pacific

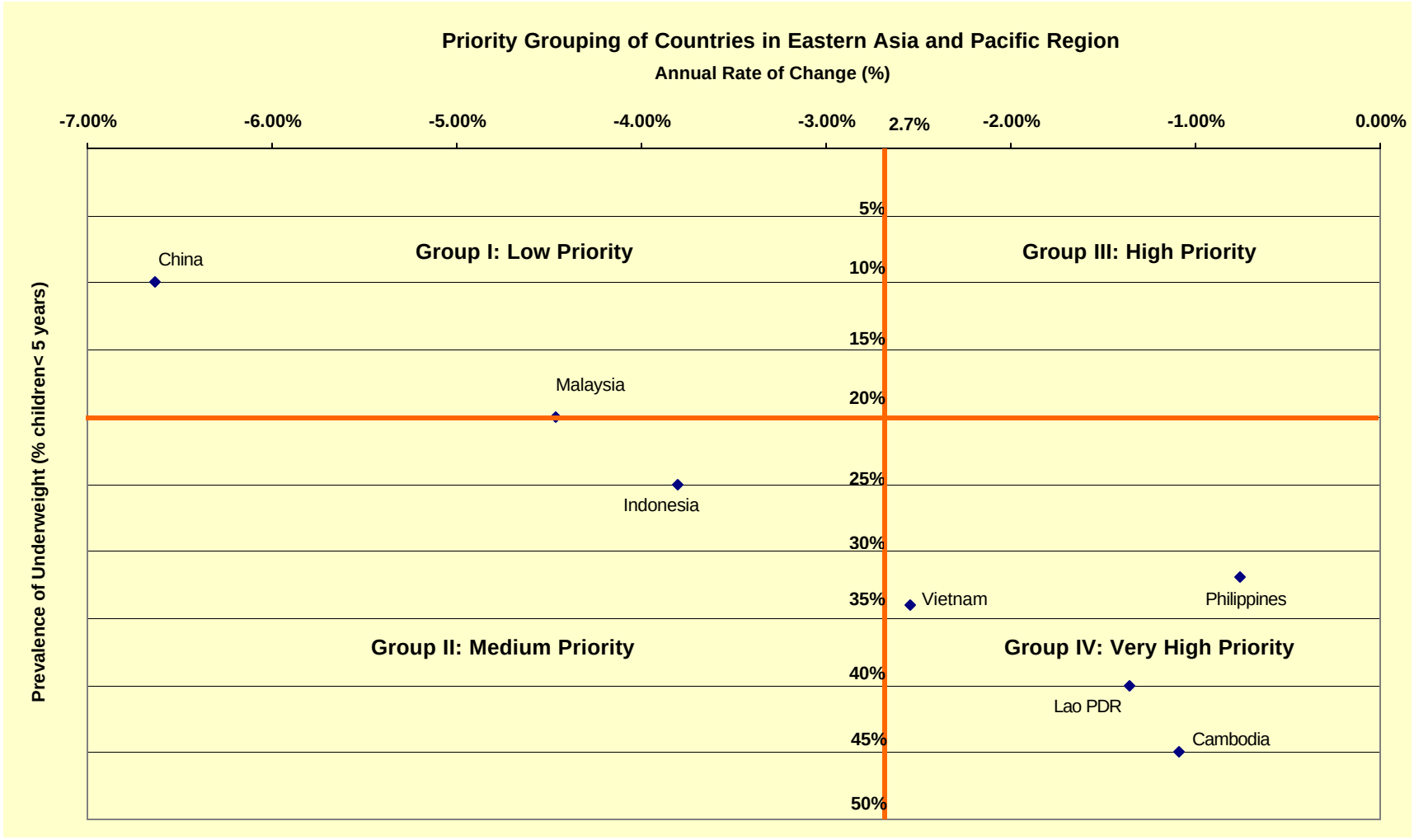


Figure 3: Priority Grouping of Countries in Europe and Central Asia

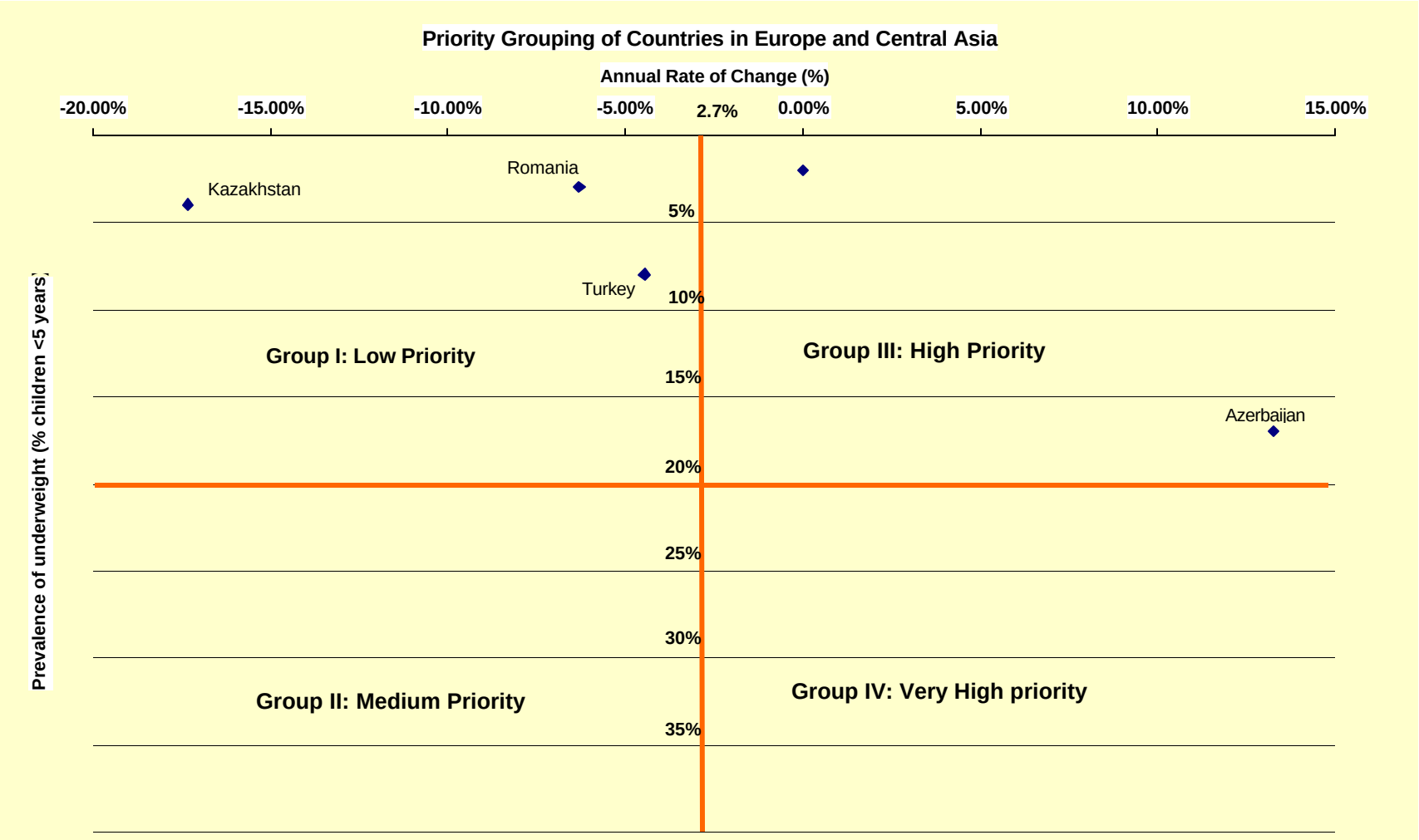


Figure 4: Priority Grouping of Countries in Latin America and Caribbean

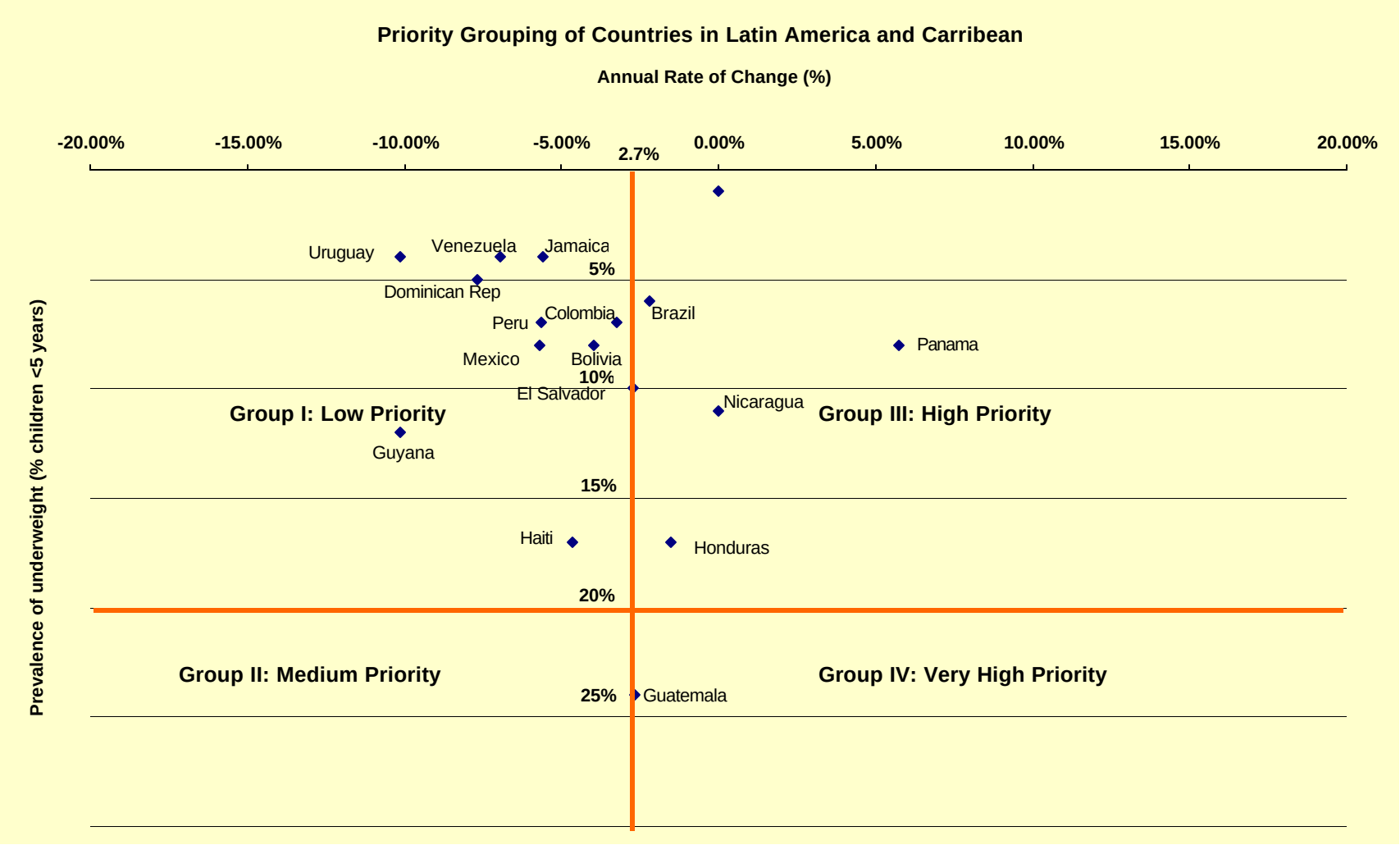


Figure 5: Priority Grouping of Countries in Middle East and North Africa

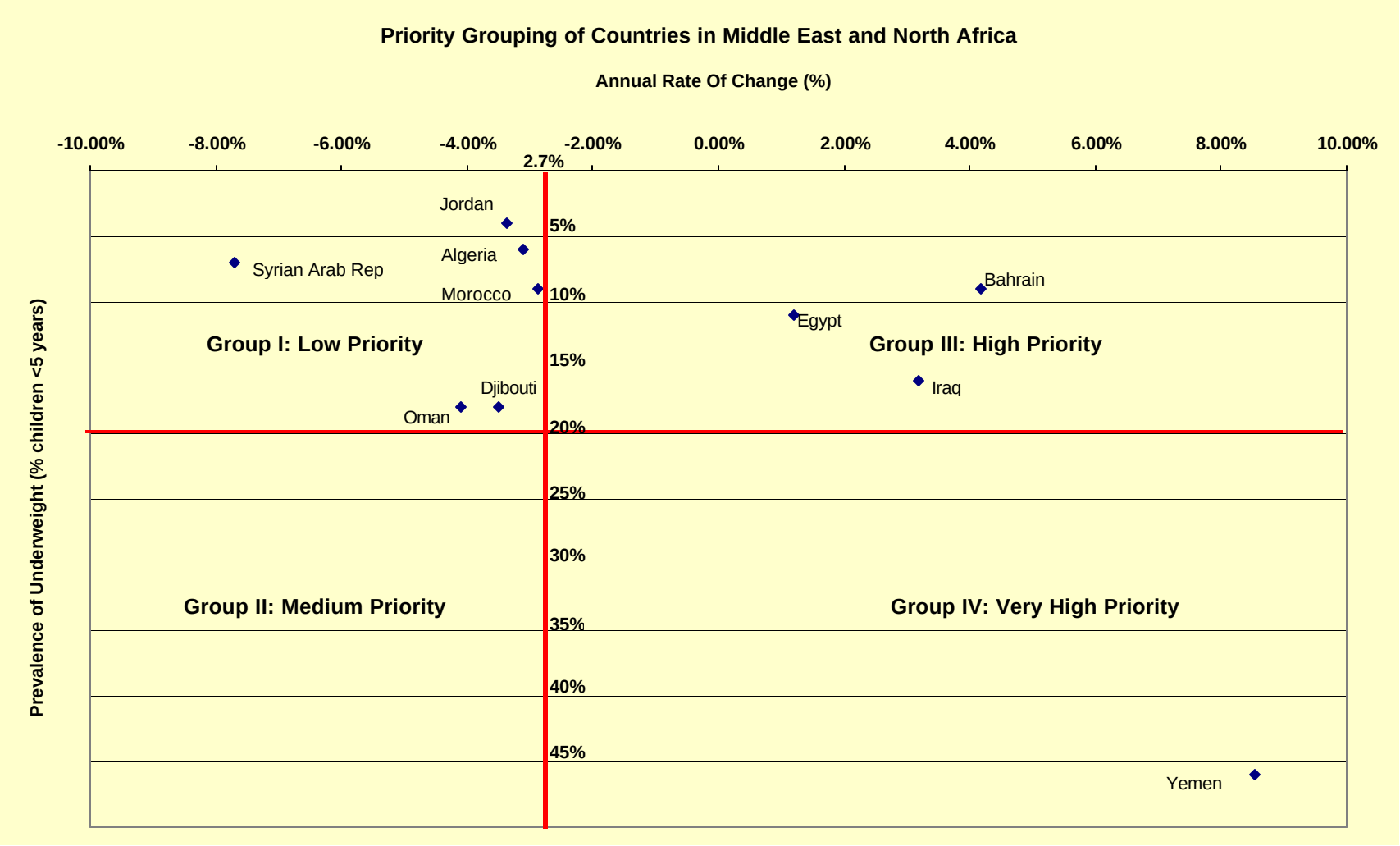
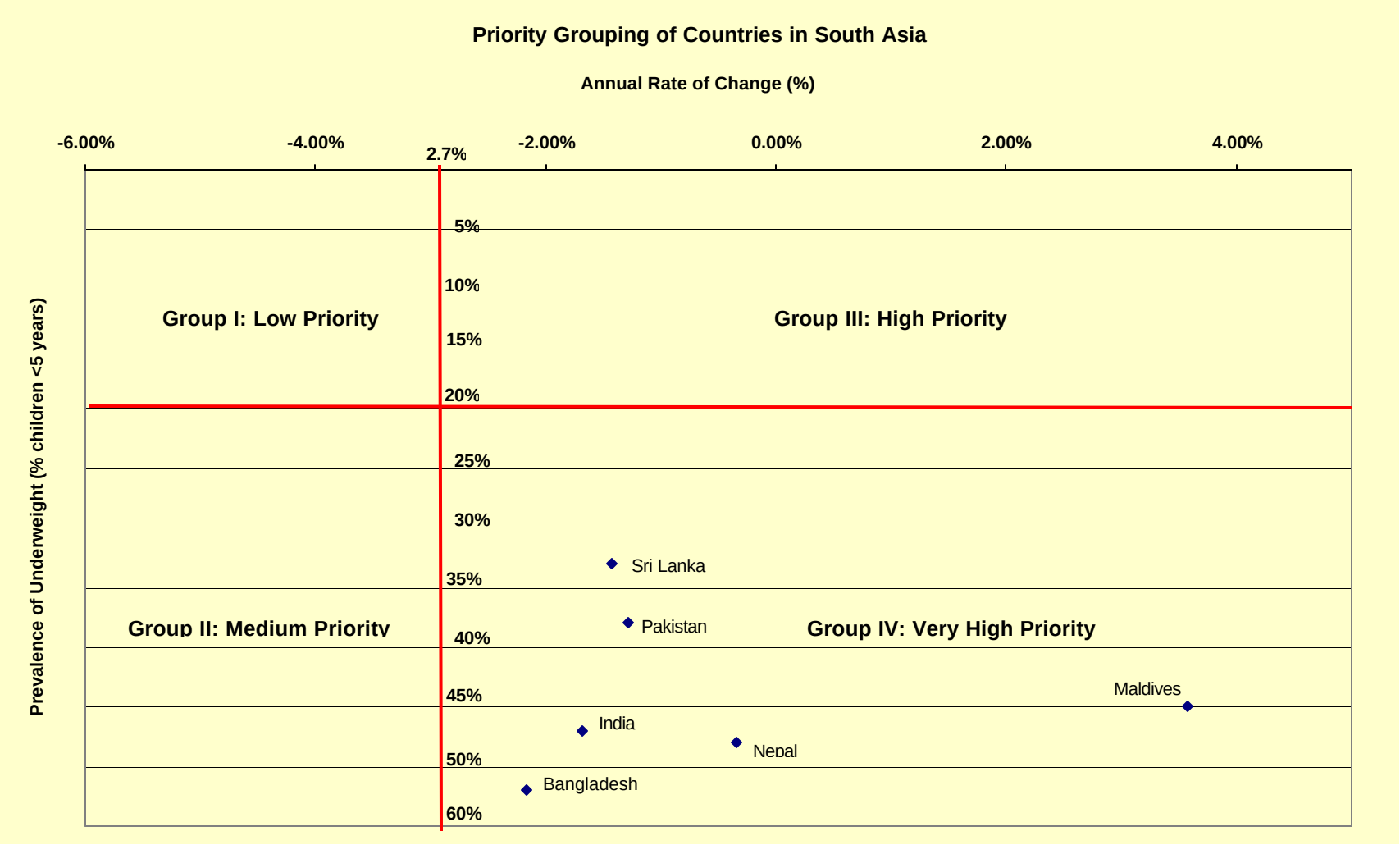
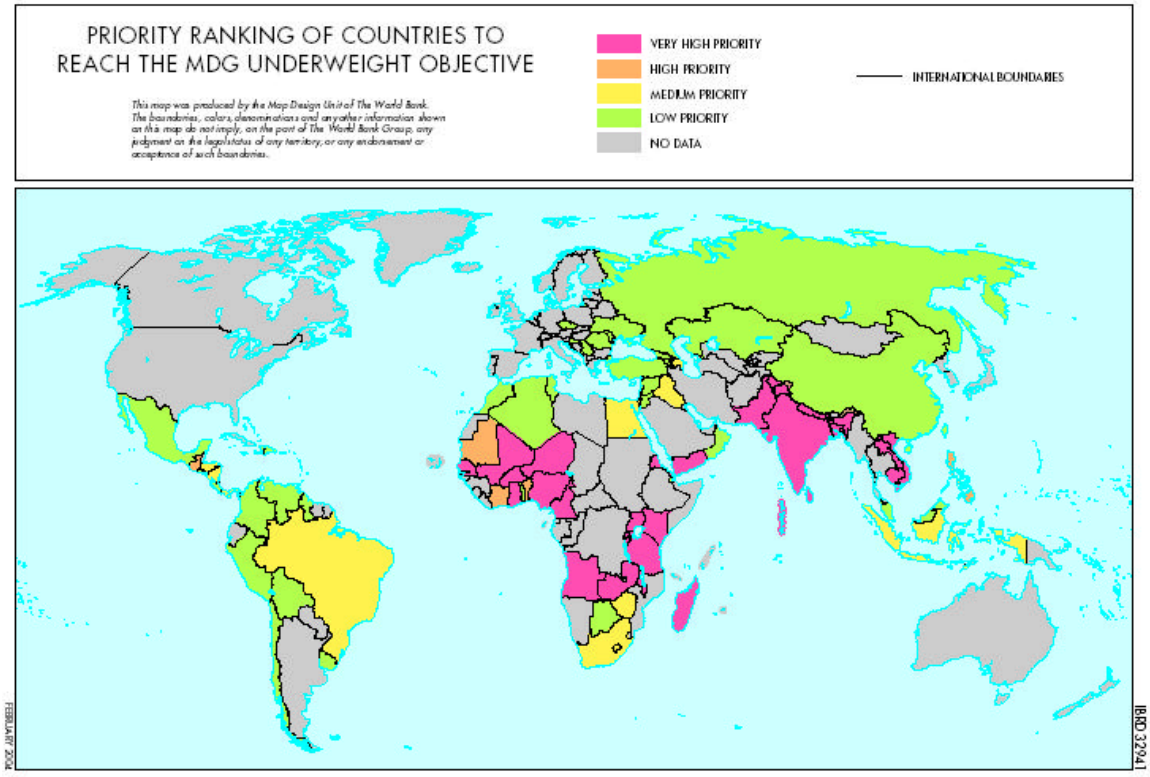


Figure 6: Priority Grouping of Countries in South Asia



Map 4: Priority Ranking of Countries to Reach the MDG Underweight Objective



IV. CONCLUSION

This paper argues for more nuance in the interpretation of progress towards the Nutrition MDG indicator (halving the prevalence of underweight children, under five years of age, by 2015). A quick analysis, based on trends towards reducing underweight prevalence alone, shows that a country such as Panama is performing poorly, because of its increasing rates, and a country such as Vietnam, is well on track to achieve the MDG. It does not take into account that Panama has a current underweight prevalence rate of 8% (low), whereas Vietnam has a current underweight prevalence rate of 34% (very high). Interpretation of a country's performance based on trends alone is ambiguous and can lead to erroneous prioritization of countries in need of donor assistance. Although these are probably extreme examples, there is a risk of targeting the wrong country for action taking and budget allocation based on the simple interpretation of progress.

Use of national level survey data can add another form of ambiguity. National survey data can hide within country differences that can be substantial, e.g., in Turkey, national levels of underweight prevalence were 8% in 1988, whereas in the same survey, the Eastern region of the country showed underweight prevalence of about 17% in children under the age of five years, more than double the national average[12].

[12] Source: WHO Global database of Child Growth and Malnutrition http://www.who.int/nutgrowthdb/

This paper analyses which countries are showing satisfactory and unsatisfactory progress using the annual rate of change (ARC), and then introduces the WHO-classification of severity of malnutrition in the analysis to provide more nuance. Although the paper uses national data only, it flags the risks and recommends that countries take regional disparities into their needs-analysis.

The method used (current trends along with current prevalence rates), to prioritize countries in need of action for reducing underweight malnutrition, will enable development agencies to prioritize countries for action taking and budget allocation.

As to efforts for reducing underweight malnutrition globally, there is no one solution that will solve this problem. The malnutrition situation that plagues Sub-Saharan Africa is different from that in Latin America or South Asia, and will require situation specific efforts. Countries in Sub-Saharan Africa may have more of a food-security issue that has exacerbated the underweight malnutrition problem, whereas in South Asia an improvement in health services and nutrition interventions is required to address malnutrition. UNICEF recently (2001) estimated that more than half of child malnutrition could be attributed to inappropriate feeding practices. All countries need to pay more attention to feeding of young children, starting immediately after birth, along with monitoring mother's nutritional status, during pregnancy.

All countries will require some efforts to address the malnutrition problem, be it underweight malnutrition, micronutrient deficiencies, or in some cases over-nutrition and obesity. Even within countries there will be situations that demand situation specific efforts, such as, addressing underweight issues and growth promotion in certain pockets while addressing over-nutrition in others. Political issues have to be considered to determine what would work best in the country specific context, along with issues on institutional capacity and financial commitments, and social contexts.

Annex A: The Millennium Development Goals, Targets, and Indicators

List of goals and targets

Goal 1. Eradicate extreme poverty and hunger

Target 1. Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.

1. Proportion of population below $1 per day
2. Poverty gap ratio (incidence x depth of poverty)
3. Share of poorest quintile in national consumption

Target 2. Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

4. Prevalence of underweight children (under five years of age)
5. Proportion of population below minimum level of dietary energy consumption

Goal 2. Achieve universal primary education

Target 3. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

6. Net enrolment ratio in primary education
7. Proportion of pupils starting grade 1 who reach grade 5
8. Illiteracy rate of 15-24-year-olds

Goal 3. Promote gender equality and empower women

Target 4. Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015.

9. Ratio of girls to boys in primary, secondary and tertiary education
10. Ratio of literate females to males of 15-to-24-year-olds
11. Ratio of women to men in wage employment in the non-agricultural sector
12. Proportion of seats held by women in national parliament

Goal 4. Reduce child mortality

Target 5. Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

13. Under-five mortality rate
14. Infant mortality rate
15. Proportion of 1-year-old children immunized against measles

Goal 5. Improve maternal health

Target 6. Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

16. Maternal mortality ratio
17. Proportion of births attended by skilled health personnel

Goal 6. Combat HIV/AIDS, malaria and other diseases

Target 7. Have halted by 2015 and begun to reverse the spread of HIV/AIDS

18. HIV prevalence among 15-to-24-year-old pregnant women
19. Contraceptive prevalence rate
20. Number of children orphaned by HIV/AIDS

Target 8. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

21. Prevalence and death rates associated with malaria
22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures.
23. Incidence of tuberculosis (per 100,000 people)
24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course

Goal 7. Ensure environmental sustainability

Target 9. Integrate the principles of sustainable development into country policies and programs and reverse the losses of environmental resources.

25. Proportion of land area covered by forest
26. Land area protected to maintain biological diversity
27. GDP per unit of energy use (as proxy for energy efficiency)
28. Carbon dioxide emissions (per capita)

Target 10. Halve by 2015 the proportion of people without sustainable access to safe drinking water.

29. Proportion of population with sustainable access to an improved water source

Target 11. By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

30. Proportion of people with access to improved sanitation
31. Proportion of people with access to secure tenure (urban/rural)

Goal 8. Develop a Global Partnership for Development

Target 12. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system

Target 13. Address the special needs of the least developed countries

Target 14. Address the special needs of landlocked countries and small island developing States.

Target 15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.

Indicators for targets 12-15

Official development assistance

32. Net ODA as percentage of OECD/DAC donors gross national product (targets of 0.7 % in total and 0.15 % for LDCs)
33. Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water and sanitation)
34. Proportion of ODA that is untied.
35. Proportion of ODA for environment in small island developing stats
36. Proportion of ODA for transport sector in landlocked countries.

Market access

37. Proportion of exports (by value and excluding arms) admitted free of duties and quotas
38. Average tariffs and quotas on agricultural products and textiles and clothing
39. Domestic and export agricultural subsidies in OECD countries
40. Proportion of ODA provided to help build trade capacity

Debt sustainability

41. Proportion of official bilateral HIPC debt cancelled
42. Debt service as a percentage of exports of goods and services
43. Proportion of ODA provided as debt relief
44. Number of countries reaching HIPC decision and completion points

Target 16. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth

45. Unemployment rate of 15 to 24 year olds

Target 17. In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries

46. Proportion of population with access to affordable essential drugs on a sustainable bases

Target 18. In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.

47. Telephone lines per 1,000 people
48. Personal computers per 1,000 people

Source:World Bank 2001

Annex B: Consultative Workshop Report June 6-7, 2002

The purpose of the June 2002 expert consultation called by the Bank's Nutrition Advisor was twofold:

- to take stock of the current and future availability of data on underweight for monitoring purposes
- to define the criteria for determining whether a country can be considered on track for reaching the MDG target of halving the prevalence of underweight children (under five years of age), by 2015

Consensus was reached on key technical questions regarding the indicator itself, its measurement, and quality control to avoid future controversies when evaluating progress.

Underweight as the MDG Indicator for Nutrition

The workshop participants continued an earlier debate considering if underweight is the most appropriate indicator for measuring progress toward the target of 'halving the proportion of people who suffer from hunger?'[13], although it was not included in the agenda. Briefly, the issues are as follows. First, the target, as stated at present, could be subject to different interpretations. For example, hunger can be defined in terms of energy intake per day. However, what about the children who have sufficient energy intake but suffer from frequent diarrhea and parasites? What about children with micronutrient deficiencies or stunted growth from inappropriate feeding practices? Second, the indictor itself, underweight, is a composite of acute and chronic malnutrition and so less precise than for example chronic malnutrition, or stunting, itself.

Despite the shortcomings of underweight as a composite indicator, it responds best to a number of practical issues on which regularly available data provide national geographic coverage, including coverage of the poor. It also is the most common assessment of child nutritional status, and data are routinely collected in growth promotion programs and surveys. It also reflects the long-term health and nutritional status of both individuals and the population.
(Weight-for-age identifies the condition of being underweight for a specific age. The advantage of this index is that it reflects both past i.e., chronic and/or present i.e., acute, under-nutrition, and is a composite measure of stunting and wasting. It is recommended as the indicator to assess changes in the magnitude of malnutrition over time – Cogill 2003)

To clarify the picture, the World Bank convened a consultation in November 2001, of operational and technical specialists from UN agencies, including the World Bank, and other organizations, to examine useful indicators that could be measured regularly and reliably to assess progress towards health, nutrition and population-related MDGs. Consensus was reached and the use of underweight (weight-for-age <–2 standard deviation), in children under the age of five was endorsed as the appropriate indicator (World Bank 2001). However, participants from various United Nations agencies who met in November of 2001 to discuss the indicators, felt that other indicators should also be monitored. They reasoned that if a

[13] Underweight = weight for age < –2 S.D. The assessment of nutritional status is based on the concept that in a well nourished population the distributions of children's height and weight, for a given age, will approximate a normal distribution. This means that about 68% of children will have a weight within 1 standard deviation (S.D.) of the mean for children of that age. About 14% of the children will be between 1 and 2 S.D. above the mean (overweight for their age), and another 14% will be between 1 and 2 S.D. below the mean (underweight for their age). This leaves 2 percent of children on either side of the normal distribution, 2% of children > 2 S.D. will be expected to be very overweight for their age, and 2% of children <–2 S.D. will be very underweight for their age. The normal distribution used to determine the distribution of children based on their nutritional status is the International Reference as defined by the National Center for Health Statistics (NCHS) and the Centers for Disease Control and endorsed by the World Health Organization.

country has a low prevalence rate of underweight malnutrition, other indicators such as prevalence of stunting and wasting, low birthweight and some of the core micronutrient deficiency indicators should also be monitored, as these may point to important health problems that should be addressed accordingly (World Bank 2001).

Nevertheless, certain issues should be kept in mind while interpreting the data with regards to the collection of correct weight and age information. Correct age can be difficult to ascertain (such as among indigenous populations or in rural areas that lack birth registries and children are usually delivered at home). Estimating the child's age in these cases jeopardizes data reliability. Standard scales for weighing a child may not be available in rural settings, and the use of nonstandard scales may compound data unreliability.

Consensus on Key-Technical Questions:

Age Groups: Collecting data only for children under two years of age was discussed, since it is widely agreed that growth promotion programs are most cost-effective in this target group. It was decided, however, to continue to collect data on children under five, as has been done over the past years. If measurements were collected only on children under two or three, a much larger household sample size would be needed (increasing costs and effort), and finding a child under five in a household is more likely than finding one under two. For surveys such as the Demographic Health Survey (DHS) and Multi-Indicator Cluster Survey (MICS), the sample size would have to be increased about 2.5 times (Wardlaw 2001). Keeping the under-five age group also permits comparisons with other indicators such as child mortality (under five), and many of the Integrated Management of Childhood Illness (IMCI) indicators collected for children under five. Moreover, with most of the surveys collecting data on children under the age of five, trends can be monitored over time. Nonetheless, targeting children under two in community nutrition and growth promotion and monitoring programs would be more effective because nutritional deficiencies during these fast-growth years become more evident as the child matures. Children that have had good nutrition under the age of three are more likely to attain normal weight and height for age than malnourished children.

Time Period: Surveys should be made every 3 to 5 years, a long enough interval to allow evaluation of a country's progress. Anthropometric data do not show large variations over a year or two. At least three data points are needed between the 1990 baseline and the 2015 endpoint to permit a clear statement for use as a criterion for determining a country's capacity and monitoring status. Countries with fewer than two data points during the 25 years need help with data monitoring.

Data sources: Agreement was reached on using the WHO global database as the main source of anthropometric data. The most comprehensive source, it also follows stringent quality controls. The WHO global database includes results from most of the MICS and the Demographic Health Surveys. MICS are carried out by the UNICEF at mid-decade and end-decade, in collaboration with national institutes of statistics, as a part of their efforts in monitoring their World Fit for Children (WFFC) goals. Other than these two main sources of data, national institutes and other agencies send their survey results to the WHO global database for inclusion if they meet all quality standards.[14] Systematic standardization, begun in 1986, eliminates concerns about varying methodologies, assures data compatibility, and permits comparison over time (Bloessner 2002).

UNICEF monitors progress toward its own goals (WFFC). It finances and carries out, in collaboration with national statistical institutes, the mid-decade and end-decade MICS surveys in about 60 countries.

[14] The WHO maintains a guidelines manual- that details quality standards and best practices in data collection. This document is directly available from WHO.

UNICEF manages the UNICEF Global Database on Child Malnutrition, which includes prevalence rates for 133 countries, 93 of them with more than one data point, and 60 countries with trend data between 1990 and 2000. Most of the MICS results are incorporated in the WHO Global Database, but with a time lag between UNICEF's publication of the preliminary report and its incorporation in the WHO database, due to quality control issues. The verification process can sometimes take up to two years.[15]

Other data-sources that should be given more attention include national surveillance systems. Discussed at length, was the possibility of using national surveillance systems for MDG monitoring, instead of continuing investment in national surveys. It was agreed that this possibility is a long way off, but national surveillance systems might be developed in parallel to build national capacity. Only 5% of the data now used are derived from national surveillance.

The experts gave a great deal of attention to the aggregate level of data collection. Although MDG monitoring will take place at the global and country level for strategic decision-making and resource allocation, in-country regional, urban-rural, and income-quintile differences are also important. The aggregate figures mask details or gaps that may exist among a country's rich and poor. For example, 10% of Turkish children under the age of five are underweight (<–2 Z-scores), but when disaggregated by income quintile, underweight is concentrated in the poorest quintiles (22%), and relatively infrequent among the better-off (3%). Similarly, in Guatemala, 35% of the children under the age of five are underweight in the poorest quintile, versus 16% and 7% among the fourth and fifth quintiles, respectively. In Yemen, where malnutrition is a major public health problem, the prevalence of underweight is highest among the poor (56%), but high even in the richest quintile (30%). Disaggregation of the collected data by gender and geographic location is most important for the countries themselves to help them target programs effectively. It was agreed that all donors should recommend that countries receiving assistance monitor for the MDGs at the disaggregated level as well as the national level.

[15] Monika Bloessner, personal communication, June 2002.

Annex C: Prevalence of Underweight and Annual Rate of Change, By Region and Country, 1987-2002 (Source: WHO, DHS)

Sub Saharan Africa

	Survey year	*Pre 1990*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*Severity*	*Geom Avg*	*Population*
Sub Saharan Africa			..	..														
Angola	1989	20							41							Very high	10.25%	13.9
Benin	1987	35												23		High	-3.00%	6.6
Botswana									17				13			Medium	-6.71%	1.7
Burkina Faso						33						34				Very high	0.50%	11.8
Burundi	1987	38											45			Very high	1.30%	7.1
Cameroon					15						22					High	6.38%	15.5
Cape Verde							14									Medium		0.46
CAR								23								High		3.8
Chad										39			28			High		8.1
Comoros													25			High		0.59
Congo, Dem. Rep.								34								Very high		53.8
Congo, Rep																		3.2
Côte D'Ivoire							24				21					High	-3.34%	16.8
Equatorial Guinea																		0.48
Eritrea						41		44							40	Very high	-0.27%	4.3
Ethiopia													47			Very high		67.3
Gabon													12			Medium		1.3
Gambia, the									26				17			Medium	-10.62%	1.4
Ghana	1988	27										25				High	-0.70%	20.1
Guinea												23	33			Very high		7.7
Guinea Bissau													25			High		1.3
Kenya						23	23				22					High	-0.89%	31.3

Lesotho					16			16				18			Medium	1.47%	2.1
Liberia																	3.3
Madagascar					37				40						Very high	1.56%	16.4
Malawi					28					30		25			High	-1.42%	10.7
Mali	1987	28					40						33		High	1.17%	11.3
Mauritania				48				23				32			Very high	-4.51%	2.8
Mauritius							15								Medium		1.2
Mozambique							27								High		18.4
Namibia					26										High		1.8
Niger					43						31	40			Very high	-0.90%	11.5
Nigeria			35			39					31				Very high	-1.35%	132.8
Rwanda					29							24			High	-2.37%	8.2
Sao Tome and Principe												13			Medium		0.15
Senegal						22		22				23			Medium	0.64%	10
Seychelles	1988	6													Low		0.084
Sierra Leone			29												High		5.2
Somalia												26			High		9.4
South Africa							9				12				Medium	7.19%	43.6
Sudan						34									Medium		32.4
Swaziland																	1.1
Tanzania					27			31			31				High	1.97%	35.2
Togo	1988	25						19							High	-3.43%	4.8
Uganda	1988	21					26					23			High	0.76%	23.4
Zambia					25				24					28	High	1.13%	10.5
Zimbabwe	1988	12									13				Medium	0.73%	13

East Asia and the Pacific

	Survey year	*Pre 1990*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*Severity*	*Geom Avg*	*Population*
East Asia and Pacific					19			20			13							
Cambodia									47				45			Very high	-1.09%	12.5
China					17			13			9		10			Medium	-6.63%	1003
Fiji						8										Low		0.82
Indonesia	1989		38		36			32			30	26	25			High	-3.81%	211.7
Kiribati																		0.095
Korea, Dem. Rep.													28			High		22.5
Korea, Rep.																		47.6
Lao PDR						44	40						40			Very high	-1.36%	5.5
Malaysia				25	26	26	23	22	20							High	-4.46%	24.3
Marshall Islands																		0.053
Micronesia, Fed. Sts.																		0.12
Mongolia												13	13			Medium		2.4
Myanmar								43								High		48.9
Palau																		0.02
Papua New Guinea																		5.4
Philippines				34		33	30				32					Very high	-0.76%	79.9
Samoa												2				Low		0.18
Solomon Islands	1989		21													High		0.44
Thailand						19		18								Medium		61.6
Tonga																		0.1
Vanuatu																		0.2
Vietnam	1989		45			41	45				40	37	34			Very high	-2.55%	80.5

Europe and Central Asia

pre 1990	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*Severity*	*Geom Avg*	*Population*
Europe and Central Asia																
Albania									8		14			Medium		3.2
Armenia									3		3			Low		3.1
Azerbaijan							10				17			Medium	13.27%	8.2
Belarus																9.9
Bosnia and Herzegovina																4.1
Bulgaria																7.9
Croatia					1	1	1							Low		4.4
Czech Republic		1												Low		10.2
Estonia																1.4
Georgia										3				Low		5.2
Hungary																10.2
Isle of Man																0.08
Kazakhstan						8				4				Low	-17.33%	14.8
Kyrgyz Republic																5
Latvia																2.3
Lithuania																3.5
Macedonia, FYR										6				Low		2
Moldova							3							Low		4.3
Poland																38.6
Romania		6								3	3	3	3	Medium	-6.30%	22.4
Russian Federation				4		3								Low		144.1
Slovak Republic																5.4
Tajikistan																6.3
Turkey				10		10			8					Low	-4.46%	69.6
Turkmenistan											12			Medium		5.5
Ukraine											3			Low		48.7
Uzbekistan																25.4
Yugoslavia, Fed. Rep.							2				2			Low	0.00%	10.7

Latin America and the Caribbean

	year of survey	*pre 1990*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*Severity*	*Geom Avg*	*Population*
Latin America and Caribbean									9										
Antigua and Barbuda																			0.0689
Argentina							2		5								Low		37.9
Belize					6												Low		0.253
Bolivia			11	12	12				8		8						Low	-3.98%	8.7
Brazil	1989	7							6								Low	-2.20%	174.5
Chile							1	1	1		1	1					Low	0.00%	15.6
Colombia	1989	10						8					7				Low	-3.24%	43.7
Costa Rica (<6)				3	2	2	2										Low		3.9
Cuba																			11.3
Dominica																			0.072
Dominican Republic				10					6				5				Low	-7.70%	8.6
Ecuador											14						Medium		13.1
El Salvador	1988	15				11					12					10	Medium	-2.70%	6.5
Grenada																			0.1
Guatemala	1987	33						27				24					High	-2.65%	12
Guyana						18				12							Medium	-10.14%	0.772
Haiti			27					28					17				Medium	-4.63%	8.3
Honduras	1987	21			18		18		25					17			Medium	-1.51%	6.8
Jamaica	1989	7		5	8	10	5	5	6	4	5	4					Low	-5.60%	2.6
Mexico	1988	15										8					Low	-5.71%	100.9
Nicaragua						11				12	11						Medium	0.00%	5.3
Panama					6					8							Low	5.75%	2.9
Paraguay			4														Low		5.5

Peru				11				8				7				Low	-5.65%	26.7
St. Kitts and Nevis																		0.046
St. Lucia																		0.159
St. Vincent and the Grenadines																		0.117
Surinam																		0.423
Trinidad and Tobago		7														Low		1.3
Uruguay	1989	6				4										Low	-10.14%	3.4
Venezuela, RB			8	6	5	5	5	5	5	5	5	5	4			Low	-6.93%	25.1

Middle East and North Africa

	year of survey	*pre 1990*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*Severity*	*Geom Avg*	*Population*
Middle East and North Africa																		
Algeria	1987	9			9			13					6			Low	-3.12%	31.3
Bahrain	1989	7						9								Low	4.19%	0.672
Djibouti	1989	23							18							Medium	-3.50%	0.656
Egypt, Arab Rep.			10			10			12	12	11					Low	1.19%	66.4
Iran, Islamic Rep.								16			11					Medium		65.5
Iraq				12									16			Medium	3.20%	24.3
Jordan			6							5					4	Low	-3.38%	5.2
Lebanon									3							Low		4.4
Libya								5								Low		5.5
Morocco	1987	12			10					9						Medium	-2.88%	29.6
Oman				24				23			18					Medium	-4.11%	2.5
Saudi Arabia																		22.1
Syrian Arab Republic						12		13					7			Medium	-7.70%	17
Tunisia								9		4						Low		9.8
West Bank and Gaza																		3.2
Yemen, Rep.					30				38	46						Very high	8.55%	18.6

South Asia

	year of survey	*pre 1990*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*Severity*	*Geom Avg*	*Population*
South Asia			64		62	53				47		47						
Afghanistan										49						Very high		28
Bangladesh			66		68				57	56			48	52		Very high	-2.17%	135.7
Bhutan												19				Medium		0.85
India						52						47				Very high	-1.68%	1000
Maldives							39	43			45					Very high	3.58%	0.29
Nepal								49			47			48		Very high	-0.34%	24.1
Pakistan				40			40	38								Very high	-1.28%	144.9
Sri Lanka	1987	37				38		33								Very high	-1.43%	19

Annex D: Country Data Availability for Trend Analysis, by Region

Region	Countries with at least 2 data points, eligible base line and surveys at least 4 years apart	Countries with more than one data point, but less than 4 years apart	Countries with only one data point	Countries with no data
Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cote D'Ivoire, Eritrea, Gambia, Ghana, Kenya, Lesotho, Madagascar, Mali, Malawi, Mauritania, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Togo, Uganda, Zimbabwe, Zambia	Chad, Guinea	CAR, Cape Verde, Comoros, Congo Dem. Rep, Ethiopia, Gabon, Guinea-Bissau, Mauritius, Mozambique, Namibia, Sao Tome and Principe, Seychelles, Sierra Leone, Somalia, Sudan	Congo Rep, Equatorial Guinea, Liberia, Swaziland
East Asia and Pacific	Cambodia, China, Indonesia, Lao PDR, Malaysia, , Philippines, , Vietnam	Thailand, Mongolia	Fiji, Solomon Islands Myanmar, Korea Dem Rep, Samoa	Kiribati, Korea Rep, Marshall Islands, Micronesia Fed St, Palau, Papua New Guinea, , Tonga, Vanuatu
Eastern Europe and Central Asia	Azerbaijan, Kazakhstan, Romania, Turkey, Yugoslavia Fed Rep	Albania, Armenia, Croatia, Russian Federation	Czech Rep, Georgia, Macedonia FYR, Moldova, Turkmenistan, Ukraine,	Belarus, Bosnia and Herzegovina Bulgaria, Estonia, Hungary, Isle of Man, Kyrgyz Rep, Latvia, Lithuania, Poland, Slovak Rep, Tajikistan, Uzbekistan
Latin America and the Caribbean	Bolivia, Brazil, Chile, Colombia, Dominican Rep, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, México, Nicaragua, Panama, Peru, Uruguay, Venezuela	Argentina, Costa Rica	Belize, Ecuador, Paraguay, Trinidad and Tobago	Antigua and Barbuda, Cuba, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Surinam,
Middle East and North Africa	Algeria, Bahrain, Djibouti, Egypt Arab Rep, Iraq, Jordan, Morocco, Oman, Syrian Arab Rep, Yemen	Iran, Tunisia	Lebanon, Libya	Saudi Arabia, West Bank and Gaza
South Asia	Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka		Afghanistan, Bhutan	

Source: Authors' own calculations using data and information from WDI 2002 and WHO Global database on Child Growth and Malnutrition

Annex E: Prevalence of Low Birth Weight, by Country (percentage of total births)

Country	LBW	Country	LBW	Country	LBW
Albania	8	Hungary	8	Panama	8
Argentina	7	India	34	Papua New Guinea	16
Australia	7	Indonesia	15	Paraguay	9
Austria	6	Iran	10	Peru	6
Azerbaijan	6	Iraq	24	Philippines	11
Bangladesh	50	Israel	8	Poland	8
Belarus	6	Jamaica	11	Portugal	7
Benin	9	Japan	8	Romania	10
Bolivia	9	Jordan	2	Saudi Arabia	5
Brazil	8	Kazakstan	9	Singapore	7
Bulgaria	7	Kuwait	7	Sri Lanka	18
Burundi	16	Kyrgyzstan	6	Sudan	15
Cambodia	18	Lao PDR	60	Switzerland	5
Canada	6	Latvia	4	Syria	7
Chile	5	Lebanon	19	Thailand	7
Colombia	17	Lithuania	4	Trinidad and Tobago	14
Congo, Dem. Rep	20	Madagascar	15	Tunisia	16
Costa Rica	6	Malaysia	8	Ukraine	8
Cuba	8	Mauritania	9	United Kingdom	6
Czech Republic	6	México	9	United States of America	7
Dominican Republic	14	Moldova	5	Uruguay	8
Ecuador	17	Mongolia	11	Venezuela	12
El Salvador	11	Morocco	4	Vietnam	11
Ethiopía	9	Nepal	23	West Bank and Gaza	6
France	6	New Zealand	6	Yemen	26
Ghana	8	Nicaragua	8	Zambia	10
Guatemala	8	Norway	5	Zimbabwe	11

Haiti	15	Oman	8	
Honduras	9	Pakistan	25	

Note: Low weight births are defined as infants weighing less than 2,500 g, measured soon after birth before significant post natal weight loss has occurred Countries not listed had no data available. *Source:* WDI (2002).

Annex F: Prevalence of Anemia among Pregnant Women, by Country, 1985–99 (percentage of all pregnant women)

Country	Anemia in pregnant women	Country	Anemia in pregnant women	Country	Anemia in pregnant women
Algeria	42	Honduras	14	Nicaragua	36
Angola	29	India	88	Niger	41
Argentina	26	Indonesia	64	Nigeria	55
Bangladesh	53	Iran, Islamic Rep	17	Oman	54
Benin	41	Iraq	18	Pakistan	37
Bolivia	54	Jamaica	40	Papua New Guinea	16
Brazil	33	Jordan	50	Paraguay	44
Burkina Faso	24	Kazakhstan	27	Peru	53
Burundi	68	Kenya	35	Philippines	48
Cameroon	44	Korea Dem .Rep	71	Romania	31
Central African Republic	67	Kuwait	40	Russian Federation	30
Chad	37	Lao PDR	62	Senegal	26
Chile	13	Lebanon	49	Sierra Leone	31
China	52	Lesotho	7	Somalia	78
Colombia	24	Liberia	78	South Africa	37
Costa Rica	27	Malawi	55	Sri Lanka	39
Côte d'Ivoire	34	Malaysia	56	Sudan	36
Cuba	47	Mali	58	Tajikistan	50
Czech Republic	23	Mauritania	24	Tanzania	59
Ecuador	17	Mauritius	29	Thailand	57
Egypt	24	México	41	Togo	48

El Salvador	14	Moldova	20	Trinidad and Tobago	53
Ethiopia	42	Mongolia	45	Tunisia	38
Gambia, The	80	Morocco	45	Turkey	74
Ghana	64	Mozambique	58	Uganda	30
Guatemala	45	Myanmar	58	Uruguay	20
Guinea-Bissau	74	Namibia	16	Venezuela	29
Haiti	64	Nepal	65	Zambia	34

Note: Countries not listed had no data available.
Source: WDI (2002).

Annex G: Progress Toward Halving Underweight, by Region and Country

	Satisfactory (ARC [3] 2.7% or already halved underweight[16]	Marginally satisfactory (ARC of –2.4% to 2.69%)	Marginally Unsatisfactory (ARC of -2.0% to -2.39%)	Unsatisfactory (ARC of < -2.0%)	Highly Unsatisfactory (increasing underweight rates)	Insufficient or no data[17]
Sub-Saharan Africa						
Countries	The Gambia, Botswana, Mauritania, Togo, Cote D'Ivoire, Benin	--	Rwanda	Eritrea, Ghana, Kenya, Malawi, Niger, Nigeria	Angola, Burkina Faso, Burundi, Cameroon, Lesotho, Madagascar, Mali, Senegal, South Africa, Tanzania,, Zimbabwe, Uganda, Zambia,	Cape Verde, CAR, Chad, Comoros, Congo Dem Rep, Congo Rep, Ethiopia, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Liberia, Mauritius, Mozambique, Namibia, Sao Tome and Principe, Somalia, Sudan, Swaziland, Sierra Leone, Seychelles
Population (million)	34.1	0	8.2	210.7	213.8	221.1
Population (percent)	5%	0.0%	1.2%	30.6%	31.1%	32.1%
East Asia and Pacific						
Countries	China, Indonesia, Malaysia, Samoa	Vietnam	--	Cambodia, Lao PDR, Philippines	--	Fiji, Kiribati, Korea Dem Rep, Korea Rep, Mongolia, Marshall Islands, Micronesia, Myanmar, Palau, Papua New Guinea, Solomon Islands, Thailand, Tonga, Vanuatu
Population	1239.2	80.5	0	97.9%	0	190.2

[16] Includes countries with <3% prevalence of underweight in children, considered to be normal prevalence in any given population.
[17] Excludes countries that have <3% prevalence of underweight in children, considered to be normal prevalence in any given population.

	Satisfactory (ARC [3] 2.7% or already halved underweight[16]	Marginally satisfactory (ARC of –2.4% to 2.69%)	Marginally Unsatisfactory (ARC of -2.0% to -2.39%)	Unsatisfactory (ARC of < -2.0%)	Highly Unsatisfactory (increasing underweight rates)	Insufficient or no data[17]
(million)						
Population (percent)	77.1%	5.0%	0.0%	6.1%	0.0%	11.8%
Eastern Europe and Central Asia						
Countries	Kazakhastan, Romania, Turkey, Yugoslavia, Georgia, Moldova, Ukraine, Czech Rep Armenia, Croatia, Russian Federation	--	--	--	Azerbaijan	Albania, Belarus, Bosnia Herzegovina, Bulgaria, Estonia, Hungary, Isle of Man, Kyrgyztan, Latvia, Lithuania, Macedonia, Poland, Slovak Rep, Tajikistan, Turkmenistan, Uzbekistan
Population (million)	337.5	0	0	0	8.2	130.8
Population (percent)	70.8%	0.0%	0.0%	0.0%	1.7%	27.4%
Latin America and the Caribbean						
Countries	Bolivia, Costa Rica, Colombia, Chile, Dominican Rep., El Salvador, Guyana, Haiti, Jamaica, México, Peru, Uruguay, Venezuela	Guatemala	Brazil	Honduras, Nicaragua	Panama	Antigua and Barbuda, Argentina, Belize, Cuba, Dominica, Ecuador, Grenada, Paraguay, St. Kitts and Nevis, St. Vincent and Grenadines, St.Lucia, Surinam, Trinidad and Tobago
Population (million)	254.8	12	174.5	12.1	2.9	70.3
Population (percent)	48.3%	2.3%	33.1%	2.3%	0.6%	13.4%

	Satisfactory (ARC [3] 2.7% or already halved underweight[16]	Marginally satisfactory (ARC of –2.4% to 2.69%)	Marginally Unsatisfactory (ARC of -2.0% to -2.39%)	Unsatisfactory (ARC of < -2.0%)	Highly Unsatisfactory (increasing underweight rates)	Insufficient or no data[17]
Middle East and North Africa						
Countries	Algeria, Djibouti, Jordan, Lebanon, Morocco, Oman, Syrian Arab Rep[a]	--	--	--	Egypt, Iraq, Bahrain, Yemen	Iran, Libya, Saudi Arabia, Tunisia, West Bank and Gaza
Population (million)	90.7	--	--	--	110.0	106.1
Population (percent)	29.5%	--	--	--	35.9%	34.6%
South Asia						
Countries	--	--	Bangladesh	India, Sri Lanka, Pakistan, Nepal	Maldives	Afghanistan, Bhutan
Population (millions)	0	0	135.7	1188.0	0.3	28.9
Population (percent)	0.0%	0.0%	10.0%	87.8%	0.0%	2.1%

Annex H: Progress Toward Halving Underweight, by Region and Country

Region	Group I countries (low priority)	Group II countries (medium priority)	Group III countries (high priority)	Group IV countries (very high priority)	Insufficient or No Data
Sub Saharan Africa	Botswana, Gambia, Togo	Lesotho, Zimbabwe, South Africa	Benin, Côte d'Ivoire, Mauritania,	Angola, Cameroon, Burundi, Eritrea, Burkina Faso, Madagascar, Senegal, Tanzania, Uganda, Zambia, Kenya, Niger, Nigeria, Malawi, Mali, Ghana, Rwanda	Cape Verde, CAR, Chad, Comoros, Congo Dem Rep, Congo Rep, Ethiopia, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Liberia, Mauritius, Mozambique, Namibia, Sao Tome and Principe, Somalia, Sudan, Swaziland, Sierra Leone, Seychelles
East Asia and Pacific	Malaysia, Samoa, China	Indonesia	Philippines	Cambodia, Lao PDR, Vietnam	Fiji, Kiribati, Korea Dem Rep, Korea Rep, Mongolia, Marshall Islands, Micronesia, Myanmar, Palau, Papua New Guinea, Solomon Islands, Thailand, Tonga, Vanuatu
Europe and Central Asia	Turkey, Kazakhstan, Yugoslavia, Romania, Armenia, Croatia, Czech Republic, Georgia, Moldova, Russian Federation, Ukraine	Azerbaijan	--	--	Albania, Belarus, Bosnia Herzegovina, Bulgaria, Estonia, Hungary, Isle of Man, Kyrgyztan, Latvia, Lithuania, Macedonia, Poland, Slovak Rep, Tajikistan, Turkmenistan, Uzbekistan
Latin America and Caribbean	Costa Rica, Chile, Bolivia, Colombia, Dominican Rep, El Salvador, Guyana, Haiti, Jamaica, México, Peru, Uruguay,	Brazil, Honduras, Nicaragua, Panama	Guatemala	--	Antigua and Barbuda, Argentina, Belize, Cuba, Dominica, Ecuador, Grenada, Paraguay, St. Kitts and Nevis, St. Vincent and Grenadines, St.Lucia,

	Venezuela				Surinam, Trinidad and Tobago
Middle East and North Africa	Djibouti, Oman, Morocco, Algeria, Jordan, Tunisia, Syrian Arab Rep, Lebanon	Bahrain, Egypt, Iraq	--	Yemen	Iran, Libya, Saudi Arabia, Tunisia, West Bank and Gaza
South Asia	--	--	--	Bangladesh, India, Sri Lanka, Pakistan, Nepal, Maldives	Afghanistan, Bhutan

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