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Handbook on Data Sources and Estimation of Development Indicators in African Countries

Millennium Development Goals

ABSTRACT

The Handbook presents the historical origin of Millennium Development Goals (MDG), data sources for computation of MDG indicators, issues on data production and quality, analysis of indicators for measuring and monitoring MDG goals (definition, rationale, data sources, estimation or computation of indicator and gender issues). The Handbook contents on indicators for measuring and monitoring MDG goals have been adapted from the UNSD Website or contents of the United Nations publication "Indicators for monitoring the Millennium Development Goals, ST/ESA/STAT/SER.F/95" with minor additions. The Handbook also describes the institutional framework for MDG indicators and various challenges connected with the measurement of MDG indicators.

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ACRONYMS

ADA	Official Development Assistance	GNP	Gross National Product
ADB	Asian Development Bank	HBS	Household Budget Survey
AFEAS	Alternative Fluorocarbon Environmental Acceptability Study	HIPC	Heavily Indebted Poor Countries
AIDS	Acquired Immunodeficiency Syndrome	HIV	Human Immunodeficiency Virus
AQUASTAT	FAO's Global Information System on Water and Agriculture	IBD	Integrated Database of WTO
ART	Anti Retroviral Therapy	ICLS	Thirteenth International Conference of Labour Statistics
BoP	Balance of Payments	ICSE	International Classification of Status in Employment
C.i.f.	carriage insurance and freight	IHES	Income and Household Expenditure Survey
CDC	Centers for Disease Control and Prevention (CDC)	ILO	International Labour Organization
CFC	Consumption of Ozone-depleting Chlorofluora	IMF	International Monetary Fund
CO ₂	Carbon Dioxide	IMR	Infant Mortality Rate
CWIQ	Core Welfare Indicators Questionnaire	IPU	Inter-Parliamentary Union
DAC	Development Assistance Committee of OECD	ISCED	International Standard Classification of Education, 1997 version
DHS	Demographic and Health Survey	ISIC	International Standard Industrial Classification of All Economic
DOTS	Directly Observed Treatment Short Course	ITC	International Trade Center
DPT	Diphtheria, Pertussis and Tetanus vaccine	ITN	Insecticide-Treated Net
DRS	Debt Reporting System	ITU	International Telecommunication Union
DSD	Data Structure Definition	IUCN	International Union for Conservation of Nature
EA	Enumeration Area	IUCNN	International Union for Conservation of Nature and Natural Activities
EPI	Expanded Programme on Immunization	LDCs	least developed countries
EU	European Union	LFS	labour force surveys
f.o.b.	free on board	LLIN	Long-lasting Insecticidal Net
FAO	Food and Agriculture Organization of the United Nations	LSM	Living Standards Measurement Study
GDP	Gross Domestic Product	LULUCF	Land Use, Land Use Change and Forestry
GDR	Gross Enrolment Rate	MDG	Millennium Development Goals
GHG	Green House gases	MICS	Multiple Indicator Cluster Survey
GNI	Gross National Income	MIS	Malaria Indicator Survey
		MMR	Maternal Mortality ratio

MPA	Marine Protected Area	UNFPA	United Nations Fund for Population Activities
NCHS	National Center for Health Statistics	UN-HABITAT	United Nations Human Settlements Programme
NER	Net primary Enrolment rate	UNHSP	United Nations Human Settlements Programme
NPV	Net Present Value	UNICEF	United Nations Children's Fund
NSDS	National Strategy for the Development of Statistics	UNSD	United Nations Statistics Division
NSO	National Statistical Office	USU	Ultimate Sampling Unit
NSS	National Statistical System	WCMC	World Conservation Monitoring Center
ODP	Ozone =depleting potential	WDPA	World database on Protected Areas
ODS	Ozone Depleting Substance	WHO	World Health Organization
OECD	Organisation for Economic Co-operation and Development	WHS	World Health Survey
PAPFAM	Pan Arab project for family Health Survey	WTO	World Trade Organization
PPP	purchasing power parity		
PSU	Primary Sampling Unit		
RAMOS	Reproductive Syndrome		
SDMX	Statistical Data and Metadata Exchange		
SIAP	United nations Statistical Institute for Asia and the Pacific		
SIDC	Small Island Developing Countries		
SRS	Simple Random Sampling		
SSU	Secondary Sampling Unit		
TB	Tuberculosis		
TCBDB	Trade capacity-Building Database		
U5MR	Under-five Mortality Rate		
UN	United Nations		
UNAIDS	Joint United Nations Programme on HIV/AIDS		
UNCTAD	United nations Conference on Trade and Development		
UNDP	United Nations Development Programme		
UNEP	UN Environment Programme		
UNESCO	United Nations Educational, Scientific and Cultural Organization		
UNFCC	UN Framework Convention on Climate Change		

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CHAPTER 1: INTRODUCTION TO MILLENNIUM DEVELOPMENT GOALS

1.1 Historical Origin of Millennium Development Goals

The historical background to the Millennium Development Goals (MDGs) is the humanity challenge of citizens' lives of many nations in the world, (http://www.unicef.org/mdg/28184_28230.htm) [1]. Many nations were starkly disparate. As some States looked ahead to prosperity and global cooperation, many barely had a future, being mired in miserable, unending conditions of poverty, conflict and a degraded environment. Some 1.1 billion people were – and still are – forced to live on less than \$1 a day, and 30 per cent of these were children. Even in the world's richest countries, one in every six children still lived below the national poverty line. As observed by UNICEF, a further look at humanity's challenges indicated that almost 11 million children, more than 29,000 a day, died before the age of five, mostly from preventable causes. Those that survive suffer other negative consequences: malnutrition leading to stunting and disability, a lack of access to health care and education, and an increased risk of suffering from exploitation, violence and HIV/AIDS.

Historically the Millennium Declaration and Development Goals are labelled the blue print of progress. In September 2000, the United Nations Headquarters in New York had the largest gathering of world leaders in human history for the Millennium Summit. There were representatives of 189 Member States of the United Nations to reflect on their common destiny. The nations were said to be interconnected as never before, with increased globalization promising faster growth, higher living standards and new opportunities.

The Member States of the United Nations signed the United Nations Millennium Declaration, which included eight Millennium Development Goals (MDGs) to be achieved by 2015 or 2020 (http://en.wikipedia.org/wiki/International_development#Millennium_Development_Goals) [2]. This represented the first time that a holistic strategy to meet the development needs of the world was established, with measurable targets and defined indicators.

Because the MDGs were agreed as global targets to be achieved by the global community, they are independent of, but by no means unrelated to, individual national interests. The goals imply that every State has a set of obligations to the world community to meet and those other States, which have achieved those goals, have an obligation to help those which have not. As such they may represent an extension of the concept of human rights.

The first seven MDGs present measurable goals, while the eighth lists a number of 'stepping stone' goals - ways in which progress towards the first seven goals could be made. Each goal uses indicators based on statistical series collected and maintained by respected organisations

in each relevant field (usually the UN agency is responsible for particular concern for example UNESCO with respect to education, but also the OECD, IMF and World Bank).

1.2 Millennium Development Goals and Targets

The Millennium Development Goals (MDGs) and targets define the expectation against which governments can be held accountable with respect, among others, to socio-economic development. The MDGs are a set of targets that many countries have agreed to adopt as their goals by 2015. The indicators range from social, economic, environmental and political landscape of the nation.

There are eight (8) MDGs to be achieved by 2015 and a total of twenty one (21) Targets that have been identified. These Goals and targets come from the Millennium Declaration (<http://www.un.org/millennium/declaration/ares552e.htm>) [3], signed by 189 countries and from further agreement by member states at the 2005 World Summit, (<http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/60/1>) [4]. There were 147 heads of State and Government, at the UN Millennium Summit in September 2000. The Goals and Targets are interrelated and should be seen as a whole. They represent a partnership between the developed countries and the developing countries “to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty” (http://devdata.worldbank.org/gmis/mdg/UNDG%20document_final.pdf) [5].

The MDGs are drawn from actions and targets contained in the Millennium Declaration. The MDG Goals:

- synthesize, in a single package, many of the most important commitments made separately at the international conferences and summits of the 1990s;
- recognize explicitly the interdependence between growth, poverty reduction and sustainable development;
- acknowledge that development rests on the foundations of democratic governance, the rule of law, respect for human rights and peace and security;
- are based on time-bound and measurable targets accompanied by indicators for monitoring progress; and
- Bring together, in the eighth Goal, the responsibilities of developing countries with those of developed countries, founded on a global partnership endorsed at the International Conference on Financing for Development in Monterrey, Mexico in March 2002, and again at the Johannesburg World Summit on Sustainable Development in August 2002.

The 8 Goals are as follows:

- Goal 1: Eradicate extreme poverty and hunger
- Goal 2: Achieve universal primary education
- Goal 3: Promote gender equality and empower women

- Goal 4: Reduce child mortality
- Goal 5: Improve maternal health
- Goal 6: Combat HIV/AIDS, malaria and other diseases
- Goal 7: Ensure environmental sustainability
- Goal 8: Develop a Global Partnership for Development

The quantifiable targets for each goal vary in numbers from one to a maximum of six. Goal 8 has 6 targets while Goals 2, 3 and 4 have each one target and Goals 1, 5, 6 and 7 have Targets ranging from 2 to 4. The Targets for each MDG Goal are presented in Table 1.1 below

Table 1.1: Goals and Respective Quantifiable Targets

GOALS	TARGETS
Goal 1: Eradicate extreme poverty and hunger	Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar per day Target 1.B: Achieve full and productive employment and decent work for all, including women and young people Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2: Achieve universal primary education	Target 2.A: Ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3: Promote gender equality and empower women	Target 3.A: Eliminate gender disparity and secondary education preferably by 2005, and in all levels of education no later than 2015
Goal 4: Reduce child mortality	Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
Goal 5: Improve maternal health	Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio Target 5.B: Achieve by 2015, universal access to reproductive health
Goal 6: Combat HIV/AIDS, malaria and other diseases	Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

<p>Goal 7: Ensure environmental sustainability</p>	<p>Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources</p> <p>Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss</p> <p>Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation</p> <p>Target 7.D: By 2020, to halve achieved a significant improvement in the lives of at least 100 million slum dwellers</p>
<p>Goal 8: Develop a Global Partnership for Development</p>	<p>Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system</p> <p>Includes a commitment to good governance, development and poverty reduction-both nationally and internationally</p> <p>Target 8.B: Address the special needs of the least developed countries Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indented poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction</p> <p>Target 8.C: Address the special needs of the landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island developing States and the outcome of the twenty-second special session of the General Assembly</p> <p>Target 8.D: Deal comprehensively with debt problems of developing countries through national and international measures in order to make debt sustainable in the long term</p> <p>Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries</p> <p>Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communication</p>

1.3 Indicators for monitoring progress

MDG Indicators provide evidence needed to monitor progress and advocate for policy change. For each target, indicators have been defined. In general, several indicators have been defined for each target. However, in some cases one indicator is earmarked for a target but in many cases the number of indicators is more than one for a target.

The Inter-Agency and Expert Group (IAEG) on MDG Indicators of the United Nations which is composed of representatives from various Departments within the United Nations Secretariat, a number of UN agencies from within the United Nations system and outside, various government agencies and national statisticians, and other organizations concerned with the development of MDG data at the national and international levels including donors and expert advisers is responsible for the preparation of data and analysis to monitor progress towards the MDGs. The Group also reviews and defines methodologies and technical issues in relation to the indicators, produces guidelines, and helps define priorities and strategies to support countries in data collection, analysis and reporting on MDGs.

Over the past few years, the IAEG has worked to promote improvement and better documentation on the standards and methods used in compiling and analyzing MDG indicators, including finding ways to aggregate country data in a meaningful way, overcoming problems of comparability and, even more importantly, providing a meaningful analysis of the aggregate figures that represents the local situation. This work is undertaken through thematic sub-groups established within IAEG and through other inter-agency mechanisms bringing together specialized agencies in the various fields covered by the MDGs.

Indicators are computed on the basis of statistical data arising from Population and Housing censuses; Household Surveys and Administrative Records.

At the time of determining these indicators, the following five criteria guided the selection of indicators [6], [7] and [8]. The criteria that provided guidance included QUOTE

- Provide relevant and robust measures of progress towards the targets of the Millennium Development Goals;
- Be clear and straightforward to interpret and provide a basis for international Comparison;
- Be broadly consistent with other global lists and avoid imposing an unnecessary burden on country teams, Governments and other partners;
- Be based to the greatest extent possible on international standards, recommendations and best practices;
- Be constructed from well-established data sources, be quantifiable and be consistent to enable measurement over time END QUOTE.

The following indicators for monitoring progress in column two of Table 1.2 below were decided upon.

Table 1.2: Millennium Development Goals (MDGs)

Goals and Targets (from the Millennium Declaration)	Indicators for monitoring progress
<i>Goal 1: Eradicate extreme poverty and hunger</i>	
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1 Proportion of population below \$1 (PPP) per day ⁱ 1.2 Poverty gap ratio 1.3 Share of poorest quintile in national consumption
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	1.4 Growth rate of GDP per person employed 1.5 Employment-to-population ratio 1.6 Proportion of employed people living below \$1 (PPP) per day 1.7 Proportion of own-account and contributing family workers in total employment
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Prevalence of underweight children under-five years of age 1.9 Proportion of population below minimum level of dietary energy consumption
<i>Goal 2: Achieve universal primary education</i>	
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1 Net enrolment ratio in primary education 2.2 Proportion of pupils starting grade 1 who reach last grade of primary 2.3 Literacy rate of 15-24 year-olds, women and men
<i>Goal 3: Promote gender equality and empower women</i>	
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1 Ratios of girls to boys in primary, secondary and tertiary education 3.2 Share of women in wage employment in the non-agricultural sector 3.3 Proportion of seats held by women in national

ⁱ For monitoring country poverty trends, indicators based on national poverty lines should be used where available

	parliament
Goal 4: Reduce child mortality	
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1 Under-five mortality rate 4.2 Infant mortality rate 4.3 Proportion of 1 year-old children immunised against measles
Goal 5: Improve maternal health	
Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1 Maternal mortality ratio 5.2 Proportion of births attended by skilled health personnel
Target 5.B: Achieve, by 2015, universal access to reproductive health	5.3 Contraceptive prevalence rate 5.4 Adolescent birth rate 5.5 Antenatal care coverage (at least one visit and at least four visits) 5.6 Unmet need for family planning
Goal 6: Combat HIV/AIDS, malaria and other diseases	
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1 HIV prevalence among population aged 15-24 years 6.2 Condom use at last high-risk sex 6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS 6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs

<p>Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases</p>	<p>6.6 Incidence and death rates associated with malaria</p> <p>6.7 Proportion of children under 5 sleeping under insecticide-treated bed nets</p> <p>6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs</p> <p>6.9 Incidence, prevalence and death rates associated with tuberculosis</p> <p>6.1 Proportion of tuberculosis cases detected and cured under directly observed treatment short course</p>
<p>Goal 7: Ensure environmental sustainability</p>	
<p>Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources</p> <p>Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss</p>	<p>7.1 Proportion of land area covered by forest</p> <p>7.2 CO₂ emissions, total, per capita and per \$1 GDP (PPP)</p> <p>7.3 Consumption of ozone-depleting substances</p> <p>7.4 Proportion of fish stocks within safe biological limits</p> <p>7.5 Proportion of total water resources used</p> <p>7.6 Proportion of terrestrial and marine areas protected</p> <p>7.7 Proportion of species threatened with extinction</p>
<p>Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation</p>	<p>7.8 Proportion of population using an improved drinking water source</p> <p>7.9 Proportion of population using an improved sanitation facility</p>
<p>Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers</p>	<p>7.10 Proportion of urban population living in slumsⁱⁱ</p>

ⁱⁱ The actual proportion of people living in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (a) lack of access to improved water supply; (b) lack

Goal 8: Develop a global partnership for development	
<p>Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system</p> <p>Includes a commitment to good governance, development and poverty reduction – both nationally and internationally</p> <p>Target 8.B: Address the special needs of the least developed countries</p> <p>Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction</p> <p>Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)</p> <p>Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term</p>	<p>Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries and small island developing States.</p> <p>Official Development Assistance (ODA)</p> <p>8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income</p> <p>8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation)</p> <p>8.3 Proportion of bilateral official development assistance of OECD/DAC donors that is untied</p> <p>8.4 ODA received in landlocked developing countries as a proportion of their gross national incomes</p> <p>8.5 ODA received in small island developing States as a proportion of their gross national incomes</p> <p>Market access</p> <p>8.6 Proportion of total developed country imports (by value and excluding arms) from developing countries and least developed countries, admitted free of duty</p> <p>8.7 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries</p> <p>8.8 Agricultural support estimate for OECD countries as a percentage of their gross domestic product</p> <p>8.9 Proportion of ODA provided to help build trade capacity debt sustainability</p> <p>8.10 Total number of countries that have reached their</p>

of access to improved sanitation; (c) overcrowding (3 or more persons per room); and (d) dwellings made of non-durable material.

	<p>HIPC decision points and number that have reached their HIPC completion points (cumulative)</p> <p>8.11 Debt relief committed under HIPC and MDRI Initiatives</p> <p>8.12 Debt service as a percentage of exports of goods and services</p>
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	8.13 Proportion of population with access to affordable essential drugs on a sustainable basis
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	<p>8.14 Telephone lines per 100 population</p> <p>8.15 Cellular subscribers per 100 population</p> <p>8.16 Internet users per 100 population</p>

1.4 Usefulness of producing indicators for monitoring Millennium Development Goals

Indicators for monitoring MDGs are necessarily quantitative and based on statistical data. These MDG indicators are useful for some of the following reasons:

- indicators can help to answer the questions where are we now, where do we want to go, are we taking the right path to get there, and are we there yet?
- assessing progress towards achieving MDGs;
- increase focus on specific MDGs;
- assist policy makers and decision-makers at all levels on an ongoing basis;
- accelerate demand and supply of data and highlighted limitations in their availability and quality;
- stimulate more interest in collecting good data; and
- increase public awareness on the MDGs.

CHAPTER 2: DATA SOURCES FOR MDG INDICATORS

2.1 Primary Sources of Data

Data for the computation of indicators to measure and monitor the Millennium Development Goals (MDGs) are obtained from complementary sources, namely, *population and housing censuses; household surveys and administrative records*.

2.1.1. Population and Housing Censuses

A Population and Housing Census, herein referred to as a census, is according to the United Nations the whole “process of collecting, compiling, evaluating and disseminating demographic, social and other data covering, at a specified time, all persons in a country or in well-delimited parts of a country [9].” It is clear from what the census encompasses, as indicated below, that it is a valuable source of some data relevant for measuring, evaluating, and monitoring of some MDGs indicators. In general, a census is a major source of socio-economic and demographic data. It is, for example, an ideal source of information on population size, composition, and its spatial distribution. In addition to the above the census has an added advantage of generating data for small administrative domains.

Information on size, distribution and characteristics of a country’s population is critical for describing and assessing the socio-economic and demographic circumstances relevant to measuring and monitoring MDGs. The underlying goal being to understand the well-being of the people in a country in line with the cardinal objective of the Millennium declaration of reducing poverty by half by 2015. A census in many African countries also contributes significantly to the building and enhancing the nation statistical system.

The Millennium Development Goals and other international development agendas, which focus on poverty, have created a great demand for timely and reliable data for monitoring and evaluating relevant indicators [10]. This in turn has created interest for many African countries to participate, for example, in the 2010 round of censuses. A census helps to provide some of the necessary data. It provides, for instance, information for preparing population estimates and for analyzing of socio-economic situation of a country’s population. It should be mentioned that in the selection of core topics, covered in a census, data requirements for the

production of MDG indicators were taken into account [2]. This took cognizance that MDG indicators provided a framework for assessing a set of internationally agreed development goals and targets.

While not all MDGs indicators can be calculated from census data, it remains an invaluable source of relevant data. For example, a census provides population figures used as denominators for most MDG indicators. In addition, it provides a sampling frame for use in household surveys, another source of relevant data for MDG measurement, monitoring and evaluation. The table below gives some selected indicators that can be generated from census data.

Table 2.1: MDG indicators likely to be computed from Census data

Serial No.	Indicator No.	Name of Indicator
1	8	Literacy rate of 15-24 years old
2	10	Ratio of literate women to men 15-24 years
3	11	Share of women to men in wage employment in the non-agricultural sector
4	13	Under five mortality rate
5		Infant mortality rate
6	16	Maternal mortality ratio
7	45	Unemployment rate of young people aged 15-24 by gender and total
8	30	Proportion of the population with sustainable access to an improved water source (Rural/urban)
9	31	Proportion of the population with access to improved sanitation (rural/urban).
For some countries		
10	32	Proportion of households with access to tenure
11	48	Persons with personal computers

Sources: Principles and Recommendations for Population and Housing Census Revision

The above is not an exhaustive list of indicators that can be computed from data got from a census relevant to MDGs. Depending on the load of a census questionnaire more additional data could be collected. It is also important to note that some of the listed most of the above listed indicators can be measured from data generated through surveys which make are more flexible and are used to collect more detailed data that can be used to establish some salient causes of outcomes. This is true of indicators such as under five mortality rate; infant mortality rate; maternal mortality ratio and proportions of households with access to tenure. Household surveys are more suitable to collect such information which require considerable amount of probing in order to collect reliable information from respondents with relevant metadata.

2.1.2 Household Sample Surveys

Household surveys are a major source of data, in most African countries, that may be used to compute and monitor indicators. In general, they are conducted more frequently than censuses and are relatively cheaper (see more discussion in chapter 3). In addition, they have the flexibility of collecting any type of data, about the conditions under which people live, their welfare and the economic activities in which they are engaged. In this respect, household surveys have become an important source of data on social phenomena that are pertinent to the measurement, monitoring including evaluation of MDGs.

Compared to a census most topics can be covered in greater detail, because of less workloads for enumerators and generally a longer time period for data collection. In surveys, there are fewer enumerators recruited compared to the census therefore, more qualified persons can be recruited and intensively trained. It is against this background that, in principle, it can be argued that surveys, if well designed and implemented generate more reliable data than the census. They produce data that can be used to measure and monitor indicators at specified points in time. When repeated they can produce time series or longitudinal data that can be used to monitor and/or measure change. With an increasing demand for MDG data, household surveys provide an important venue for meeting the additional and emerging data needs. Because household surveys are flexible, in terms of subject coverage and timeliness, they are, therefore, ideal sources for meeting the data needs of MDGs. Above all they have been found to be useful in discerning salient causes of some of the findings. This may not be possible through the census and administrative records because of their simplicity and limited exploration of a particular subject. In addition, surveys are more amenable to adapt and respond to new data demands. This is not the case, in particular, with administrative records which are relatively inadequate in many African countries. A clear example is the lack or non availability of comprehensive vital registration systems in many African countries. In such situations of inadequacy of registration records household surveys become obvious substitutes as sources of MDG indicators data.

It should be mentioned that, in most cases, household surveys are not explicitly designed to collect statistical information pertaining to MDGs. They are usually meant for other purposes. Notwithstanding the above, data generated from some surveys have been found to be relevant to the measurement and monitoring of most MDG indicators. In fact most of the indicators, in Africa, are computed from data generated from household surveys, some of the surveys are briefly described below.

MDG data can be collected through two broad types of household surveys, namely **Periodic** and **ad-hoc surveys**. Such surveys may be specialized, multi-subject, multi-phase, and longitudinal. In selecting which type of survey approach to adopt, some factors are taken into consideration, among them, subject-matter requirements, logistic consideration and resources.

Specialized surveys include single subjects such as nutrition or waste management. These surveys can be ad hoc or periodic. **Multi-subject surveys** involve covering different subjects in a

single survey. On the other hand **multi-phase surveys** entail collecting information in succeeding phases with one phase serving as a precursor to the next. The initial phase usually encompassed a larger sample than the subsequent phases. The focus of this design is to screen sample units with respect to certain characteristics so as to establish the eligibility of such units for use in the subsequent phases. In **longitudinal surveys** data are collected from the same respondents over a period of time. The main purpose is to measure change.

Table 2.2: Selected Indicators that can be computed from household survey data

Serial No.	Indicator No.	Name of indicator
1	1	Proportion of population below \$1 (PPP) per day
2	2	Share of poorest quintile in national consumption
3	5	Proportion of population below minimum level of dietary energy
4	6	Share of women in wage employment in non-agricultural sector
5	9	Ratio of girls to boys in primary, secondary and tertiary education
6	15	Proportion of children immunised against measles
7	17	Proportion of births attended by skilled health personnel
8	19	Condom use rate of contraceptive rate
9	20	Number of children orphaned by AIDS
10	22	Proportion of population in Malaria risk areas using effective Malaria prevention and treatment measures
11	29	Proportion of population using solid fuels
12	32	Proportion of households with access to secure tenure

The above list is not exhaustive as many more topics can be covered in a household survey. Through surveys, it should be stated that some topics that are covered in a census can also be covered in a household sample survey. We briefly describe, below, some of the household surveys that generate data relevant to measuring and monitoring MDGs in some African countries.

a) Income and Household Expenditure Surveys (IHES)

These are common and regular surveys in a number of African countries [11]. They provide data to measure household consumption and expenditure. The survey determines the share of different commodities in the consumption basket, which are used as weights in calculating consumer price indices. In addition, the data can be used to estimate or determine poverty lines.

b) Labour Force Surveys (LFS)

While the results from the above surveys [12], <http://www.ilo.org/dyn/lfsurvey/lfsurvey.home>) [18] measure and monitor employment and unemployment indicators, the surveys also collect data on wages. These surveys can be periodic or ad hoc, however, in some countries they are frequent and regular, carried out every quarter. For most African countries such surveys are carried over a longer period, in some cases, every five years. Panel studies can be adopted in a LFS to measure change and minimize sampling errors. The International Labour Organization has been sponsoring African countries in conducting such surveys for many years

c) Living Standards Measurement Surveys (LSMS)

These surveys (http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2000/08/19/000094946_00080305310288/Rendered/PDF/multi_page.pdf) [13] which are multi-purpose measure and monitor a number of well-being indicators that are related to health, education, demographic, income, including consumption and expenditure. Data from the surveys can also be used to determine poverty lines. The surveys, therefore, are aimed at giving some indication of household well-being and the underlying factors that contribute to the outcomes. At the analytical stage it is possible to carry out multi-level analysis because the data is collected at individual, household and community levels. These surveys are sponsored by the World Bank.

d) Demographic and Health Surveys (DHS)

The DHS (<http://www.measuredhs.com/aboutsurveys/start.cfm>) [14] collects, among others, data on fertility, mortality (including maternal and child mortality), contraception, HIV/AIDS, anthropometrics and child malnutrition. The data can be used to measure and monitor demographic and health indicators. The surveys are sponsored by Macro International.

e) Multiple Indicator Cluster Surveys (MICS)

The surveys (http://www.unicef.org/statistics/index_24302.html) [15] focus, on collecting information mainly linked to children and women. Health, education, child protection and HIV/AIDS data are the main focus. Such data facilitate the computing and monitoring health and education indicators. UNICEF sponsors such surveys.

f) Reproductive Age Mortality

In general, this is a multi-phase survey (<http://ije.oxfordjournals.org/cgi/content/abstract/17/2/385>) [16] mainly limited to two phases. The survey is sponsored by USAID. It collects information related to maternal mortality. The results are, mainly used, to measure and monitor maternal mortality ratio.

g) Core Welfare Indicator Questionnaire (CWIQ)

The above surveys (<http://www.iigawabudget.org/CWIQ.pdf>) [17] are sponsored by the World Bank. They measure changes in indicators of access, use and satisfaction with selected social and economic services. In these surveys data are collected on household characteristics, education, health, household amenities, anthropometric data, displacement of the population, etc. Some CWIQ surveys have collected data on prices of commodities and household expenditures.

2.1.3 Administrative Records

Administrative records are those records which are kept by many public authorities across government including the private sector organizations as part of administrative routines or from returns provided under some law and or practice. These records become vital sources of many official statistics compiled by components of the national statistical system (NSS) of any country. Government Departments and Ministries are engaged in compiling these statistics to assist themselves in a variety of ways including administration, policy and decision-making and planning. In addition, official statistics are used to inform the general public about the general state of the country.

In many African countries administrative records are not very well developed to satisfy statistical needs. They are mainly meant to serve the purpose of administration. Thus, to record the execution and performance of their undertakings primary to meet administrative needs (UN, 1979) (http://unstats.un.org/unsd/publication/unint/DP_UN_INT_88_X01_6E.pdf) [19], [20], Banda, 2003) [21]. In cases where an attempt is made to uniquely collect some statistics through an administrative system such as civil registration of births and deaths, the statistics are generally restricted to small segments of the population such as urban areas. It should also be pointed out that the reliability of statistics from administrative records depends on the completeness of the system, however, more often than not, that is not the case in many African countries. While administrative processes may be continuing for purposes of record-keeping and administration, their use as a source of statistics is secondary. More over an administrative record does not usually provide detailed information on households or family (Suharto, 2000) [22].

The declaration of MDGs, has however, ushered in a flurry of activity in the area of indicator production. Therefore all sources of data should be well developed and maximized. In this connection, a good national statistical programme to serve MDGs should generally make use of a careful mix of censuses, household surveys and administrative records as sources of data.

Official statistics are statistics that are collected and published by the central Government, provincial or local governments and statutory authorities. The term “government statistics” is sometimes used in place of official statistics. Official statistics are usually collected and

produced by the national statistical office or a statistical office of a ministry, department or bureau.

Examples of some administrative records from which official statistics are compiled include the following:

- ★ Customs bills of entry records: from which quantities and values of imports and exports of goods, of a nation, are compiled;
- ★ Vital registration records: a basis for compiling births and deaths and other vital statistics;
- ★ Health records: facilitate the compilation the number of patients classified by disease, in-patients, out-patients, etc.;
- ★ Education records: The provide information on students enrolment by grade, primary, secondary and tertiary enrolments and drop-out rates, etc;
- ★ Immigration records: Use in compiling in and out migration of the population;
- ★ Agricultural extension records: for compiling statistics on crops grown, production, etc; and
- ★ Transport and communication records: list number of vehicles in a country by type, number of telephone line connected, etc.

Importance of administrative records

The importance of administrative records stems from the long tradition of using such records by different administrations to compile official statistics mainly as a by product of administration. In addition administrative records have been known to be important in the:

- advancement in information technology and E-government development;
- reduction of respondents burden;
- general cost-efficiency of administrative data; and
- raising the status of official statistics for measuring good governance, etc.

Availability of administrative statistics

Administrative statistics are available in many countries through the national statistical system and in particular by contacting the national statistical office, department or line ministries concerned. In general, some statistics from administrative records are readily available in many countries. It should, however, be noted that because administrative records are mainly meant for administrative purposes, they may not be very ideal for generating statistical indicators.

2.1.4 Coordination issues on producing and monitoring MDG indicators

This section discusses issues pertaining to the production and monitoring of MDG indicators at national level. For purposes of producing, monitoring and ultimately evaluating attainment of the goals, a database on MDG indicators has to be created in each country. Due to the variety

of indicators included in the MDGs, the resulting database will be composed of information generated various means, by various groups, using various strategies and methodologies, in varied frequencies. We shall therefore address the many issues that relate to producing and monitoring of MDG indicators.

Definition of National Statistical System

Coordinating work on MDGs necessarily involves members of the National Statistical System (NSS) e.g. the national statistical office (NSO), line ministries, users and other agencies e.g. training and research institutions. The NSS is defined to include the following groups of stakeholders: producers of statistical information; users of statistical information; suppliers of statistical information-households, enterprises; research and training institutions; and arrangements for data collection and management. In order to achieve coordination among all actors, there is need to have a lead agency which in many countries is recognized to be the NSO which has the authority by law as the major statistical agency responsible for collecting, compiling, classifying, publishing, and disseminating official statistics. The NSO as a lead agency should also produce many of the MDG indicators.

Coordination tools

There are a number of coordination facets of statistical work that should be taken into account:

- harmonization of concepts, definitions, classifications and sampling frame;
- coordination of statistical programmes and the use of non-statistical government files; and
- adoption and use of international standards.

Advantages of coordination

A number of advantages of coordination of statistical work should be recognized:

- outcomes of various data collections tend to be comparable and consistent;
- duplication of effort and undue burdening of respondents are avoided;
- costs of collection and producing statistics are likely to be minimized; and
- the position of official statistics is strengthened and its image enhanced;

Problems in coordinating statistical work on MDG indicators

A number of countries may face some of the following problems in coordinating work on MDG indicators:

- no lead agency appointed for producing and monitoring MDG indicators. As a result requests from stakeholders on MDG indicators not centralized;
- lack of quality administrative records in line ministries;
- data received from some agencies/institutions not updated;

- late submission of data to the lead agency for updating the database; and
- lack of competence of agencies to produce the relevant MDG indicators;
- lack of gender disaggregated data
- lack or inadequate human and financial resources for production of indicators.

A number of pertinent issues

At national level, a lead agency that will coordinate work on producing and monitoring MDG indicators should be appointed. This lead agency should be the repository of all data and metadata on MDG indicators and should have the authority to verify the quality of data used for compiling the MDG indicators.

If the Statistical legislation of the country already includes elements of coordination of statistical work by the NSO, advantage should be taken of this law to assign the coordination function of MDG indicators to the NSO. Where possible the law could be amended to include MDG indicators.

The creation of a database on MDG indicators should be the responsibility of the lead agency for producing and monitoring MDG indicators. Likewise creation of a Website on MDG indicators and the calendar for disseminating MDG indicators should be the responsibility of the lead agency.

MDG indicators should be designated, among others, as official statistics of the countries.

Measures to improve national coordination of MDG indicators

A number of countries may consider undertaking some of the following activities in order to improve coordination of work on MDG indicators:

- establish a committee on MDG indicators composed of producers, users and research and training institutions with relevant terms of reference;
- undertake work on implementation of internationally agreed concepts and definitions related to MDG indicators in the NSS;
- prepare the national strategy for the development of statistics (NSDS);
- establishment of DevInfo for the country;
- creating a database and also a Website on MDG indicators that is updated regularly; and
- strengthen the legal and institutional framework of the NSS.

2.2 Secondary data sources

What is Secondary data?

In general, Secondary data is primary data collected by someone else or for purposes other than the current one. For example, data collected by line ministries through administrative

records and other means is primary data for the line ministries, but it is secondary data to other users of the data.

For purposes of MDG indicators we shall define Secondary data as data generated by other institutions that adapt primary data from countries. For example, institutions may generate indicators through their own computations and at times imputations. In this case Secondary sources of data include data generated by the World Bank, the United Nations Statistics Division (UNSD), ILO, UNICEF, WHO, UNESCO.

If missing MDG indicators are estimated using national data on related variables or data from “similar” countries and/or modelling techniques, these can also be considered by countries as secondary data.

Secondary data saves time that could otherwise be used for collecting data or imputing the indicator. It enables the MDG researcher to build a larger and richer database that would probably be unfeasible.

Conditions under which Secondary data source may be used by countries

Secondary data sources for estimating MDG indicators may be necessary. These data may be used when the institution compiling the country MDG indicator(s):

- did not produce the data or indicator;
- data at country level does not exist but has been estimated using statistical techniques by agencies such as the World Bank;
- the national MDG indicator has been estimated by an agency and the country feels that, that estimate is meaningful and reasonable to adopt; and
- available country data covers only some regions/districts/counties etc. and could not be used to estimate the MDG indicator.
- However, countries/institutions should be consulted before such data are published.

CHAPTER 3: METHODOLOGIES AND CHALLENGES ASSOCIATED WITH THE DESIGN AND COLLECTION OF DATA

3.1. Primary data sources

In this chapter we briefly delve into the methodological aspects relating to data sources, namely Censuses and Household Surveys. The aim is to present the generic aspects of what a good census household survey is. We also present their limitations. It is our strong belief that in order to objectively measure and monitor MDGs, the data sources from which the data are generated should be meticulously and scientifically designed and the operations well planned and implemented.

3.1.1 Population and Housing Censuses

In Africa, the traditional census approach is still the norm. The traditional census is a one of the most massive and complex peace time operations a country can undertake [23]. It involves collecting statistical information for individuals and households on a number of selected subjects/topics at a specified time covering the whole or designated parts of the country. The collected information is subsequently processed, evaluated, analyzed and disseminated. The census requires mapping or delineation of the whole country into enumeration areas; and recruitment, training, deployment of an army of enumerators; data capturing and processing from a large quantity of questionnaires; analyzing the collected data; and disseminating the census results.

Demographic and socio-economic data are collected by enumerators canvassing households in different enumeration areas in the country. Enumerators are assigned to cover each enumeration area by canvassing all households and collecting information of each individual in the household. It is important to cover all households and individuals in the enumeration area during a specified short period of time, in order to meet the requirement for *universality* and *simultaneity* enumeration. Short and long questionnaires may be used in the context of the traditional census. The long questionnaire is usually administered on a sample basis. The questionnaire usually contains detailed questions on particular subjects. Examples of topics commonly covered in the long questionnaire include fertility, and economic activity, just to

mention a few. Both types of questionnaires are administered during the same census time frame. Although estimates based on the long questionnaire are from a sample, by convention, they are considered to be census outputs.

Basic characteristics of a census

We provide below a summary of some basic characteristics of a census [24].

- i) Individuals and each household are enumerated separately. The characteristics are also recorded separately for each individual and household.
- ii) The aim in a census is to cover the whole designated population in the country.
- iii) The coverage is generally simultaneous to the extent possible.

Censuses are conducted at defined intervals, for example, every 10 years. Uses of a census

The following are the usefulness of a census pertaining to measuring and monitoring of indicators: (i) it provides information on the size, composition and distribution of the population with its demographic and socio-economic characteristics; (ii) provides small area statistics making it possible to compute MDG indicators at sub-regional levels; (iii) It is an indispensable source of the sampling frame for use in designing inter-censal household sample surveys, which as we observed in chapter 2 are the major source of MDGs data. In general, the traditional census provides a snapshot of the demographic and socio-economic characteristics of the population at a specified point in time.

Census planning

The planning of the entire census and its various phases must be done with great care and in a timely manner. A small oversight in the planning process may invariably lead to serious defects which could be reflected in erroneous census results. In addition, the oversight may lead to costly unplanned operational processes. It is, therefore, imperative to recognize the central role careful and timely planning plays in contributing to a successful census. In addition, there is a critical requirement for establishing appropriate organizational and administrative arrangements for conducting the census. Documented implementing procedures are indispensable.

Phases of a census programme

A census programme can be calibrated into three broad phases, namely, pre-enumeration, enumeration and post enumeration. These phases can further be refined as indicated below.

- Preparatory work
- Field enumeration

- Data processing
- Analysis and evaluation
- Building of databases
- Dissemination of results

Features of a census

A traditional census has some features that are unique compared to a household survey and an administrative record [23].

Individual enumeration: For each person in the household separate information is collected. It is common for a proxy respondent to report such information.

Universality: This refers to coverage of areas designated for the census such as the whole country or parts of the country. If one questionnaire is used, it is applied to all persons in the country in line with the coverage rules. If a long questionnaire/form is used, the topics are covered on a sample basis implying that a probability sample selection is invoked. However, since the collection of data through the long form coincides with the application of a short form the survey is incorporated as part and parcel of the census.

Simultaneity: Census information should, to the extent possible be collected almost at the same moment in time. When information collected has a longer reference period, it should be expressed relative to the instant.

Periodicity: In general censuses are decennial, thus taken at intervals of 10 years; however, there are exceptions some censuses are taken at the interval of only five years.

Limitations of a census

A census has some limitations which are summarized below:

- A census being a massive operation which is designed to be completed in a very short time usually covers limited topics with minimal detail and is prone to errors;
- The use of proxy respondents, in many African countries if not all, is the norm. The proxy respondent may not be in a position to know detailed information on some aspects included in the census questionnaire to accurately report on some individuals in a household; and
- A census is a costly venture; as a result some African countries have not conducted censuses for a long period. In addition, funds for census evaluation such as the conduct

of a post enumeration survey may not be provided; if they are in most cases they are inadequate.

3.1.2 Household Surveys

Household surveys are representative probability random samples in which households are either second stage or ultimate sampling units [25]. They are a major source of socio-economic, demographic and other statistics which are relevant to the measuring and monitoring of MDG indicators. As not all data need to be collected through censuses and administrative records, additional and emerging requirements are and can be satisfied through household surveys.

Probability sampling is the basis for designing household surveys in African countries. This is the context by which ultimate elements, households and geographic clusters are selected in the overall sample. Sampling is a technique where a part of the population is selected and results from the selected part are generalized on the target population. Under a probability sample design the following has to be satisfied:

- (i) Each element should have a known mathematical chance (probability) of inclusion or being selected;
- (ii) The probability of selection is greater than zero; and
- (iii) The probability should be numerically calculable.

Sample design

In short it refers to sample selection and estimation. In practice, sample design pertains to determination of sample size and structure taking into account costs of the survey. The preferred sample design is one which results in the highest precision for a given cost of the survey or the minimum cost for a specified level of precision [26].

Basics for designing a probability sample require that: (i) the population for which the sample embraces (target population) should be clearly defined; (ii) there must be a sampling frame or frames; (iii) purpose of the survey must be clearly spelled out, in terms of content, analytical variables and domains for which results will be disseminated (e.g. do you intend to produce estimates at rural/urban, districts, Provinces and national levels?); (iv) costs should be taken into account, thus a budget is essential; (v) precision requirement should be stated, this is helpful in determining sample size [24].

Procedures for sample selection and implementation

The selection and implementation procedures should be followed. Thus: (i) each element in the population should be in the sampling frame; (ii) the selection should be based on a random process that assigns each unit /element in the frame a specified probability of selection; (iii)

enumeration should be restricted to selected units; (iv) in estimating population totals data from each selected unit should be weighted by the inverse of the selection probability of the unit.

It should be noted that randomization is a safe way to overcome the effects of unforeseen biasing factors. The method of sample selection used depends of the sampling scheme to be used. The more complex the sample design the more demanding the selection procedures [27]. Most household surveys conducted in Africa, to generate data for measuring and monitoring MDGs, are complex therefore use multi-stage sampling designs.

Why is probability sampling for large-scale household surveys necessary?

- a) It makes it possible to cover the whole target population in sample selection.
- b) It facilitates the generalization of the sample results to the target population.
- c) It justifies the calculation of sampling errors.

Survey units

In designing a survey, the first requirement is to define the target *population* which is the total collection of all elements. The latter are units for which statistical information is sought. In household surveys the common ultimate units are persons and households.

Observation units: The units from which the observations are made for example, persons in assessing mortality in a household.

Sampling units: Sampling units are used for selecting elements included in a sample.

Sample units: These are selected sampling units

Sampling frame: The frame is used to identify and select units in the sample and also used as a basis for making sample estimates.

- (i) **List frame:** contains elements or sampling units that can directly be selected from a list, for example, a list of schools in a district or a list of persons in a household.

Area frame: Area frames form part of multi-stage sampling frame(s) that are commonly used in household surveys in Africa. The frames are used for selecting samples at one or more stages. In a two-stage sample design the frame at the first stage will consist of clusters, for example, enumeration areas at the second stage, in selected clusters, households consist of the second stage frame. Properties of a good frame

The frame should be:

- Exhaustive,
- Mutually exclusive,

- Accurate, current and up-to-date.

Clustering in household surveys

In selecting samples with respect to household surveys, as earlier stated, it is common to use a multi-stage sample design. Under cluster sampling the higher level units of selection such as enumeration areas (EAs) which contain a number of elementary units are selected as clusters. Thus the cluster is selected instead of selecting an element from a list of elementary units.

Why are clusters used as sample units?

There are a number of compelling reasons which merit the use of clusters in sampling, among them: a) clustering reduces travel time and cost related to data collection in the field; (b) supervision of survey field work is improved as supervisor's movements are restricted to the selected clusters; (c) the cost of construction of the frame is minimized as it is conducted in stages (in multi-stage sampling only the first stage sampling requires the listing of all primary sampling units(PSUs), at the second stage, for example, listing (frame) of households only necessary in selected PSUs); (d) cost per element is lower compared to simple random sampling (SRS); (d) frames of clusters tend to be more durable and therefore usable over a long period.

Features of an ideal cluster:

- Should have clear identifiable and stable boundaries,
- The number of clusters should be relatively large,
- A cluster must be of a reasonable size,
- Clusters, preferably, should have measures of size and data for use in stratification,
- Census EAs are usually used as PSUs in many house hold surveys in Africa.

When the use of EAs becomes problematic:

- When there are inadequate maps,
- Incomplete delineation of EAs,
- EAs with poor measures of size,
- When there is high variability in sizes of EAs.

Single-stage cluster sampling

In general, it is obvious that it is not feasible to have a current list of all households in a country at the time of the survey. The way out is to have a list of enumeration areas from which a sample can be selected. Then all households in the selected enumeration areas are enumerated. In this case the probability of selecting the household is the same as that of selecting the EA.

Multi-stage sample design

This design is commonly used when surveying hierarchical populations, for example, persons within households in selected EAs. In this design the first stage units are called Primary Sampling Units (PSUs), for example EAs in household surveys. The second stage units are called Secondary Sampling Units (SSUs) e.g. households and the last sampling units are designated as ultimate sampling units (USUs), examples are persons selected from households in a three-stage sample design. In a multi-stage sampling design, at the first stage you draw a sample of PSUs; at the second stage you select SSUs, while at the final stage ultimate sampling units are selected [27].

As earlier stated two-stage sample designs are commonly adopted in many African countries. However, this does not preclude countries adopting a sample design beyond two-stages. We must reiterate that the many stages in the design the more complex are the estimation procedures.

Sample selection in stages has benefits in the selection process itself. The two-stage sample design, in practice, involves selecting a sample with probability proportional to size of say enumeration areas preferably stratified at the first stage. A current listing of households is usually developed in the selected first stage units. This is followed by a selection of households at the second stage.

The two-stage design may be appealing in many ways but especially for its simplicity. The common practical features of a two-stage sample design are as follows:

- The sample design can be self-weighting or otherwise selected with probability proportionate to size;
- The enumeration areas tend to be of convenient size, thus not too big, partly to facilitate reasonable distribution of workloads to enumerators;
- The enumeration areas are mapped or delineated during the census mapping exercise and preferably updated during the inter-censal period.

Determining sample size for a survey

In choosing a sample size for a survey a number of factors are taken into account [28]:

- a) Resources available at the disposal of the survey such as money, personnel, equipment and time the survey should take to implement. The extent of resource requirement may also be dictated by the sample size of the survey.
- b) Expected accuracy of the results also plays a role in determining the sample size. It is important to know the acceptable margin of error and the level of confidence required. Where the acceptable margin of error is defined as the accuracy expected from the survey. The smaller the acceptable margin of error the larger the sample size required.
- c) Sample design: Sample designs have different efficiency levels. Some are more efficient than other. For cluster sample designs for the same precision will necessitate a larger sample size compared to a simple random sampling design.
- d) In cases where the event being measured is rare, there is need for a larger sample size.
- e) Expected non-response: if a large percentage of non-response is expected a larger sample size will be needed.
- f) Variability of the variable being measured: if there is great variability in the variable being measured a larger sample size is necessary than otherwise.
- g) Clustering effect: If there is a high homogeneity of elements in clusters there will be need for a larger sample size
- h) Number and sizes of analysis domains: the more analytical domains are envisaged, the larger the overall sample size.

Summary of merits of the Multi-stage design

- a) At the national level the frame construction is only restricted to EAs which are primary sampling units.
- b) Data collection is more efficient in that: (i) field work is relatively easier compared to a simple random design; (ii) costs are lower; (iii) supervision is easier; (iv) many units can be sampled within selected EAs.

Limitations of multi-stage design

- a) The estimation procedures tend to be more complex

- b) Estimates, in general, show higher variability relative to simple random sample design of the same sample size.

Databases

According to Sugdren (1995) [29] there are three major outputs from a household survey.

Macro data: statistics representing estimates for certain statistical characteristics.

Micro data: observations of individual units underlying the macro data produced by the survey.

Metadata: Data describing the meaning, accuracy, availability and other important features of underlying micro- and macro-data.

Databases are commonly designed in the form of multidimensional data tables for the purpose of providing more versatile access to survey results as well as enhanced ability to refer to them, for example on a Website [24].

Estimates

Estimates from surveys include means, totals, proportions and ratios. Refer to chapter 5 in the handbook to a number of MDG estimates that can be obtained from surveys. It is also advisable to calculate sampling errors that give an indication of accuracy.

3.1.3 Administrative data

As explained earlier in 2.1.3 administrative records are collected regularly as part of an administrative process. The quality of these records depends on the coverage, timeliness, frequency of updating, validity, reliability and consistency of the derived statistics.

There are three methods of collecting administrative records data:

- mail questionnaires or forms;
- forms completed as part of administrative routine/reporting obligation under a legislation; and
- direct interview by enumerators.

Advantages and challenges of each method [9]

According to Moser and Kalton (1976) [30], the following are the advantages and challenges of different methods of collecting administrative data:

Table 3.1: Advantages and disadvantages of different methods of collecting administrative data

Method	Advantages	Challenges
Mail questionnaire	1. avoids interviewer errors	1. might not get careful feedback

or forms	<ol style="list-style-type: none"> 2. cannot complete anonymously 3. inexpensive to administer 4. easy to compare and analyze 5. administer to many people/institutions-wide 6. coverage can get lots of data 7. many sample questionnaires already exist 	<ol style="list-style-type: none"> 2. wording can bias client's responses 3. are impersonal in surveys, may need sampling expert 4. doesn't get full story 5. may be good only when questions are sufficiently simple 6. may not be sure if right respondent completed questionnaire 7. no opportunity to supplement respondent answers by observational data 8. response rate usually low
Forms completed as part of administrative routine or legislation	<ol style="list-style-type: none"> 1. avoids interviewer errors 2. inexpensive to administer 3. easy to compare and analyse 4. administer to many people/institutions-wide 5. coverage can get lots of data 6. many sample questionnaires already exist 7. can provide facts that can be verified easily 8. no need for sampling expert 8. get full story 	<ol style="list-style-type: none"> 1. lack of immediate feedback at the time of completion 2. ambiguous wording cannot be verified immediately to avoid bias 3. follow-up with respondent may be difficult
Direct interview by enumerators (e.g. sample civil registration)	<ol style="list-style-type: none"> 1. get full range and depth of information 2. develops relationship with client 3. can be flexible with client 	<ol style="list-style-type: none"> 1. - can take much time 2. - can be hard to analyze and compare 3. - can be costly 4. - interviewer can bias client's responses 5. - used mainly where records are not regularly kept

All countries, worldwide, collect and process administrative data for decision making at different levels of administration. The way administrative data are organized varies from country to country. In some countries they are organized by statistical personnel while in others

they are organized by non-statistical personnel. In some countries administrative data are published and disseminated while others simply use them as they are and do not go beyond that stage.

The challenges that countries face in developing or using administrative data are many and include: the quality of the data (accuracy, timeliness, etc.), availability of the data (publication and dissemination), lack of qualified human resources for collection and analysis of administrative data, non availability of databases for storage of administrative data, etc.

3.2 Secondary data sources

In general there are four methods of secondary data collection. These include the follows:

- (i) coordination with relevant research agencies;
- (ii) Internet search, using online resources to gather MDG indicators imputed by other agencies. This method is said not to be very reliable and requires appropriate citation and critical analysis of the findings;
- (iii) library search and indexing. This technique requires going through written texts that have already done similar work and utilizing their researches for the task at hand; and
- (iv) news papers, magazines, journals and other similar periodicals containing MDG data.

From the above four methods (i) is commonly used at country level followed by (ii) particularly with regard to accessing data at the international level. Methods (iii) and (iv) are rarely used by countries.

There are many challenges to be considered when using secondary data sources. Among them are issues of data quality because the source may not always be credible. Even data from official records may be unreliable because the data is only as good as the records themselves, in terms of methodological validity and reliability.

Overall, there are a number of issues to be considered when using secondary data sources including purpose for collecting the data, type of data and when was the data collected, the methods used, responsible agency/unit, the way the data is organized and consistency of the data from other sources.

CHAPTER 4: DATA QUALITY ISSUES FOR MDG INDICATORS

In this Chapter, we shall define data quality and characteristics of good quality data. We shall also discuss the importance of good quality data for computation of MDG indicators.

4.1 Definition of data quality

The quality of good statistics can be determined on the basis of some criteria. The Economic and Social Commission for Asia and the Pacific in its manual on Training Statisticians has defined the basic criteria to include the following [31]:

- (a) accuracy of the statistical data;
- (b) validity of different characteristics as measures of the concepts they are intended to measure;
- (c) uniformity with respect to time reference or other qualifications of the characteristics; and
- (d) completeness with respect to coverage of the entire population or sample.

Quality control of different types of errors is vital to ensure the accuracy of statistics. These errors arise due to many factors such as: faulty concepts and definitions; faulty sample design and selection e.g. of individuals; observational errors; processing errors; presentation and publication errors.

Statistics South Africa, in its publication on *South African Statistical Quality Assessment Framework (SASQAF) (2008)* [32] has defined data quality in terms of “fitness for use” and also in terms of the eight dimensions of quality namely: relevance, accuracy, timeliness, accessibility, interpretability, coherence, methodological soundness and integrity. The institutional and organizational conditions have an impact on data quality. These include

adequate legal environment and availability of adequate human, financial and technological resources.

4.2 Characteristics of good quality data:

We shall describe the characteristics of good quality data in terms of the eight dimensions of good quality statistics as defined by Statistics South Africa as follows:

1. Relevance: This is the degree to which the statistics meet the needs of the users/stakeholders.
2. Accuracy: This is achieved through proper quality control over the different operations from designing to presentation. It is measured by extent of sampling error and non-sampling error.
3. Timeliness: This refers to the delay between the time the information was available to the time it was released and the frequency and punctuality of release.
4. Accessibility: This refers to the ease with which the information can be made available by the agency and also aspects such as cost of the information.
5. Interpretability: Can users understand the information provided? Is the metadata available? How about the concepts, definitions and classifications?
6. Coherence: This refers to the degree to which available statistics can be successfully linked/integrated with other statistical information within a broad analytical framework and over time. For example, do concepts and classifications including methodology promote coherence?
7. Methodological soundness: Application of standard methodologies for example the use of SNA framework fosters national and international comparability.
8. Integrity: This refers to the values that maintain users' confidence in the agency producing statistics.

4.3 Importance of good quality data for computation of MDG indicators

The use of reliable, high quality data is crucial for the imputation of MDG indicators. The data used for estimation of MDG indicators should be the best available from official sources and should be chosen to reflect nationally agreed targets. Whenever possible, disaggregated data should be used to highlight disparities across gender, ethnicity, geographical location, age or other dimensions of inequality.

Sources of data and other information should be clearly indicated. Where data are not available or not considered reliable, limitations should be noted and an effort made to avoid conveying a false sense of accuracy. To monitor targets for which good quality data do not exist, proxy indicators can be used.

While the quality and reliability of data sources can be improved, a more difficult problem is the complete absence of data. This is often the case in conflict and post-conflict countries where surveys may not have been conducted for many years.

Good quality statistics derived from sources such as household surveys, population censuses, academic research and administrative data are of special importance. In many MDG studies, it has been observed that MDG reporting is most effective when integrated into existing monitoring systems using official data. Separate survey data should be used only when other sources are not available.

CHAPTER 5: INDICATORS FOR MEASURING PROGRESS OF MDGS

This Chapter will deal with (i) the definition of indicators for each target, (ii) rationale, (iii) the specific sources of data, (iv) method of estimation or imputation and (v) gender issues. Many of the targets have more than one indicator and as such each of the indicators will be treated according to the four points listed above.

5.1 Goal 1: Eradicate extreme poverty and hunger

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

INDICATOR 1.1: PROPORTION OF POPULATION BELOW \$1 (PPP) PER DAY

Responsible international agency:

The World Bank

Definition:

The Proportion of population below \$1 per day is the percentage of the population living on less than \$1.25 a day at 1993 international prices. The \$1 a day poverty line is compared to consumption or income per person and includes consumption from own production and income in kind. Because this poverty line has fixed purchasing power across countries or areas, the \$1 a day poverty line is often called an absolute poverty line

(https://www.spc.int/mdgs/MDGs/indicator_1_definition.htm) [33].

Rationale:

The indicator allows for comparing and aggregating progress across countries in reducing the number of people living under extreme poverty and for monitoring trends at the global level.

Sources of data:

Data on Population and Housing Censuses are collected by countries every five or ten years. Data on household income, consumption and expenditure, including income in kind, are generally collected through household budget surveys or other surveys covering income and expenditure.

When available, household consumption data are preferred to income data. National statistical offices, sometimes in conjunction with other national or international agencies, usually undertake such surveys.

Only surveys that meet the following criteria are used: they are nationally representative, include a sufficiently comprehensive consumption or income aggregate (including consumption or income from own production), and allow for the construction of a correctly weighted distribution of consumption or income per person.

The most recent estimates of PPP for developing countries are based on data collected between 1993 and 1996, standardized to 1993 international prices. Global price comparisons are carried out by the International Comparisons Program of the World Bank and others. New estimates of PPPs were expected in 2006.

Method of computation:

The percentage of the population living on less than \$1.08 per day is estimated at say 1993 prices or 2006 prices as the case may be using available data. Matching of households' population and their total expenditures is usually undertaken.

The Head Count Index is sometimes used:

$$PO = \frac{q}{N}$$

where

q = number of people 'below poverty line'

N = total population

Gender issues:

Households headed by women tend to have lower incomes and are therefore more likely to have incomes per person lower than \$1. However, this relationship should be carefully studied to take into account national circumstances and the definition of head of household adopted in data collection, which is not necessarily related to the chief source of economic support. Whether households are headed by women or men, gender relations affect intra-household resource allocation and use. It is not possible to estimate gender-disaggregated poverty rates from available data. On disaggregation issues, it is not possible to disaggregate this indicator by gender since expenditure data is usually on a household basis.

INDICATOR 1.2: POVERTY GAP RATIO

Responsible international agency:

The World Bank

Definition:

Poverty gap ratio is the mean distance separating the population from the poverty line (with the non-poor being given a distance of zero), expressed as a percentage of the poverty line (http://wwwx.spc.int/mdgs/MDGs/indicator_2_definition.htm) [34].

That is: Poverty gap is the average, over all people, of the gaps between poor people's living standards and the poverty line. Poverty gap ratio expresses the poverty gap as a percentage of the poverty line.

Rationale:

Poverty gap indicates the average extent to which individuals fall below the poverty line (if they do). The indicator measures the "poverty deficit" of the entire population, where the poverty deficit is the per capita amount of resources that would be needed to bring all poor people above the poverty line through perfectly targeted cash transfers.

Sources of data:

The indicator is produced by using nationally representative household surveys that are conducted by national statistical offices or by private agencies under the supervision of government or international agencies and obtained from government statistical offices and World Bank Group country departments.

Only nationally representative surveys that are of good quality, contain sufficient information to produce a comprehensive consumption or income aggregate, and allow for the construction of a correctly weighted distribution of per capita consumption or income are used.

Method of computation

The poverty gap ratio is the sum of the income gap ratios for the population below the poverty line, divided by the total population, which can be expressed as follows:

$$PG = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]$$

where z is the poverty line, y_i is the income of individual i , q is the number of poor people and n is the size of the population. The poverty gap can also be expressed (and thus calculated) as the product of the average income gap ratio of poor people and the headcount ratio, that is,

$$PG = I * H$$

where

$$H = \frac{q}{n}, \quad I = \frac{\sum y_i}{n}$$

where

$$y_i = \frac{1}{q} \sum_{j=1}^q y_{ij}$$

All these formulas are calculated based on data on individuals (y_i as individual income or consumption). If household-level data are used, the formulas have to be adjusted by the weight w_i , which is the household size times sampling expansion factor for every household i .

Example

Assume poverty line is \$90 and $N=4$, what is the poverty gap for the three countries

Country	Expenditure for each individual (\$) (N=4)				Poverty gap ratio
A	100	80	95	150	-0.17
B	85	125	100	190	-0.28
C	160	150	70	145	-0.15

Gender issues:

Households headed by women may be concentrated in the bottom fifth (Poorest). However, this relationship should be carefully studied to take into account national circumstances and the definition of head of household adopted in data collection, which is not necessarily related to being the chief source of economic support. Whether households are headed by women or men, gender relations affect intra-household resource allocation and use.

INDICATOR 1.3: SHARE OF POOREST QUINTILE IN NATIONAL CONSUMPTION**Responsible international agency:**

The World Bank

Definition:

Share of the poorest quintile in national consumption is the income that accrues to the poorest fifth of the population [35].

Rationale:

The indicator provides information about the distribution of consumption or income of the poorest fifth of the population. Because the consumption of the poorest fifth is expressed as a percentage of total household consumption (or income), this indicator is a “relative inequality” measure. Therefore, while the absolute consumption of the poorest fifth may increase, its share of total consumption may remain the same (if the total goes up by the same proportion), decline (if the total goes up by a larger proportion) or increase (if the total goes up by a smaller proportion).

Sources of data:

For international purposes, this indicator is calculated by the World Bank, but it may also be calculated by national agencies. The World Bank Group Development Research Group produces the indicator based on primary household survey data obtained from national statistical agencies and World Bank country departments.

Data on household income or consumption come from household surveys. Because underlying household surveys differ across countries in methods and type of data collected, the World Bank tries to produce comparable data for international comparisons and for analysis at the aggregated level (regional or global). Survey data provide either per capita income or consumption. Whenever possible, consumption data are used rather than income data. Where the original household survey data are not available, shares are estimated from the best available grouped data.

Household budget or income surveys are undertaken at different intervals in different countries. In developing countries, they typically take place every three to five years.

Method of computation

Household income and its distributions are estimated from household surveys. Household income is adjusted for household size to provide a more consistent measure of per capita income for consumption. Household income is divided by the number of people in the household to establish income per person. The population is then ranked by income. The income of the bottom fifth is expressed as a percentage of aggregate household income. The calculations are made in local currency, without adjustment for price changes or exchange rates or for spatial differences in cost of living within countries, because the data needed for

such calculations are generally unavailable.

The percentile chosen here is the bottom fifth (quintile). The proportionate share of national household income of this group may go up while the proportionate share of some other percentile, such as the bottom tenth (decile), may go down, and vice versa.

Gender issues

Households headed by women may be concentrated in the bottom fifth. However, this relationship should be carefully studied to take into account national circumstances and the definition of head of household adopted in data collection, which is not necessarily related to the chief source of economic support. Whether households are headed by women or men, gender relations affect intra-household resource allocation and use.

Target 1B: Achieve full and productive employment and decent work for all, including women and young people

INDICATOR 1.4: GROWTH RATE OF GDP PER PERSON EMPLOYED

Responsible agency:

The World Bank, ILO, OECD, UNSD, etc.

Definition:

Growth rate of GDP per person employed is the Gross Domestic Product (GDP) per person employed <http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=770> [36].

Rationale:

This indicator represents labour productivity i.e. the amount of output (GDP) per unit of input (person employed).

Sources of data:

This data (GDP and employment) is readily available from national statistical offices.

Method of computation:

This indicator is computed as a ratio of GDP to number of persons employed:

- The numerator is the GDP, and
- The denominator is the number of persons employed.

Gender issues:

Efficiency of women's labour should be as high as men's. Some studies have shown that productivity cannot be disaggregated by sex so this indicator cannot be used for gender studies [37]

INDICATOR 1.5 EMPLOYMENT-TO-POPULATION RATIO**Responsible international agencies:**

The World Bank, ILO, OECD, UNSD, etc

Definition:

The employment-to-population ratio is the proportion of a country's working-age population that is employed [36].

Rationale:

This indicator gives a picture of the relationship between employment and population.

Employment is defined as persons above a specified age who performed any work at all, in the reference period, for pay or profit (or pay in kind), or were temporarily absent from a job for such reasons as illness, maternity or parental leave, holiday, training or industrial dispute. Unpaid family workers who work for at least one hour should be included in the count of employment, although many countries use a higher hour limit in their definition.

For most countries, the working-age population is defined as persons aged 15 years and older, although this may vary slightly from country to country and at times from age 10.

Sources of data:

The source of data is the population data from the population and housing census or estimates of population during the inter-censal period. Employment data is obtained from surveys or administrative records. Census data is available every ten or five years. Employment data is available annually or when a national employment survey is conducted.

Method of computation:

This indicator is generally, computed as a ratio:

- the numerator is the number of persons employed,
- the denominator is the population.

Gender issues:

Comparing men and women ratios provides an idea of equal employment opportunities. This ratio should be equally high for men and women [37].

INDICATOR 1.6 PROPORTION OF EMPLOYED PEOPLE LIVING BELOW \$1 (PPP) PER DAY**Responsible agencies:**

The World Bank, ILO, OECD, UNSD, etc.

Definition:

The proportion of employed persons living below \$1 (PPP) per day, or working poor, is the share of individuals who are employed, but nonetheless live in a household whose members are estimated to be living below the international poverty line of \$1.25 a day, measured at 2005 international prices, adjusted for purchasing power parity (PPP) (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=759>) [38].

Sources of data:

Labour force surveys or other surveys collecting employment data conducted at national level. These surveys are usually conducted once in ten years.

Rationale:

This indicator gives a picture of the relationship between poverty and employment.

Method of computation

This indicator is generally, computed as a ratio:

- the numerator is the number of employed people living below \$1 (PPP) per day, and
- the denominator is the number of employed people.

The ILO calculates upper- and lower-bound estimates of the working poor. Upper bound estimates for the working poor indicator are calculated using the equation: ($working\ poor_u = poverty\ rate * population15$), where *population15* is equal to the population aged 15 and above. The lower-bound estimate of the working poor is calculated using the equation: ($working\ poor_l = poverty\ rate * labour\ force15$), where *labour force15* is the labour force aged 15 and above.

Gender issues:

There are probably more women workers than men workers who are poor. This indicator should decrease more (or increase less) for women than for men [37].

INDICATOR 1.7: PROPORTION OF OWN-ACCOUNT AND CONTRIBUTING FAMILY WORKERS IN TOTAL EMPLOYMENT

Responsible international agencies:

52ILO, UNSD, The World Bank, etc.

Definition:

Vulnerable employment is defined as the sum of the employment status groups of own-account workers and contributing family workers

<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=773> [39].

Own-account workers are those workers who, working on their own account or with one or more partners, hold the type of jobs defined as a self-employment jobs (i.e. remuneration is

directly dependent upon the profits derived from the goods and services produced), and have not engaged on a continuous basis any employees to work for them during the reference period.

Contributing family workers, also known as unpaid family workers, are those workers who are self-employed, as own-account workers in a market-oriented establishment operated by a related person living in the same household.

Rationale:

This indicator provides a measure of the share of vulnerable employment.

Method of computation:

This indicator is generally computed as a ratio:

- the numerator is the sum of
 - number of own-account workers (self-employed workers without employees) and
 - number of contributing family workers (who hold self-employment jobs in a market-oriented establishment operated by a related person living in the same household).
- The denominator is the number of employed people.

Self-employment jobs are jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced.

Gender issues:

There are probably more vulnerable women workers than men workers. This indicator should decrease more (or increase less) for women than for men [37]

Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

INDICATOR 1.8: PREVALENCE OF UNDERWEIGHT CHILDREN UNDER-FIVE YEARS OF AGE

Responsible international agencies:

UNICEF in collaboration with the World Bank and WHO

Definition:

Prevalence of underweight children under-five years of age is defined as the percentage of children under five whose weight for age is less than minus two standard deviations from the median for the international reference population aged 0 to 59 months.

Rationale:

- (i) The reference population adopted by the WHO in 1983 is based on children from the United States, who are assumed to be well nourished (the NCHS/WHO reference population);

(ii) Child malnutrition, as reflected in body weight, is selected as an indicator for several reasons.

- it is monitored more closely than adult malnutrition,
- it can affect health in later life,
- it may be taken as an indicator of malnutrition in the population.

Sources of data:

The data sources are household surveys including Multiple Indicator Cluster Surveys (MICS) [56] and Demographic and Health Surveys (DHS) and other national level household surveys. Household surveys are generally conducted by countries every 3-5 years.

Method of computation:

- for each age group in the National Center for Health Statistics (NCHS)/World Health Organization (WHO) table of child weights, the weights of national child population are compared with the weights given in the table [40];
- the percentages of children whose weights are more than two standard deviations less than the median are then aggregated to form the total percentage of the children under 5 who are underweight.

(Data available at country level usually show malnutrition for under-five years of ages (percentage) by underweight, stunting and wasting)

Gender issues:

The data from national household surveys generally show no significant differences in underweight prevalence between boys and girls. However, those trends should continue to be monitored, particularly at the sub national level and within subgroups of the population.

INDICATOR 1.9: PROPORTION OF POPULATION BELOW MINIMUM LEVEL OF DIETARY ENERGY CONSUMPTION

Responsible international agency:

Food and Agricultural Organization of the United Nations (FAO)

Definition:

The proportion of population below the minimum level of dietary energy consumption is defined either as:

- percentage of population whose food intake falls below the minimum level of dietary energy requirements; or
- prevalence of undernourishment; or
- percentage of population that is undernourished.

Rationale:

The key concept is based on the:

- distribution of the dietary energy consumption among the population;
- considering total food availability and inequality in access to food; and
- application of an estimated minimum for energy requirements.

Sources of data:

Food consumption surveys conducted at national level by countries.

Method of computation:

- (i) the estimates are prepared by FAO at national level and aggregated to get regional and global estimates;
- (ii) The distribution of dietary energy consumption is modelled as lognormal function;
- (iii) The minimum energy requirement level or cut-off point is estimated as a population per capita average value.

Gender issues:

Intra-household access to food may show disparities by gender. Also, cultural patterns of distribution and nutritional taboos may affect women's nutrition. Women's higher requirements for iron during pregnancy and breastfeeding may result in iron deficiency anaemia, which affects the result of pregnancy and may increase women's susceptibility to diseases. Although food consumption data do not allow for disaggregation by sex, whenever household survey data are available by sex, efforts should be made to conduct a gender based analysis.

5.2 Goal 2: Achieve universal primary education

Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

INDICATOR 2.1: NET ENROLMENT RATIO IN PRIMARY EDUCATION**Responsible international agency:**

UNESCO Institute of Statistics

Definition:

Net primary enrolment rate (NER) in primary education is the number of children of official primary school age (according to ISCED97) who are enrolled in primary education as a percentage of the total number of children of the official school age population (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=6>) [41].

Related additional definitions:

Total net primary enrolment rate also includes children of primary school age enrolled in secondary education;

Gross enrolment rate (GNER) is the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education.

Rationale:

A high Net Enrolment Rate (NER) denotes a high degree of enrolment in education by the official school-age population. The theoretical maximum value is 100%. Total NERs below 100 percent provide a measure of the proportion of primary school age children who are out of school. NERs may exceed 100% due to inconsistencies between population and enrolment data.

Sources of data:

Enrolment data reported by education ministries (generally obtained through administrative data source) or national statistical offices of the country and UN population estimates. Decennial population and housing census or its projections in between the censuses. These data are generally available at country level.

Method of computation:

The number of pupils enrolled in primary (or secondary) education who are of the official primary school age is divided by the population for the same age-group and the result is multiplied by 100. This method requires information on the structure of education (i.e. theoretical entrance age and duration of ISCED97 Level 1), enrolment by single years of age and population of the age-group corresponding to the given level of education.

Gender issues:

In situations of limited resources, families make difficult choices about sending their children to school. They may perceive the value of education differently for boys and girls. Girls are more likely than boys to suffer from limited access to education, especially in rural areas. Nevertheless, where basic education is widely accepted and overall enrolment is high, girls tend to equal or outnumber boys at primary and secondary levels.

INDICATOR 2.2: PROPORTION OF PUPILS STARTING GRADE 1 WHO REACH LAST GRADE OF PRIMARY

Responsible international agency:

UNESCO Institute of Statistics

Definition:

The proportion of pupils starting grade 1 who reach last grade of primary education, known as

the Survival Rate to last Grade of primary, is the percentage of a cohort of pupils enrolled in grade 1 of the primary level of education in a given school year who are expected to reach the last grade of primary school, regardless of repetition.

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=636>) [42]

Rationale:

The indicator measures an education system's success in retaining students from one grade to the next as well as its internal efficiency. It illustrates the situation regarding retention of pupils from grade to grade in schools, and conversely the magnitude of dropout by grade.

Survival Rates approaching 100% indicate a high level of retention and low incidence of dropout. It is important to note that it does not imply that all children of school age complete primary education. The Survival Rate is a percentage of a cohort of pupils (i.e. children who have already entered school) and not a percentage of children of school age.

Sources of data:

Enrolment data reported by education ministries (generally obtained through administrative data source) or the national statistical office. Generally available at country level.

Method of computation:

The indicator is typically estimated from data on enrolment and repetition by grade for two consecutive years, in a procedure called the reconstructed cohort method. This method makes three assumptions: drop-outs never return to school; the promotion, repetition and drop-out rates observed in the last two years remain constant over the entire period in which the cohort is enrolled in school; and the same rates apply to all pupils enrolled in a given grade, regardless of whether they previously repeated a grade.

This method requires data on the number of enrolments and repeaters in each grade of primary education in two consecutive school years.

The calculation is made by dividing the total number of pupils belonging to a school cohort who reach each successive grade of the specified level of education by the number of pupils in the school cohort (in this case the students originally enrolled in grade 1 of primary education) and multiplying the result by 100.

Gender issues:

Frequency and dropout patterns vary between girls and boys. Reasons for leaving school also differ for girls and boys and by age. Families' demand on children's time to help in household-based work is an important factor and is often greater for girls. Also important for girls are security, the proximity of school facilities and the availability of adequate sanitation and other services in schools.

INDICATOR 2.3: LITERACY RATE OF 15-24 YEAR-OLDS, WOMEN AND MEN**Responsible international agency:**

UNESCO Institute for Statistics

Definition:

Literacy rate of 15–24 year-olds, or the youth literacy rate, is the percentage of the population aged 15–24 years who can both read and write with understanding a short simple statement on everyday life (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=658>) [43]

Rationale:

The Youth Literacy Rate reflects the outcomes of primary education over the previous 10 years or so. As a measure of the effectiveness of the primary education system, it is often seen as a proxy measure of social progress and economic achievement. The literacy rate for this analysis is simply the complement of the illiteracy rate. It is not a measure of the quality and adequacy of the literacy level needed for individuals to function in a society. Reasons for failing to achieve the literacy standard may include low quality of schooling, difficulties in attending school or dropping out before reaching grade 5.

Literacy is measured crudely in population censuses, either through self or household declaration or by assuming that people with no schooling are illiterate. This causes difficulty for international comparisons. Comparability over time, even for the same survey, may also be a problem because definitions of literacy used in the surveys are not standardized

Sources of data:

Literacy surveys conducted at national level, decennial population and housing census data (primary source) on literacy or education, national household sample surveys. Other surveys sponsored internationally i.e. MICS, DHS, estimates of literacy for countries provided by the United Nations Population Division, etc.

Method of computation:

Literacy rates are computed by dividing the number of people aged 15-24 years who are literate by the total population in the same age group; the result is then multiplied by 100.

Gender issues:

Higher illiteracy rates for women are the result of lower school enrolment and early dropouts. Moreover, because women generally have less access to information and training and literacy programmes, estimates based on enrolments may overestimate literacy for girls.

5.3 Goal 3: Promote gender equality and empower women

Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

INDICATOR 3.1: RATIOS OF GIRLS TO BOYS IN PRIMARY, SECONDARY AND TERTIARY EDUCATION

Responsible international agency:

United Nations Educational, Scientific and Cultural Organization

Definition:

Ratio of girls to boys in primary, secondary and tertiary education is the ratio of the number of female students enrolled at primary, secondary and tertiary levels in public and private schools to the number of male students.

Primary*: the sum of girls enrolled in primary level education (numerator) to boys enrolled in primary level education (denominator);

Secondary**: the sum of girls enrolled in secondary level education (numerator) to boys enrolled in secondary level education (denominator);

Tertiary***: the sum of girls enrolled in post secondary level (numerator) to the sum of boys enrolled in post secondary level (denominator).

* The duration of primary level education varies from country to country. In most Africa countries, the duration varies from 6-8 years.

** The duration of secondary level education varies from country to country. In most Africa countries, the duration varies from 4-6 years.

*** The duration of tertiary education varies from country to country. In most Africa countries, the duration varies from 1-4 years or more.

For further details see ISCED [45].

Rationale:

The indicator of equality of educational opportunity, measured in terms of school enrolment, is a measure of both fairness and efficiency. Education is one of the most important aspects of human development. Eliminating gender disparity at all levels of education would help to increase the status and capabilities of women. Female education is also an important determinant of economic development.

Sources of data:

Administrative records data on enrolment at primary, secondary and tertiary levels of

education.

Method of computation:

The indicator is a ratio of the number of enrolled girls to enrolled boys, regardless of ages.

Example:

Year	Enrolment	Primary level	Secondary level	Tertiary level
2008	Girls	1999	1500	500
2008	Boys	2008	1600	700
Ratio		0.99	0.94	0.71

Gender issues:

In situations of limited resources, families make difficult choices about sending their children to school. They may perceive the value of education differently for boys and girls. Girls are more likely than boys to suffer from limited access to education, especially in rural areas. However, where basic education is widely accepted and overall enrolment is high, girls tend to equal or outnumber boys at the primary and secondary levels. The pattern is similar in higher education, but with larger differences between the two genders.

INDICATOR 3.2: SHARE OF WOMEN IN WAGE EMPLOYMENT IN THE NON-AGRICULTURAL SECTOR

Responsible international agency:

ILO, The World Bank

Definition:

The share of women in wage employment in the non-agricultural sector, (<http://mdgs.un.org/unsd//mdg/Metadata.aspx?IndicatorId=0&SeriesId=722>) [46] is the share of female workers in wage employment in the non-agricultural sector expressed as a percentage of total wage employment in that same sector.

The non-agricultural sector includes industry and services. 'Industry' includes mining and quarrying (including oil production), manufacturing, construction, electricity, gas, and water, corresponding to divisions 2-5 in the International Standard Industrial Classification of All Economic Activities (ISIC-Rev.2) and to tabulation categories C-F in ISIC-Rev. 3. 'Services' include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services, corresponding to divisions 6-9 in ISIC-Rev. 2, and to tabulation categories G-Q in ISIC-Rev. 3.

Employment refers to people above a certain age who worked or held a job during a specified reference period (according to the ILO *Resolution concerning statistics of the economically active population, employment, unemployment and underemployment*, adopted by the

Thirteenth International Conference of Labour Statisticians (ICLS), October 1982).

Wage employment refers only to wage earners and salaried employees, or "persons in paid employment jobs". Employees are typically remunerated by wages and salaries, but may be paid by commission from sales, piece-rates, bonuses or payments in kind such as food, housing, training, etc. These persons are in wage employment as opposed to self-employment – that is employers, own-account workers, members of producers' cooperatives and contributing family workers. The different statuses in employment are defined according to the ILO *Resolution concerning the International Classification of Status in Employment (ICSE)*, adopted by the 15th ICLS (1993).

Rationale:

Women have tended to be more involved in the agricultural sectors than the non-agricultural sector. This indicator is a measure of equality of employment opportunity in the non-agricultural sector for both women and men.

Sources of data:

Industrial surveys undertaken periodically at national level. Also, administrative records data providing data on employment, compiled by industries and services in the country. This data is generally available as it is required also for other economic indicators such as compilation of GDP in national accounts.

Method of computation:

The indicator is calculated as the number of women in non-agricultural paid employment divided by the total number of persons in paid employment in the non-agricultural sector. This is the proportion of women in "paid employment jobs" (in other words "women employees") in the non-agricultural sector.

$$\text{Share of women in wage employment in the non-agricultural sector} = \frac{\text{Number of women in paid employment in non-agricultural sector}}{\text{Total number of persons in paid employment in non-agricultural sector}} * 100$$

Gender issues:

There are large differences between women and men in non-agricultural employment, in particular in developing countries. This is the result of differences between rates of participation in employment for women and men as well as the kind of employment in which they participate. In many regions, women are more likely than men to be engaged in informal sector activities and subsistence or unpaid work in the household.

INDICATOR 3.3: PROPORTION OF SEATS HELD BY WOMEN IN NATIONAL PARLIAMENT**Responsible international agency:**

Inter-Parliamentary Union (IPU), Switzerland

Definition:

The proportion of seats held by women in national parliaments, (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=556>) [47] is the number of seats held by women members in single or lower chambers of national parliaments, expressed as a percentage of all occupied seats.

National parliaments can be bicameral or unicameral. This indicator covers the single chamber in unicameral parliaments and the lower chamber in bicameral parliaments. It does not cover the upper chamber of bicameral parliaments. Seats are usually won by members in general parliamentary elections. Seats may also be filled by nomination, appointment, indirect election, rotation of members and by-election.

Seats refer to the number of parliamentary mandates, or the number of members of parliament.

Rationale:

This indicator is expected to measure the involvement of women in enacting laws of the country and in political decision making in general.

Sources of data:

The data used are official statistics received from administrative records data of the national parliament.

Method of computation:

The proportion of seats held by women in national parliament is derived by dividing the total number of seats occupied by women by the total number of seats in parliament.

There is no weighting or normalizing of statistics.

Gender issues:

Women are underrepresented in all decision making bodies and within political parties, particularly at the higher echelons. Women still face many practical obstacles to the full exercise of their role in political life.

Goal 4: Reduce child mortality

Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

INDICATOR 4.1: UNDER-FIVE MORTALITY RATE**Responsible international agency:**

Interagency Group for Mortality Estimation: UNICEF, WHO, World Bank and UN Population Division

Definition:

The under-five mortality rate (U5MR) is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of five if subject to current age-specific mortality rates

(<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=561>) [48].

Age-specific mortality rates are calculated from data on births and deaths in vital statistics registries, censuses and household surveys in developing countries.

Associated relevant definition: A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life—such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles—whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.

Rationale:

The indicator measures child survival. It also reflects the social, economic and environmental conditions in which children (and others in society) live, including their health care. Because data on the incidences and prevalence of diseases (morbidity data) frequently are unavailable, mortality rates are often used to identify vulnerable populations. The under-five mortality rate captures more than 90 percent of global mortality among children under the age of 18. (http://www.sidsnet.org/pacific/spc/mdgs/MDGs/indicator_13_definition.htm) [49]

Sources of data:

Vital registration systems, sample registration systems, Household surveys (Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS)), national population and housing censuses.

Data for this indicator is typically found in vital registration systems and in household surveys that collect complete birth histories from women of childbearing age. Birth histories include a series of detailed questions on each child a woman has given birth to during her lifetime, including the date the child was born, whether or not the child is still alive, and if the child has died, the age at death.

Method of estimation:

There are two methods that are used for estimating U5MR, the Direct method and the Indirect method. The Direct method uses data collected on complete birth histories.

The indirect method uses the Brass method, named after its original developer, William Brass, which converts the proportion of dead children ever born reported by women in age groups 15-19, 20-24,... 45-49 into estimates of probability of dying before attaining certain exact childhood ages. Brass's method assumes that the age of the mother can serve as a proxy for the age of her children and thus for how long they have been exposed to the risk of dying.

Indirect methods require less detailed information that is available in censuses and general surveys, including the total number of children a woman has ever borne, the number who survive and the woman's age (or the number of years since she first gave birth). However, indirect methods require model life tables to adjust the data for the age pattern of mortality in the general population. Finding an appropriate model life table can be challenging, since the Coale and Demeny model life tables are derived largely from the European experience.

Gender issues:

Under-five mortality rates are higher for boys than for girls in countries without significant parental gender preferences. Under-five mortality better captures the effect of gender discrimination than infant mortality, as nutrition and medical interventions are more important in this age group, while biological differences have a higher impact during the first year of life (see also indicator 14, infant mortality rate). There may be gender-based biases in the reporting of child deaths.

INDICATOR 4.2: INFANT MORTALITY RATE

Responsible international agency:

UNICEF, WHO, UNICEF, The World Bank

Definition:

The infant mortality rate is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of one if subject to current age-specific mortality rates. (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=562>) [50]

Rationale:

Child mortality and infant mortality rates measure the survival of children. Infant mortality rates are considered a good indicator of economic development and of the quality and access of the health system provided. High rates of infant mortality reflect low levels of nutrition, education, and/or health care in a population.

Sources of data:

In practice data is obtained from vital registration systems, sample registration systems, national population censuses, and/or household surveys

Method of estimation:

Death under the age of 1 year after live birth in a given year divided by Number of live birth in the same year. Measure units = Per 1,000, Type of indicator = Rate.

The methods used to calculate the infant mortality rate (IMR) depend on the type of data available. When data collected via vital registration systems is of good quality, the IMR can be directly estimated by observing the survival status of different cohorts along time and to specific ages since the moment of birth. IMR can be derived from household survey data using direct or indirect methods.

The direct method uses data collected on birth histories of women of childbearing age and produces the probability of dying before age one for children born alive, among women of childbearing age, during five year periods before the survey (0-4, 5-9, etc.). Direct methods require each child's date of birth, survival status, and date or age at death. This information is typically found in vital registration systems and in household surveys that collect complete birth histories from women of childbearing age. Birth histories include a series of detailed questions on each child a woman has given birth to during her lifetime, including the date the child was born, whether or not the child is still alive, and if the child has died, the age at death.

The indirect method uses the Brass method, named after its original developer, William Brass, which converts the proportion dead of children ever born reported by women in age groups 15-19, 20-24,... 45-49 into estimates of probability of dying before attaining certain exact childhood ages. Brass's method assumes that the age of the mother can serve as a proxy for the age of her children and thus for how long they have been exposed to the risk of dying.

Indirect methods require less detailed information that is available in censuses and general surveys, including the total number of children a woman has ever borne, the number who survive and the woman's age (or the number of years since she first gave birth). However, indirect methods require model life tables to adjust the data for the age pattern of mortality in the general population. Finding an appropriate model life table can be challenging, since the Coale and Demeny model life tables are derived largely from the European experience.

Gender issues:

Girls have a survival advantage over boys during the first year of life, largely based on biological differences. This is especially so during the first month of life when prenatal conditions are most likely to be the cause or a contributing cause of death. While infant mortality is generally higher for boys than for girls, in some countries girls' biological advantage is outweighed by gender-based discrimination. However, under-five mortality better captures the effect of gender discrimination than infant mortality, as nutrition and medical interventions are more important after age one.

INDICATOR 4.3: PROPORTION OF 1 YEAR-OLD CHILDREN IMMUNISED AGAINST MEASLES**Responsible international agency:**

UNICEF and WHO

Definition:

Proportion of 1 year olds children immunized against measles is the percentage of children under one year of age who have received at least one dose of a measles vaccine. It is generally recommended for children to be immunized against measles at the age of 9 months. In certain countries in Latin America and the Caribbean it is recommended for children to be immunized between the ages of 12 and 15 months.

(<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=563>) [51].

Rationale:

Reducing measles deaths is the main rationale for measles vaccination. "There is a "cure" for measles. It is called vitamin A (<http://www.whale.to/vaccine/points.html>) [52]. Immunization must be prioritized for seven key reasons: 1. Immunization saves lives, 2. Immunization is a basic right - but not accessible to all, 3. Outbreaks pose a serious threat, 4. Infectious diseases still kill, 5. Diseases can be controlled and eliminated, 6. Immunization is cost-effective, 7. Children depend on health systems to provide safe, effective and inexpensive immunization (http://www.euro.who.int/document/EIW/seven_key_reasons.pdf) [53].

Sources of data:

- Administrative coverage data.
 - ✓ The number of doses administered as recorded by the health providers;
 - ✓ The number of children in the target population, usually live births or infants surviving to the age of one year; and
 - ✓ An estimate of completeness of reporting, e.g., percentage of districts in the country that reported their data.
- Survey data (national surveys conducted by DHS, MICS, EPI Cluster or other valid instruments).
- Official national estimate (the estimate of coverage that the Ministry of Health believes to be correct; which may or may not coincide with the administrative or national survey data).

Administrative data can be biased for a number of reasons, and can therefore present a misleading view of the coverage of immunization. Survey data may be more objective but are not collected every year.

Method of estimation:

Proportion of 1 year-olds immunized against measles=(Number of doses administered/Number of children in the target group)x100

Gender issues:

Immunization programmes are generally free of charge and should not discriminate between boys and girls. However, in some countries of northern Africa, girls' immunization rates are lower than boys', probably due to cultural rather than economic reasons.

Goal 5: Improve Maternal Health

Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

INDICATOR 5.1: MATERNAL MORTALITY RATIO**Responsible international agency:**

WHO, UNICEF, UNFPA

Definition:

The maternal mortality rate (MMR) is the annual number of women who die from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100,000 live births. The 10th revision of the International Classification of Diseases makes provision for including late maternal deaths occurring between six weeks and one year after childbirth, (http://www.spc.int/mdgs/MDGIs/indicator_16_definition.htm) [54].

Rationale:

The indicator, monitors deaths related to pregnancy. Such deaths are affected by various factors, including general health status, education and services during pregnancy and childbirth. It is important to monitor changes in health conditions related to sex and reproduction.

Sources of data:

Population and Housing Censuses, Vital registration systems data, Household surveys and Reproductive age mortality studies.

Method of estimation:

The MMR can be calculated by:

- (a) Dividing recorded (or estimated) maternal deaths by total recorded (or estimated) live births in the same period and multiplying by 100,000.
- (b) Reviewing of all deaths of women of reproductive age (so-called Reproductive Age Mortality Surveys, or RAMOS), longitudinal studies of pregnant women and repeated household studies. This is an alternate method of calculating MMR.

The above two methods have data quality problems. They all rely on accurate reporting of deaths of pregnant women and of the cause of death, something that is difficult to obtain in reality. Most country estimates tend to be unreliable due to underreporting and misclassification of deaths and as such need to be adjusted, however most governments tend to report unadjusted estimates.

Gender issues:

The low social and economic status of girls and women is a fundamental determinant of maternal mortality in many countries. Low status limits the access of girls and women to education and good nutrition as well as to the economic resources needed to pay for health care or family planning services.

INDICATOR 5.2: PROPORTION OF BIRTHS ATTENDED BY SKILLED HEALTH PERSONNEL

Responsible international agencies:

UNICEF

Definition:

The proportion of births attended by skilled health personnel, (http://spc.int/mdgs/MDGIs/indicator_17_definition.htm) [55] is the percentage of deliveries attended by personnel trained to give the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period; to conduct deliveries on their own; and to care for newborns.

Skilled health personnel include only those who are properly trained and who have appropriate equipment and drugs (i.e. Doctors, Nurses, and Midwives). Traditional birth attendants, even if they have received a short training course, are not to be included.

Rationale:

The indicator is a measure of a health system's ability to provide adequate care for pregnant women. Measuring maternal mortality accurately is notoriously difficult, except where there is comprehensive registration of deaths and causes of death. Several process indicators have been proposed for tracking progress by focusing on professional care during pregnancy and childbirth, particularly for the management of complications. The most widely available indicator is the proportion of women who deliver with the assistance of a medically trained health care provider.

Sources of data:

Household surveys, including MICS [56], DHS, CWIQ.

Method of computation:

The number of births attended by skilled health personnel (doctors, nurses or midwives) is

expressed as a percentage of deliveries (or births if those are the only data available) in the same period.

Gender issues:

The low social status of women in developing countries limits their access to economic resources and basic education and thus their ability to make decisions related to health and nutrition. Some women are denied access to care when it is needed either because of cultural practices of seclusion or because decision-making is the responsibility of other family members. Lack of access to or use of essential obstetric services is a crucial factor contributing to high maternal mortality

Target 5.B: Achieve, by 2015, universal access to reproductive health

INDICATOR 5.3: CONTRACEPTIVE PREVALENCE RATE

Responsible international agency:

WHO, United nations Population Division, New York

Definition:

Contraceptive prevalence, modern methods is the percentage of women married or in-union aged 15 to 49 who are currently using, or whose sexual partner is using, at least one modern method of contraception, regardless of the method used

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=731>) [57].

Contraceptive methods include clinic and supply (modern) methods and non-supply (traditional) methods. Clinic and supply methods include female and male sterilization, intrauterine devices (IUDs), hormonal methods (oral pills, injectables, and hormone-releasing implants, skin patches and vaginal rings), condoms and vaginal barrier methods (diaphragm, cervical cap and spermicidal foams, jellies, creams and sponges). Traditional methods include rhythm, withdrawal, abstinence and lactational amenorrhoea.

Rationale:

Contraceptive prevalence rate is an indicator of health, population, development and women's empowerment. It also serves as a proxy measure of access to reproductive health services that are essential for meeting many of the Millennium Development Goals, especially those related to child mortality, maternal health, HIV/AIDS, and gender equality

(<http://www.who.int/whosis/indicators/compendium/2008/3pcf/en/index.html>) [58].

Sources of data:

Household surveys such as the DHS, MICS, Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS), and national family planning, or health, or household or socio-economic surveys. Survey data from sources other than the National Statistical system are included

when other data are not available.

Method of estimation:

Empirical data only

$$\text{Contraceptive prevalence, modern methods} = \frac{\text{Women of reproductive age (15-49) who are married or in union and who are currently using any modern methods of contraception}}{\text{Total number of women of reproductive age (15-49) who are married or in union}} \times 100$$

Gender issues:

Measures of the prevalence of contraceptive use are usually derived from interviews with representative samples of women of reproductive age. In many surveys, questions on current contraceptive use are confined to married women, including those in consensual unions, in countries where such unions are common.

INDICATOR 5.4: ADOLESCENT BIRTH RATE

Responsible international agency:

WHO, UNFPA

Definition:

The adolescent birth rate measures the annual number of births to women 15 to 19 years of age per 1,000 women in that age group. It represents the risk of childbearing among adolescent women 15 to 19 years of age. It is also referred to as the age-specific fertility rate for women aged 15-19. (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=761>) [59]

Rationale:

In many countries in the world, teenager's pregnancy and parenting continues to be a significant social issue in our community. Too-early childbearing often harms the health of both mother and child, maternal mortality rates are high for teenage mothers, and early pregnancy can endanger the life and health of the child. High adolescent fertility rates are linked to low educational attainment and poverty (http://www.advocatesforyouth.org/index.php?option=com_content&task=view&id=432&Itemid=177) [60].

Sources of data:

- (a) Civil registration data on births or the adolescent birth rate,
- (b) Survey data i.e. the DHS, the CDC-assisted Reproductive Health Surveys (RHS), MICS and other nationally sponsored surveys,
- (c) Population and Housing Census data,

(d) in other cases, the adolescent birth rate is computed from tables on births in the preceding 12 months by age of mother, and census population distribution by sex and age.

Method of estimation:

The adolescent birth rate is generally computed as a ratio. The numerator is the number of live births to women 15 to 19 years of age, and the denominator an estimate of exposure to childbearing by women 15 to 19 years of age. The numerator and the denominator are calculated differently for civil registration, survey and census data.

Civil registration:

The numerator is the registered number of live-births born to women 15 to 19 years of age during a given year, and the denominator is the estimated or enumerated population of women aged 15 to 19

Survey data:

The adolescent birth rate is generally computed based on retrospective birth histories. The numerator refers to births to women that were 15 to 19 years of age at the time of the birth during a reference period before the interview, and the denominator to person-years lived between the ages of 15 and 19 by the interviewed women during the same reference period. Whenever possible, the reference period corresponds to the five years preceding the survey. The reported observation year corresponds to the middle of the reference period. For some surveys, no retrospective birth histories are available and the estimate is based on the date of last birth or the number of births in the 12 months preceding the survey.

Census data:

The adolescent birth rate is generally computed based on the date of last birth or the number of births in the 12 months preceding the enumeration. The census provides both the numerator and the denominator for the rates. In some cases, the rates based on censuses are adjusted for under-registration based on indirect methods of estimation. For some countries with no other reliable data, the own-children method of indirect estimation provides estimates of the adolescent birth rate for a number of years before the census.

Gender issues:

Teenage pregnancy can affect the education of teenage girls and increase the maternal mortality for teenagers. In many developing countries, teenage pregnancy has serious consequences with regard to poverty, education, health of the mother and child, etc.

INDICATOR 5.5: ANTENATAL CARE COVERAGE (AT LEAST ONE VISIT AND AT LEAST FOUR VISITS)

Responsible international agency:

UNICEF, WHO

Definition:

Antenatal care coverage (at least one visit) is the percentage of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses, or midwives) **at least once** during pregnancy, as a percentage of women age 15-49 years with a live birth in a given time period

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=763>) [61].

Antenatal care coverage (at least four visits) is the percentage of women aged 15-49 with a live birth in a given time period that received antenatal care **four or more times** with **ANY** provider (whether skilled or unskilled), as a percentage of women age 15-49 years with a live birth in a given time period.

A skilled health worker/attendant is an accredited health professional - such as a midwife, doctor or nurse - who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns. Both trained and untrained traditional birth attendants (TBA) are excluded.

Rationale:

Antenatal care leads to improved maternal health. Receiving antenatal care at least four times, which is recommended by WHOM, increases the likelihood of receiving effective maternal health interventions during antenatal visits. Importantly, although the indicator for “at least one visit” refers to visits with skilled health providers (doctor, nurse, midwife), “four or more visits” refers to visits with ANY provider because national-level household surveys do not collect provider data for each visit. In addition, standardization of the definition of *skilled* health personnel is sometimes difficult because of differences in training of health personnel in different countries.

Sources of data:

Two major sources are identified:

- (a) Administrative data source through health clinics (both Government and Private)
- (b) National level household surveys i.e. DHS, CWIQ, MICS, Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) and national surveys based on similar methodologies etc. are the major source of data. Special attention should be paid to the definitions used in the surveys to ensure conformity to the MDG definitions.

Method of computation:

The number of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses or midwives) at least once during pregnancy, is expressed as a percentage of women aged 15-49 with a live birth in the

same period.

The number of women aged 15-49 with a live birth in a given time period that received antenatal care by ANY provider (whether skilled or unskilled) four or more times during pregnancy, is expressed as a percentage of women aged 15-49 with a live birth in the same period.

Gender issues:

Antenatal health care is likely to reduce the level of maternal mortality, hence the health of women during pregnancy and that of the children when they are born.

INDICATOR 5.6: UNMET NEED FOR FAMILY PLANNING

Responsible international agency:

UNFPA

Definition:

Women with unmet need for family planning for limiting births are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children. This is a subcategory of total unmet need for family planning, which also includes unmet need for spacing births. The concept of unmet need points to the gap between women's reproductive intentions and their contraceptive behaviour.

For MDG monitoring, unmet need is expressed as a percentage based on women who are married or in a consensual union

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=778>) [62].

Rationale:

Unmet need for family planning is a statistical measure that calculates how many sexually active women say they want to stop childbearing or delay their next birth by at least two years but are not using any method of contraception, either modern or traditional.

Unmet need for family planning was added to the fifth Millennium Development Goal (MDG) as an indicator for tracking progress on improving maternal health. Family planning is among a handful of feasible, cost-effective interventions that can make an immediate impact on maternal mortality in low-resource settings. Family planning can reduce maternal mortality by reducing the number of pregnancies, the number of abortions, and the proportion of births at high risk. As contraceptive use increases in a population, maternal mortality decreases.

Sources of data:

DHS (Primary source), Reproductive Health Surveys (RHS) and national surveys based on similar methodologies. Other sources include Centers for Disease Control and Prevention (CDC)

Reproductive Health Surveys (RHS) and other national surveys.

Method of computation:

$$\text{Unmet need for family planning for limiting births} = \frac{\text{Women (married or in consensual union) who are pregnant or amenorrheic and whose pregnancies were unwanted + fecund women who desire to stop childbearing and who are not using a contraceptive method}}{\text{Total number of women of reproductive age (15-49) who are married or in consensual union}} \times 100$$

Gender issues:

Unmet need for family planning is closely linked with gender equity and socioeconomic development. Where poverty is widespread, the status of women is low, and girls receive little schooling, changes in social norms regarding fertility come slowly, and women find it difficult to take control of their own fertility. Family planning offers a host of additional health, social, and economic benefits: it can help reduce infant mortality, slow the spread of HIV/AIDS, promote gender equality, reduce poverty, accelerate socioeconomic development, and protect the environment.

(http://www.unfpa.org/webdav/site/global/shared/documents/publications/2008/EOL_nov08.pdfhttp://www.unfpa.org/webdav/site/global/shared/documents/publications/2008/EOL_nov08.pdf) [63]

Goal 6: Combat HIV/AIDS, malaria and other diseases reduce child mortality

Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

INDICATOR 6.1: HIV PREVALENCE AMONG THE POPULATION AGED 15-24 YEARS

Responsible international agency:

UNAIDS

Definition:

HIV prevalence among population aged 15-24 years is the percentage of people aged 15-24 living with HIV, as measured in national based surveys.

Associated definition: Human Immunodeficiency Virus (HIV) is a virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=747>) [64]

Rationale:

HIV infection leads to AIDS. Without treatment, average survival from the time of infection is about nine years. Access to treatment is uneven, and no vaccine is currently available. About half of all new HIV cases are among people 24 years of age or younger. In generalized epidemics (with prevalence consistently at more than 1 per cent among pregnant women), the infection rate for pregnant women is similar to the overall rate for the adult population. Therefore, the indicator is a measure of the spread of the epidemic. In low-level and concentrated epidemics, HIV prevalence is monitored in groups with high-risk behaviour because prevalence among pregnant women is low

(<http://mdgs.un.org/unsd/mdg/Resources/Attach/Indicators/HandbookEnglish.pdf>) [65].

Sources of data:

Population-based surveys can provide reasonable estimates of HIV prevalence for generalized epidemics, where HIV has spread throughout the general population in a country. In recent years, the number of population-based surveys that collect biological specimens for HIV testing has increased. These surveys use dried blood spots for collecting specimens. Another source is Sentinel Surveillance (unlinked and anonymous testing of blood for the purpose of monitoring the prevalence and trends in HIV infection over time and place in a given population).

Method of computation:

The HIV prevalence rate, men 15-49 years old, is derived by dividing the population aged 15-49, living with HIV by the population aged 15-49, as measured in national based surveys.

Gender issues:

Pregnant women are chosen for clinical surveillance, not because of gender issues, but because they offer a unique opportunity to monitor HIV/AIDS. Throughout the world, the unequal social status of women places them at higher risk for contracting HIV. Women are at a disadvantage when it comes to access to information about HIV prevention, the ability to negotiate safe sexual encounters and access to treatment for HIV/AIDS once infected. As a result of those inequities and the dynamics of the epidemic, the proportion of women among people living with HIV/AIDS is rising in many regions.

INDICATOR 6.2: CONDOM USE AT LAST HIGH-RISK SEX

Responsible international agency:

UNAIDS, UNICEF

Definition:

Condom use at last high-risk sex is the percentage of young men and women aged 15–24 reporting the use of a condom during sexual intercourse with a non-cohabiting, non-marital sexual partner in the last 12 months

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=735>) [66].

Rationale:

Consistent use of condoms in non-regular sexual partnerships substantially reduces the risk of sexual HIV transmission. This is especially important for young people, who often experience the highest rates of HIV infection because they have low prior exposure to infection and (typically) relatively high numbers of non-regular sexual partnerships. Consistent condom use with non-regular sexual partners is important even in countries where HIV prevalence is low because it can prevent the spread of HIV in circumstances where non-regular relationships are common. Condom use is one measure of protection against HIV/AIDS. Equally important are delaying age at first sex, reducing the number of non-regular sexual partners and being faithful to one partner.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [67].

Sources of data:

Household surveys, such as Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS), reproductive and health surveys and behavioural surveillance surveys.

Method of estimation:

The indicator is calculated by dividing the number of respondents ages 15–24 reporting using a condom during sexual intercourse with a non-marital and non-cohabiting sexual partner in the last 12 months, divided by the number of respondents ages 15–24 reporting having had sex with a non-cohabiting, non-marital sexual partner in the last 12 months.

The data from household surveys used to produce this indicator are weighted according to the survey design to create a nationally representative indicator. No additional alterations are made to the data.

Gender issues:

Women's risk of becoming infected with HIV during unprotected sexual intercourse is higher than that of men. And the risk is even higher for younger women. Social and cultural factors may increase women's vulnerability to HIV infection. For instance, cultural norms related to sexuality often prevent girls from taking active steps to protect themselves.

INDICATOR 6.3: PROPORTION OF POPULATION AGED 15-24 YEARS WITH COMPREHENSIVE CORRECT KNOWLEDGE OF HIV/AIDS

Responsible international agency:

WHO, UNICEF,

Definition:

Percentage of population aged 15–24 years with comprehensive correct knowledge of HIV/AIDS is the percentage of young persons aged 15–24 years who correctly identify the two

major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), who reject the two most common local misconceptions about HIV transmission and who know that a healthy-looking person can transmit HIV. This indicator is usually presented for women and men separately

(<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=741>) [68].

Rationale:

The indicator reflects the success of national information, education and communication programmes and other efforts in promoting knowledge of valid HIV-prevention methods and reducing misconceptions about the disease. Common local misconceptions can be determined by the context of the country

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [69]

Sources of data:

Household surveys (such as Demographic and Health Surveys, rural household surveys, behavioural surveillance surveys and Multiple Indicator Cluster Surveys).

Method of computation:

This indicator is constructed from responses to the following set of prompted questions:

1. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?
2. Can a person reduce the risk of getting HIV by using a condom every time they have sex?
3. Can a healthy-looking person have HIV?
4. Can a person get HIV from mosquito bites?
5. Can a person get HIV by sharing food with someone who is infected?

Note: The data from household surveys are expected to be weighted according to the survey design to create a nationally representative indicator. Numerator: Weighted number of respondents aged 15-24 years who gave the correct answer to all five questions

Denominator: Weighted number of all respondents aged 15–24

The first three questions should not be altered. Questions 4 and 5 ask about local misconceptions and may be replaced by the most common misconceptions in your country.

Proxy Indicators

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>)[70]

Due to lack of data UNICEF, WHO and Joint UN Programme on HIV/AIDS has devised the following methods of calculating proxy indicators that represent two components of the actual indicator:

Percentage of women and men aged 15–24 who know that a person can protect him or herself from HIV infection by “consistent use of condom”. The indicator is calculated as the number of respondents aged 15–24 who, in response to prompting, correctly identify consistent use of condoms as a means of protection against HIV infection, as a percentage of the total number of respondents ages 15–24.

Percentage of women and men aged 15–24 who know a healthy-looking person can transmit HIV. The indicator is calculated as the number of respondents ages 15–24 who, in response to prompting, correctly note that a person who looks healthy may transmit HIV, as a percentage of the total number of respondents aged 15–24.

Gender issues:

Women’s risk of becoming infected with HIV during unprotected sexual intercourse is higher than that of men. The risk is even higher for younger women. Social and cultural factors may increase women’s vulnerability to HIV infection. For instance, cultural norms related to sexuality often prevent girls from taking active steps to protect themselves. In many countries, girls are becoming infected and dying younger than boys, for various reasons, especially in sub-Saharan Africa, the region most affected by HIV/AIDS.

INDICATOR 6.4: RATIO OF SCHOOL ATTENDANCE OF ORPHANS TO SCHOOL ATTENDANCE OF NON-ORPHANS AGED 10-14 YEARS

Responsible international agency:

UNICEF, UNAIDS and WHO

Definition:

The ratio of the current school attendance of orphans to school attendance of non-orphans aged 10-14 years is defined as the ratio of the current school attendance rate of children aged 10–14 both of whose biological parents have died to the current school attendance rate of children aged 10–14 both of whose parents are still alive and who currently live with at least one biological parent

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=726>) [71].

Rationale:

This indicator measures the impact of the AIDS epidemic on orphans. HIV/AIDS is claiming the lives of ever-growing numbers of adults just when they are forming families and bringing up children. As a result, orphan prevalence is rising steadily in many countries, while fewer relatives within the prime adult ages mean that orphaned children face an increasingly uncertain future

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [70]

Sources of data:

Household surveys such as Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), behavioural surveillance surveys, and other nationally representative surveys.

Method of computation:

The current school attendance rate of children ages 10–14 for whom both biological parents have died is divided by the current school attendance rate of children ages 10–14 whose parents are both still alive and who live with at least one biological parent.

Gender issues:

Boys and girls are both affected. However, girls might be more likely than boys to leave school to care for ill parents and younger siblings.

Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it

INDICATOR 6.5: PROPORTION OF POPULATION WITH ADVANCED HIV INFECTION WITH ACCESS TO ANTIRETROVIRAL DRUGS

Responsible international agency:

WHO, UNICEF, UNAIDS

Definition:

The proportion of population with advanced HIV infection with access to antiretroviral drugs is the percentage of adults and children with advanced HIV infection currently receiving antiretroviral therapy according to nationally approved treatment protocols (or WHO/Joint UN Programme on HIV and AIDS standards) among the estimated number of people with advanced HIV infection

(<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=765>) [72].

Rationale:

Antiretroviral therapy (ART) has been shown to reduce mortality among those infected with HIV. This indicator assesses the progress in providing ART to all people with advanced HIV infection (**Workshop on New targets and indicators: an overview of metadata and data preparation for the global monitoring, Kampala, Uganda, 5-8 May 2008** [73])

Sources of data:

For number of people receiving antiretroviral therapy, administrative data obtained from Health Ministries (national Aids programmes under Ministry of Health) or from other reliable sources in the country such as bilateral partners, foundations and nongovernmental organizations that are major providers of treatment services are used. For estimates of number of people with advanced HIV infection, UNAIDS and WHO have developed modelling

and projections methods and tools to generate country estimates of the magnitude of the epidemic and key impact indicators, including mortality

Method of estimation:

The estimated number of people receiving antiretroviral therapy is divided by the number of people estimated to need treatment (based on UNAIDS/WHO methods).

The numerator is the number of people on antiretroviral therapy.

The denominator is number of adults with advanced HIV infection, calculated by adding

- the number of adults that need to start antiretroviral therapy,
- the number of adults who are being treated in the previous year and have survived to the current year.

Gender issues:

It is difficult to determine gender difference in the proportion of people with advanced HIV infection with access to antiretroviral drugs. However for prevention of mother to child transmission and paediatric HIV care and treatment, the number of women can reasonably be estimated through administrative record-clinics, hospitals, etc.

Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

INDICATOR 6.6: INCIDENCE AND DEATH RATES ASSOCIATED WITH MALARIA

Responsible international agency:

UNICEF, WHO

Definition:

Incidence and death rates associated with malaria refers to the number of deaths caused by malaria per 100,000 people

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [74].

Rationale:

The indicator allows highly endemic countries to monitor disease and death from malaria, which have been increasing over the last two decades owing to deteriorating health systems, growing drug and insecticide resistance, periodic changes in weather patterns, civil unrest, human migration and population displacement.

Sources of data:

Administrative sources (Ministry of Health), household surveys (MICS, DHS, CWIQ, etc) and vital statistics registrations systems (cause of death, including deaths caused by malaria).

Method of computation:

- Where the only prevalence data available are reported through the administration of health services, they are expressed per 100,000 population, using population estimates as the denominator;
- Where prevalence data on children under five come from household surveys, the data may be reported as percentages of children under five with fever in the last two weeks. The percentage may be multiplied by 1,000 to express the rate per 100,000.

Gender issues:

Gender roles and relations influence the degree of exposure to the relevant vectors and also to the access and control of resources needed to protect women and men from being infected. Women's immunity is particularly compromised during pregnancy, making pregnant women more likely to become infected and implying differential severity of the consequences. Malaria during pregnancy is an important cause of maternal mortality.

INDICATOR 6.7: PROPORTION OF CHILDREN UNDER 5 SLEEPING UNDER INSECTICIDE-TREATED BED NETS

Responsible international agency:

WHO, UNICEF

Definition:

Proportion of children under 5 sleeping under insecticide-treated bed nets is the percentage of children under five years of age in malaria endemic areas who slept under an Insecticide-Treated Net (ITN) the previous night, ITN being defined as a mosquito net that has been treated within 12 months or is a long-lasting insecticidal net (LLIN).

(<http://www.who.int/whosis/indicators/compendium/2008/2in5/en/index.html>) [75].

Rationale:

In areas of intense malaria transmission, malaria-related morbidity and mortality are concentrated in young children, and the use of ITN by children under 5 has been demonstrated to considerably reduce malaria disease incidence, malaria-related anaemia and all cause under-5 mortality. This indicator measures the national-level coverage of insecticide-treated nets among children younger than five years old who are at risk for malaria

Sources of data:

DHS, MICS, World Health Survey (WHS), Insecticide-Treated Nets (ITN) surveys, Malaria Indicator Surveys (MIS)

Method of computation:

Number of children reported to have slept under an ITN the previous night expressed as a percentage of all children under five years of age

Gender issues:

Girls may have greater exposure than boys to malaria-infested areas owing to their role in the provision of fuel, water and other supplies

INDICATOR 6.8: PROPORTION OF CHILDREN UNDER 5 WITH FEVER WHO ARE TREATED WITH APPROPRIATE ANTI-MALARIAL DRUGS

Responsible international agency:

WHO, UNICEF

Definition:

Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs is the percentage of children aged 0-59 months with fever in the two weeks prior to the survey who received any anti-malarial medicine within 24 hours of the onset of symptoms (United Nations Statistical Institute for Asia and the Pacific (SIAP) and Asian Development Bank (ADB): Country Training Workshops on MDGs and Use of Administrative Data Systems for Statistical Purposes) [76].

Rationale:

This indicator captures the extent to which children with fever are receiving prompt and effective treatment according to national guidelines. Prompt and effective treatment within 24 hours of the onset of symptoms is necessary to prevent life-threatening complications. (<http://www.theglobalfund.org/documents/me/M E Toolkit P2-Malaria en.pdf>) [77].

Sources of data:

DHS, MICS and Malaria Indicator Surveys (MIS)

Method of computation:

Numerator: Number aged 0-59 months with fever in the 2 weeks prior to the survey who received any anti-malarial medicine within 24 hours of onset of symptoms

Denominator: Number of children aged 0-59 months reported to have fever in the two weeks prior to the survey.

Gender issues:

Girls may have greater exposure than boys to malaria-infested areas owing to their role in the provision of fuel, water and other supplies

INDICATOR 6.9: INCIDENCE, PREVALENCE AND DEATH RATES ASSOCIATED WITH TUBERCULOSIS

Responsible international agency:

WHO

Definition:

Incidence, prevalence and death rates associated with tuberculosis indicator refers to the estimated number of deaths due to tuberculosis (TB) in a given time period. The indicator reflects the number of deaths per 100,000 populations per year. Deaths from all forms of TB are included (Pulmonary (smear-positive and smear-negative) and extra pulmonary TB). However, deaths in HIV positive people with TB as a contributory cause are therefore, not included in this indicator.

Description of TB: TB is an infectious bacterial disease caused by *Mycobacterium tuberculosis*, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with *Mycobacterium tuberculosis* often causes no symptoms, since the person's immune system acts to "wall off" the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics. (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=647>) [78].

Rationale:

Prevalence and mortality are direct indicators of the burden of tuberculosis (TB), indicating the number of people suffering from the disease at a given point in time and the number dying each year. Furthermore, prevalence and mortality respond quickly to improvements in control, as timely and effective treatment reduce the average duration of the disease (thus decreasing prevalence) and the likelihood of dying from the disease (thus reducing disease-specific mortality).

Sources of data:

Prevalence of TB is estimated in population-based surveys. For most countries the TB death is measured indirectly from TB incidence. For some countries, the TB death is measured directly from the data of the vital registration system (Administrative source).

Method of computation:

The tuberculosis death rate indicator refers to the estimated number of deaths due to tuberculosis (TB) in a given time period. The indicator reflects the number of deaths per 100,000 populations per year. Deaths from all forms of TB are included. However, deaths in HIV positive people with TB as a contributory cause are coded under HIV and are therefore, not included in this indicator.

Gender issues:

At younger ages, the prevalence of infection is similar in boys and girls. At older ages, a higher

prevalence has been found in men; in most of the world, more men than women are diagnosed with tuberculosis and die from it. However, recent analyses comparing infection and disease rates suggest that the propensity to develop the disease after infection with mycobacterium tuberculosis (the progression rate) may be greater among women of reproductive age than among men of the same age. A recent review of socio-economic and cultural factors relating to the suggested differences called for further research to clarify such differences in the epidemiology of tuberculosis. Although more men than women die of tuberculosis, it is still a leading cause of death from infectious disease among women. Since tuberculosis affects women mainly in their economically and reproductively active years, the impact of the disease is also strongly felt by their children and families.

INDICATOR 6.10: PROPORTION OF TUBERCULOSIS CASES DETECTED AND CURED UNDER DIRECTLY OBSERVED TREATMENT SHORT COURSE (DOTS)

Responsible international agency:

WHO

Definition:

Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS) called the *tuberculosis detection rate* is the percentage of estimated new infectious tuberculosis cases detected under the directly observed treatment, short course (DOTS) case detection and treatment strategy.

<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=647> [79].

Associated definitions

The *cure rate* is the percentage of new, registered smear-positive (infectious) cases that were cured or in which a full course of DOTS was completed.

A *tuberculosis case* is defined as a patient in whom tuberculosis has been bacteriologically confirmed or diagnosed by a clinician

(http://ddp-ext.worldbank.org/ext/GMIS/gdmis.do?siteId=2&contentId=Content_t24&menuId=LNAV01HOMe1) [80].

Rationale:

Since tuberculosis is an airborne contagious disease, primary control is effected through finding and treating infectious cases and thus limiting the risk of acquiring infection. The recommended approach to primary control is the DOTS strategy, an inexpensive strategy that could prevent millions of tuberculosis cases and deaths over the coming decade.

DOTS is a proven system based on accurate diagnosis and consistent treatment with a full course of a cocktail of anti-tuberculosis drugs (isoniazid, rifampicin, pyrazinamide, streptomycin

and ethambutol). DOTS requires government commitment, careful detection, consistent treatment, uninterrupted supply of anti-tuberculosis drugs and a monitoring and reporting system to evaluate treatment outcomes for each patient.

Sources of data:

Administrative data on diseases covering incidence and causes of death in the Ministry of health statistics. Vital Registration System data.

Method of computation:

The case detection rate is the ratio of smear-positive case notifications in a given year to the estimated number of new smear-positive cases arising in that year. For some countries, there is a margin of uncertainty in the estimation of the denominator of this ratio.

The treatment success rates is the ratio of new, registered smear-positive (infectious) cases that were cured or completed a full course of DOTS to the total number of new, registered cases. Treatment success rates can be monitored directly and accurately in cohorts of patients treated under the DOTS strategy. Systematic evaluation of patient progress and treatment outcomes provides the numerator.

Gender issues:

At younger ages, the prevalence of infection is similar in boys and girls. At older ages, a higher prevalence has been found in men; in most of the world, more men than women are diagnosed with tuberculosis and die from it. However, recent analyses comparing infection and disease rates suggest that the propensity to develop the disease after infection with mycobacterium tuberculosis (the progression rate) may be greater among women of reproductive age than among men of the same age. A recent review of socioeconomic and cultural factors relating to these suggested differences called for further research to clarify such differences in the epidemiology of tuberculosis.

Tuberculosis is nevertheless a leading cause of death from infectious disease among women. Because tuberculosis affects women mainly in their economically and reproductively active years, the impact of the disease is also strongly felt by their children and families.

Goal 7: Ensure environmental sustainability

Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

INDICATOR 7.1: PROPORTION OF LAND AREA COVERED BY FOREST

Responsible international agency:

FAO

Definition:

Proportion of land area covered by forest is forest areas as a share of total land area (http://www.spc.int/mdgs/MDGs/indicator_25_definition.htm) [81].

Land area is the total surface area of the country less the area covered by inland waters, like major rivers and lakes. As defined in the Food and Agricultural Organization's (FAO) *Global Forest Resources Assessment 2000*, forest includes both natural forests and forest plantations. It refers to land with an existing or expected tree canopy of more than 10 percent and an area of more than 0.5 hectare where the trees should be able to reach a minimum height of 5 meters. Forests are identified both by the presence of trees and the absence of other land uses. Land from which forest has been cleared but that will be reforested in the foreseeable future is included. Excluded are stands of trees established primarily for agricultural production, such as fruit tree plantations.

Rationale:

The indicator provides a measure of the relative importance of a forest in a country. Changes in forest area reflect the demand for land for other competitive uses.

Forests provide a number of functions that are vital for humanity, including the provision of goods (timber and non-timber products) and services such as protection against flooding, habitat for biodiversity, carbon sequestration, watershed protection and soil conservation. Large areas of the world's forests have been converted to other uses or severely degraded. While substantial areas of productive forest remain, there is now widespread recognition that the resource is not infinite and that its wise and sustainable use is needed for humanity's survival.

Sources of data:

National forest inventories or Forest surveys where they exist. National forest inventories are expensive and, as a result, they are carried out at infrequent intervals in many countries.

Method of computation:

The proportion of forest in the total land area is calculated from information provided by countries or from satellite images or other remote sensing information analysis. Changes in the proportion should be computed to identify trends.

Gender issues:

Men and women use forest products in different ways. Women typically gather forest products for fuel, fencing, and food for the family, fodder for livestock, medicine and raw materials for income-generating activities. Women are also often the chief sources of information on the use and management of trees and other forest plants. Men, on the other hand, tend to use non-wood forest products, but also more often cut wood to sell or use for

building materials. Women's access to forest products may not be ensured—even where women have ownership rights to land.

INDICATOR 7.2: CO₂ EMISSIONS, TOTAL, PER CAPITA AND PER \$1 GDP (PPP)

Responsible international agencies:

UN Framework Convention on Climate Change (UNFCCC)

Definitions:

There are three parts of the definition of this indicator, (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=750>) [82].

Part 1: Total CO₂ emissions

Estimates of total carbon dioxide (CO₂) emissions include anthropogenic emissions, less removal by sinks, of carbon dioxide (CO₂). The term “total” implies that emissions from all national activities are considered. The typical sectors for which CO₂ emissions/removals are estimated are energy, industrial processes, agriculture, waste, and the sector of land use, land-use change and forestry (LULUCF).

National reporting to the United Nations Framework Convention on Climate Change that follows the Intergovernmental Panel on Climate Change guidelines is based on national emission inventories and covers all sources of anthropogenic carbon dioxide emissions as well as carbon sinks (such as forests).

CO₂ emissions/removals by land use, land-use change and forestry are often known with much less certainty than emissions from the other sectors, or emissions/removals estimates for LULUCF may not be available at all. In such cases, “total” emissions can be calculated as the sum of emissions for the sectors of energy, industrial processes, agriculture, and waste.

Part 2: CO₂ emissions per capita

Carbon emissions per capita are measured as the total amount of carbon dioxide emitted by the country as a consequence of all relevant human (production and consumption) activities, divided by the population of the country.

Part 3. CO₂ emissions per \$1 GDP (PPP)

Total CO₂ emissions divided by the total value of the gross domestic product (GDP) expressed in purchasing power parities (PPPs).

Rationale:

The indicator signifies the commitment to reducing carbon dioxide emissions and progress in phasing out the Consumption of ozone-depleting chlorofluorocarbons (CFCs) by countries that have ratified the Montreal Protocol. Carbon dioxide emissions are largely a by-product of energy production and use. They account for the largest share of greenhouse gases associated

with global warming.

The Vienna Convention for the Protection of the Ozone Layer (1985) and the Montreal Protocol (1987) are now recognized as having been successful in preventing the global environmental catastrophe that could have been caused by stratospheric ozone depletion. The Montreal Protocol aims to reduce and eventually eliminate the emissions of anthropogenic ozone-depleting substances by ceasing their production and consumption. The phasing out of ozone-depleting substances and their replacement with less harmful substances or new processes are aimed at the recovery of the ozone layer.

CFCs are considered most representative of the protocol's efforts towards phasing out the use of ozone-depleting substances because they were the first to be targeted for elimination.

Sources of data:

Responsible ministry for environment matters in each country. Energy surveys conducted at national level. Developing countries submit Green House Gases (GHG) and CO₂ data periodically as part of their national communications. The UNFCCC Secretariat makes all data submissions publicly available on its website

(http://unfccc.int/ghg_emissions_data/items/3800.php) [83].

CO₂ data available at UNFCCC contain complete time series for industrialized countries only. Data for non industrialized countries (developing countries) are usually available for a few years only. This does not allow calculating regional and global totals based on UNFCCC data only; alternative sources of CO₂ data have to be used for regional and global estimates.

Data on CO₂ emissions/removals from forests and land-use changes usually have lower availability and greater uncertainty than data on CO₂ emissions from the sectors of energy, industrial processes, agriculture, and waste. Therefore, in practice CO₂ emissions/removals from forests and land-use changes are not always included into national totals.

Method of computation:

Carbon dioxide emissions per capita are calculated by dividing carbon dioxide emissions by the number of people in the national population. The 1950-to-present carbon dioxide emission estimates are derived primarily from energy statistics published by the United Nations, using the methods of "Carbon Dioxide Emissions from Fossil Fuels: A Procedure for Estimation and Results for 1950–82". National reporting to the United Nations Framework Convention for Climate Change is based on the Intergovernmental Panel on Climate Change guidelines. Carbon dioxide emissions can be expressed in carbon dioxide or converted to carbon content.

The consumption of CFCs is the national production plus imports, minus exports, minus destroyed quantities, minus feedstock uses of individual CFCs. National annual consumption of CFCs is the sum of the weighted tons (consumption in metric tons multiplied by the estimated

ozone-depleting potential) of the individual CFCs.

Gender issues:

Not applicable.

INDICATOR 7.3: CONSUMPTION OF OZONE-DEPLETING SUBSTANCES

Responsible international agency:

The United Nations Environment Programme (UNEP), the Technology and Economic Assessment Panel to the Montreal Protocol, the Parties to the Montreal Protocol, the Organisation for Economic Co-operation and Development (OECD), and members associated with the Alternative Fluorocarbon Environmental Acceptability Study (AFEAS).

Definition:

Ozone Depleting Substance (ODS); (http://esl.jrc.it/envind/un_meths/UN_ME117.htm) [84] means any organic substance containing chlorine or bromine, which destroys the stratospheric ozone layer. Production means the amount of listed, controlled substances produced; minus the amount destroyed by technologies to be approved by the Parties to the Montreal Protocol, and minus the amount entirely used as feedstock in the manufacture of other chemicals. The amount recycled and reused is not to be considered as "production". Consumption is the sum of production plus imports minus exports of controlled substances. A weighted tone (unit of measurement) of ozone depleting substances means the amount of ODS multiplied by their ozone depleting potential. Ozone depleting potential is a relative index of the ability of a substance to cause ozone depletion.

Rationale:

This indicator is used to monitor the reduction in the usage of Ozone Depleting Substances (ODSs) as a result of the Montreal Protocol. Ozone depleting substance (ODS) is any substance containing chlorine or bromine, which destroys the stratospheric ozone layer that absorbs most of the biologically damaging ultraviolet radiation.

Sources of data:

Responsible ministry for environment matters in each country. Energy surveys conducted at national level. All countries that are Party to the Montreal protocol are obliged to report data not later than nine months after the end of the year to which the data related.

Method of Computation:

1. Each country reports in metric tonnes the Production, Imports, Exports and Destruction of individual substances controlled under the Montreal Protocol.
2. Consumption = total production - destroyed - production for internal feedstock use - production for internal quarantine use (for methyl bromide only) + total new imports - import

for feedstock - import for quarantine use – total new exports + export to non-parties.

Gender issues:

Not applicable.

INDICATOR 7.4: PROPORTION OF FISH STOCKS WITHIN SAFE BIOLOGICAL LIMITS

Responsible international agency:

FAO

Definition:

The proportion of fish stocks within safe biological limits is the number of fish within the safe biological limits (i.e. the precautionary thresholds advocated by the International Council for the Exploration of the Sea), (<http://en.wikipedia.org/wiki/Biodiversity>) [85].

Rationale:

This indicator indirectly monitors over-fishing, which has contributed to endangering a number of maritime species.

The indicator is designed only for global and regional assessments. Individual country assessments are of little importance because fishing that affects the proportion of nation-specific fish stocks may be caused by other countries.

Biodiversity is the variation of life forms within a given ecosystem, biome, or on the entire Earth. Biodiversity is often used as a measure of the health of biological systems. The biodiversity found on Earth today consists of many millions of distinct biological species. The year 2010 has been declared as the International Year of Biodiversity.

Sources of data:

Countries usually collect catch and effort statistics as part of their monitoring responsibility. As regards shared stocks, usually regional fisheries bodies, through their scientific committees, collate data on shared resources to synoptically cover each stock

Method of computation:

The indicator tracks the ratio of the number of over-fished stocks to the total number of commercial stocks per fishing area as a percentage. This estimate is made by FAO.

The indicator is based on formal stock assessments to assess the exploitation state of the world's main resources. Classification follows the FAO's procedure to classify the state of the stocks (based on descriptors such as Underexploited, Moderately exploited, Fully exploited, Overexploited, Depleted and Recovering). This classification will allow calculation of the "% stocks within safe biological limits" indicator.

Gender issues:

Not applicable.

Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

INDICATOR 7.5: PROPORTION OF TOTAL WATER RESOURCES USED**Responsible international agency:**

FAO

Definition:

The proportion of total renewable water resources withdrawn is the total volume of groundwater and surface water withdrawn from their sources for human use (in the agricultural, domestic and industrial sectors), expressed as a percentage of the total volume of water available annually through the hydrological cycle (total actual renewable water resources). The terms water resources and water withdrawal are understood as freshwater resources and freshwater withdrawal,

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=768>) [86].

Rationale:

The total volume of groundwater and surface water withdrawn from their sources for human use (in the agricultural, domestic and industrial sectors), expressed as a percentage of the total volume of water available annually through the hydrological cycle (total actual renewable water resources).

- Shows the degree to which total renewable water resources are being exploited to meet the country's water demand. It is a measure of a country's pressure on its water resources and therefore on the sustainability of its water use.

Sources of data:

Data is compiled by FAO through its AQUASTAT

(<http://www.fao.org/nr/water/aquastat/main/index.stm>) [87] country surveys (about every 10 years). AQUASTAT is FAO's global information system on water and agriculture developed by the Land and Water Division. It collects analyses and disseminates data and information by country and by region.

Method of computation:

Water withdrawal is estimated for the three main sectors of consumption: agriculture, domestic (including urban water use) and industries, at country level and expressed in km³/year. The total actual renewable water resources for a country or region are defined as the sum of internal renewable water resources and incoming flow originating outside the

country/region, also expressed in km³/year.

Internal renewable water resources are defined as the average annual flow of rivers and recharge of groundwater for a given country or region generated from endogenous precipitation.

Incoming flows include flows of water entering the country or region, taking into consideration the quantity of flows reserved to upstream and downstream countries through agreements or treaties and reduction of flow due to upstream withdrawal.

The indicator is estimated by dividing total water withdrawal by total actual renewable water resources and expressed in percentage points.

Gender issues:

Not applicable.

INDICATOR 7.6: PROPORTION OF TERRESTRIAL AND MARINE AREAS PROTECTED

Responsible international agency:

United Nations Environment Programme (UNEP)

Definition

The indicator is expressed as percentage protected of the total territorial area of a country (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=616>) [88].

According to the International Union for Conservation of Nature (IUCN), a protected area is “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means”.¹ A Marine Protected Areas (MPA) is defined as “as any area of intertidal or sub tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment”.²

Only protected areas that are “nationally designated” are included in this indicator. The status “designated” is attributed to a protected area: when the authority that corresponds, according to national legislation or common practice (e.g. by means of an executive decree or the like), officially endorses a document of designation. The designation must be for conservation of biodiversity, not single species and not fortuitous de facto protection arising because of some other activity (e.g. military). Hence, a number of United States Marine Managed Areas and permanent fisheries closures are excluded.

Rationale:

The ratio of total territorial area protected is a useful indicator of a Government's will to protect biodiversity. However, it is neither an indication of how well managed the area is, nor confirmation that protection measures are actually enforced

Sources of data:

The data source for this indicator is the World Database on Protected Areas (WDPA)

Method of computation:

The total protected area extent by country/territory is divided by total territorial area of the country/territory (includes total land area, inland waters, and territorial waters up to 12 nautical miles) Protected areas increase with time and are not deleted from subsequent years.

The size of the protected area (its "extent") is the officially documented total and/or marine area provided by the national authority, unless otherwise stated. Many protected areas can contain proportions of both the marine and terrestrial environment, and the size of the protected area extent that falls into each environment is not always available.

Gender issues:

Not applicable.

INDICATOR 7.7: PROPORTION OF SPECIES THREATENED WITH EXTINCTION

Responsible international agency:

United Nations Environment Programme (UNEP)

Definition

Proportion of species threatened with extinction is a standard measure of the loss of biodiversity. These species are called **endangered species** which is a population of organisms which is at risk of becoming extinct because it is either few in numbers, or threatened by changing environmental or predation parameters.

Rationale:

It is well-recognized that conserving biological diversity in general, and protecting wildlife in particular, is important for many different reasons

(<http://www.encyclopedia.com/doc/1G2-3407500107.htm>) [89],

(http://env.chass.utoronto.ca/env200y/ESSAY03/cela_sara.pdf) [90]: (i) Ecosystem Benefits:

Flora and fauna play important roles in maintaining healthy ecological functions and processes;

(ii) Recreational, Economic and Aesthetic Benefits: Wildlife-based activity, such as bird

watching or eco-tourism, is a billion dollar industry in Canada that provides numerous social,

cultural and aesthetic values; (iii) Food and Medicine: Many of the foods, medicines, and other

material needs are provided by, or derived from, flora and fauna; (iv) Ethics: Many persons

believe that the human species does not have the moral right to cause the extinction of

another species.

While extinction can occur naturally, the vast majority of modern extinctions are caused by various human activities. These activities include:

- habitat destruction and degradation (e.g. loss of wetlands, grasslands, old growth forests);
- incompatible land use and development (e.g. urban sprawl, road construction);
- resource exploitation (e.g. Over hunting or over fishing);
- climate change (e.g., excessive carbon emissions); and
- toxic pollution (e.g. bioaccumulation of persistent contaminants).

Sources of data:

Data source: International Union for Conservation of Nature and Natural Resources (IUCN) Red List which assigns categories of relative extinction risk, such as "vulnerable", "endangered" or "critically endangered", to a broad range of species.

The data is compiled by United Nations Environment Programme - World Conservation Monitoring Centre (UNEP-WCMC).

Method of computation:

Study methods include observation and photography, live trapping, and **transect** sampling [30]. All of the methods result in an estimate of the number of individuals in the population. This number is then compared with what is considered a minimum viable population, which is the smallest number of individuals of a species in a particular area that can survive and maintain genetic diversity.

Gender issues:

Not applicable.

Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

INDICATOR 7.8: PROPORTION OF POPULATION USING AN IMPROVED DRINKING WATER SOURCE

Responsible international agency:

WHO/UNICEF

Definition:

The proportion of the population using an improved drinking water source, total, urban, and rural (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=667>) [91] is the percentage of the population who use any of the following types of water supply for drinking: piped water into dwelling, plot or yard; public tap/standpipe; borehole/tube well; protected dug well; protected spring; rainwater collection and bottled water (if a secondary available

source is also improved). It does not include unprotected well, unprotected spring, water provided by carts with small tanks/drums, tanker truck-provided water and bottled water (if secondary source is not an improved source) or surface water taken directly from rivers, ponds, streams, lakes, dams, or irrigation channels.

Rationale:

This indicator reflects human aspiration worldwide to reverse the loss of critical environmental resources of improving sustainable access to safe water and pull people out of slums.

Sources of data:

Primary data sources used for international monitoring include nationally representative household surveys, including Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS), World Health Surveys (WHS), Living Standards and Measurement Surveys (LSMS), Core Welfare Indicator Questionnaires (CWIQ), (Pan Arab Project for Family Health Surveys (PAPFAM), and population censuses. Surveys such as Household Budget Surveys, Reproductive Health Surveys, Labour Force Surveys, and Welfare Monitoring Surveys have also been found useful in providing this data.

Method of computation:

The indicator is estimated as the ratio of the number of people with access to improved drinking water source to the total population, expressed as a percentage. The same method applies to rural and urban estimates.

Gender issues:

Applicable but difficult in practice particularly that the data is not routinely collected through regular surveys.

INDICATOR 7.9: PROPORTION OF POPULATION USING AN IMPROVED SANITATION FACILITY

Responsible international agency:

WHO/UNICEF

Definition:

The proportion of the population using an improved sanitation facility, total, urban, rural (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=31>) [92] is the percentage of the population with access to facilities that hygienically separate human excreta from human contact. Improved facilities include flush/pour flush toilets or latrines connected to a sewer, -septic tank, or -pit, ventilated improved pit latrines, pit latrines with a slab or platform of any material which covers the pit entirely, except for the drop hole and composting toilets/latrines. Unimproved facilities include public or shared facilities of an otherwise acceptable type, flush/pour-flush toilets or latrines which discharge directly into an open sewer or ditch, pit latrines without a slab, bucket latrines, hanging toilets or latrines which

directly discharge in water bodies or in the open and the practice of open defecation in the bush, field or bodies or water.

Rationale:

The indicator records the proportion of the population using an improved sanitation facility. The use of drinking water sources and sanitation facilities is part of the wealth-index used by household surveys to divide the population into wealth quintiles.

Sources of data:

Primary data sources used for international monitoring include nationally representative household surveys, including Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS), World Health Surveys (WHS), Living Standards and Measurement Surveys (LSMS), Core Welfare Indicator Questionnaires (CWIQ), (Pan Arab Project for Family Health Surveys (PAPFAM), and population censuses. Surveys such as Household Budget Surveys, Reproductive Health Surveys, Labour Force Surveys, and Welfare Monitoring Surveys have also been found useful in providing this data.

National-level household surveys are generally conducted every 3-5 years in most developing countries, while censuses are generally conducted every 10 years

Method of computation:

The indicator is estimated as the ratio of the number of people using improved sanitation facilities, to the total population, expressed as a percentage. The same method applies to the rural and urban estimates.

Gender issues:

Applicable but difficult in practice particularly that the data is not routinely collected through regular surveys.

Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

INDICATOR 7.10: PROPORTION OF URBAN POPULATION LIVING IN SLUMS

Responsible international agency:

UN Habitat

Definition:

The proportion of urban population living in slums

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=710>);

(http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/poverty/urban_slums.pdf) [93] is defined as the proportion of urban population living in slum households. A slum

household is defined as a group of individuals living under the same roof lacking **one or more**¹ of the conditions below:

- access to improved water;
- access to improved sanitation;
- sufficient-living area;
- durability of housing; and
- security of tenure.

Housing durability refers to permanency of Structure; compliance of building codes; and location of house (hazardous).

Sufficient living area - A house is considered to provide a sufficient living area for the household members if three or less people share the same room.

Security of tenure refers to: Evidence of documentation that can be used as proof of secure tenure status; or Either *de facto* or perceived protection from forced evictions

Rationale:

This indicator measures the proportion of urban dwellers living in deprived housing conditions. It is a key indicator measuring the adequacy of the basic human need for shelter. An increase of this indicator is a sign of deteriorating living conditions in urban areas

Sources of data:

Primary data sources include household surveys such as DHS, MICS. Also, Population and Housing Censuses.

Method of computation:

In principle, the indicator can easily be computed if data on all five conditions are contained in household surveys. When household survey data are available, the response categories for questions on access to water, access to sanitation, overcrowding, quality of dwelling and security of tenure are reviewed. Where possible, the response categories are grouped or interpreted according definitions of slum dwellers. Households that lack either of the above conditions are tallied ensuring that, a household lacking more than one condition is only counted once. Proportion of population living in these households is then estimated.

Gender issues:

Relevant but leads to complexity in making calculations.

Goal 8: Develop a global partnership for development

Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system

Includes a commitment to good governance, development and poverty reduction – both nationally and internationally

Target 8.B: Address the special needs of the least developed countries

Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction

Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)

Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries and small island developing States.

Official Development Assistance (ODA)

INDICATOR 8.1: NET ODA, TOTAL AND TO THE LEAST DEVELOPED COUNTRIES, AS PERCENTAGE OF OECD/DAC DONORS' GROSS NATIONAL INCOME

Responsible international agency:

OECD, Development Assistance Committee

Definition:

Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income is the total Net ODA to LDCs as percentage of total OECD/DAC donors GNI where the

Net Official Development Assistance (ODA) comprises grants or loans to developing countries and territories on the Organization for Economic Cooperation and Development/Development Assistance Committee (OECD/DAC) list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms. Technical cooperation is included. Grants, loans and credits for

military purposes are excluded. Also excluded are aid to more advanced developing and transition countries as determined by the DAC.

Donors' gross national income (GNI) at market prices is the sum of gross primary incomes receivable by resident institutional units and sectors. That is GNI is equal to GDP less taxes (less subsidies) on production and imports, compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=650>) [94].

Rationale:

Goal 8 addresses the way developed countries can assist developing countries to achieve the other seven goals through more development assistance, improved access to markets and debt relief. The International Conference on Financing for Development, held in Monterrey, Mexico in 2002, stimulated commitments from major donors to start to reverse the decline in official development assistance and focus more on poverty reduction, education and health to help countries realize the Millennium Development Goals.

The list of least developing countries covers includes the following 50 countries, classified by region: Africa: Angola, Benin, Burkina Faso, Burundi, Cape Verde, the Central African Republic, Chad, Comoros, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, the Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Saõ Tomé and Príncipe, Senegal, Sierra Leone, Somalia, the Sudan, Togo, Uganda, the United Republic of Tanzania and Zambia; Asia and the Pacific: Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, the Lao People's Democratic Republic, Maldives, Myanmar, Nepal, Samoa, Solomon Islands, Timor Leste, Tuvalu, Vanuatu and Yemen; Latin America and the Caribbean: Haiti
(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [95]

Sources of data:

OECD/DAC Secretariat collects the data from the countries

Method of computation:

Net ODA development assistance= (Total Net ODA to LDCs/ Total OECD/DAC donors GNI)x100

Gender issues:

Not applicable

INDICATOR 8.2: PROPORTION OF TOTAL BILATERAL, SECTOR-ALLOCABLE ODA OF OECD/DAC DONORS TO BASIC SOCIAL SERVICES (BASIC EDUCATION, PRIMARY HEALTH CARE, NUTRITION, SAFE WATER AND SANITATION)

Responsible international agency:

OECD, Development Assistance Committee

Definition:

Official development assistance comprises grants or loans to developing countries and territories on the OECD Development Assistance Committee (DAC) list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms. Technical cooperation is included. Grants, loans and credits for military purposes are excluded. Also excluded are aid to more advanced developing and transition countries as determined by the DAC.

Basic education comprises primary education, basic life skills for youth and adults and early childhood education. Primary health care includes basic health care, basic health infrastructure, basic nutrition, infectious disease control, health education and health personnel development. Population policies/programs and reproductive health includes population policy and administrative management, reproductive health care, family planning, sexually transmitted disease (STD) control including HIV/AIDS and personnel development (population & reproductive health). Basic social services (BSS) also include basic drinking water supply and basic sanitation, and multi-sector aid for BSS.

Bilateral official development assistance is from one country to another (<http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=593>) [96].

Rationale:

The World Summit on Social Development at Copenhagen in 1995 suggested the possibility of “mutual commitment between interested developed and developing country partners to allocate, on average, 20 per cent of ODA and 20 per cent of the national budget, respectively, to basic social programmes”. These programmes comprise basic education, basic health, population and reproductive health programmes, and poverty-focused water and sanitation projects

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [97].

Sources of data:

Compiled by the Development Assistance Committee of the OECD.

Method of computation:

ODA to basic social services as percentage of sector-allocable ODA where ODA and Basic Social Services are defined under Definition

Gender issues:

Not applicable

INDICATOR 8.3: PROPORTION OF BILATERAL OFFICIAL DEVELOPMENT ASSISTANCE OF OECD/DAC DONORS THAT IS UNTIED

Responsible international agency:

OECD, Development Assistance Committee

Definition:

Official development assistance (ODA) comprises grants or loans to developing countries and territories on the OECD Development Assistance Committee list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms. Technical cooperation is included. Grants, loans and credits for military purposes are excluded. Also excluded are aid to more advanced developing and transition countries as determined by the DAC.

Untied bilateral official development assistance is assistance from country to country for which the associated goods and services may be fully and freely procured in substantially all countries (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=35>) [98].

Rationale:

Typing procurement from aid contracts to suppliers in the donor country reduces its cost effectiveness. Recognizing this, OECD/DAC member countries have raised the share of their aid that is untied. The share of untied aid to the least developed countries has risen relatively slowly, but the situation is likely to improve with the implementation of the new DAC Recommendation on Untying Official Development Assistance to the Least Developed Countries (<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [99].

Sources of data:

Data is compiled by the Development Assistance Committee of the OECD.

Method of computation:

a) Net bilateral ODA untied (US\$ million),

b) Net bilateral ODA untied / total net bilateral ODA (%).

Components of bilateral untied and net ODA are described in the "Definition" section, above.

Gender issues:

Not applicable

INDICATOR 8.4: ODA RECEIVED IN LANDLOCKED DEVELOPING COUNTRIES AS A PROPORTION OF THEIR GROSS NATIONAL INCOMES

Responsible international agency:

Organisation for Economic Co-operation and Development/Development Assistance Committee.

Definition:

Official development assistance (ODA) comprises grants or loans to developing countries and territories on the Organisation for Economic Co-operation and Development/Development Assistance Committee (OECD/DAC) list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms (if a loan, having a grant element of at least 25 percent). Technical cooperation is included. Grants, loans and credits for military purposes are excluded. Also excluded are aid to more advanced developing and transition countries as determined by the DAC. *Bilateral official development assistance* is from one country to another.

Recipient countries' gross national income (GNI) at market prices is the sum of gross primary incomes receivable by resident institutional units and sectors. GNI at market prices was called gross national product (GNP) in the 1953 System of National Accounts. In contrast to gross domestic product (GDP), GNI is a concept of income (primary income) rather than value added (http://ddp-ext.worldbank.org/ext/GMIS/gdmis.do?siteId=2&contentId=Content_t36&menuId=LNAV01HOM1) [100].

Rationale:

The indicator addresses the special needs of landlocked countries to achieve their development goals.

Land-locked developing countries are: *Africa*: Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, Swaziland, Uganda, Zambia and Zimbabwe; *Asia and the Pacific*: Afghanistan, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao PDR, Mongolia, Nepal, Tajikistan, Turkmenistan and Uzbekistan; *Europe*: FYR of Macedonia and Rep. of Moldova (expected from 2003); *Latin America and the Caribbean*: Bolivia and Paraguay. (<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Sources of data:

Data are compiled by OECD/DAC.

Method of computation:

$(\text{ODA received by the landlocked country} / \text{GNI of the country}) \times 100$.

The time reference for the available data should either be the same or be adjusted to be as close as possible.

Gender issues:

Not applicable

INDICATOR 8.5: ODA RECEIVED IN SMALL ISLAND DEVELOPING STATES AS A PROPORTION OF THEIR GROSS NATIONAL INCOMES

Responsible international agency:

Organisation for Economic Co-operation and Development/Development Assistance committee.

Definition:

Official development assistance comprises grants or loans to developing countries and territories on the OECD Development Assistance Committee list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms (if a loan, having a grant element of at least 25 per cent). Technical cooperation is included. Grants, loans and credits for military purposes are excluded. Also excluded is aid to more advanced developing and transition countries as determined by DAC. *Recipient countries' gross national income* at market prices is the sum of gross primary incomes receivable by resident institutional units and sectors. GNI at market prices was called gross national product in the 1953 System of National Accounts. In contrast to gross domestic product, GNI is a concept of income (primary income) rather than value added.

(http://ddp-ext.worldbank.org/ext/GMIS/gdmis.do?siteId=2&contentId=Content_t36&menuId=LNAV01HOM1) [100].

Rationale:

The indicator addresses the special needs of small island developing States. That group of countries has very diverse incomes per capita, ranging from the least developed countries to high-income countries. The least developed countries need continued aid, which should be monitored closely.

The small island developing States are by region: *Africa*: Cape Verde, Comoros, Guinea-Bissau, Mauritius, Saõ Tomé and Príncipe, and Seychelles; *Asia and the Pacific*: Bahrain, Cook Islands, Fiji, Kiribati, Maldives, Marshall Islands, Micronesia (Federated States of), Nauru, Niue, Palau, Papua New Guinea, Samoa, Singapore, Solomon Islands, Timor Leste, Tokelau, Tonga, Tuvalu and Vanuatu; *Europe*: Cyprus and Malta; *Latin America and the Caribbean*: Antigua and Barbuda, Aruba, the Bahamas, Barbados, Belize, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Netherlands Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and the U.S. Virgin Islands.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101]

Sources of data:

Data are compiled by OECD/DAC.

Method of computation:

- a) Net ODA received by each SIDS (US\$ million);
- b) Net ODA received by each SIDS / GNI of each SIDS (%).

SIDS=Small Island Developing Countries

Components of ODA, GNI and the list of SIDS are described in the “Definition” section, above.

Gender issues:

Not applicable

Market access

INDICATOR 8.6: PROPORTION OF TOTAL DEVELOPED COUNTRY IMPORTS (BY VALUE AND EXCLUDING ARMS) FROM DEVELOPING COUNTRIES AND LEAST DEVELOPED COUNTRIES, ADMITTED FREE OF DUTY

Responsible international agency:

United Nations Conference on Trade and Development in collaboration with the World Bank and the World Trade Organization,

Definition:

Imports and imported value of goods (merchandise) are goods that add to the stock of material resources of a country by entering its economic territory. Goods simply being transported through a country (goods in transit) or temporarily admitted (except for goods for inward processing) do not add to the stock of material resources of a country and are not included in international merchandise trade statistics. In many cases, a country’s economic territory largely coincides with its customs territory, which is the territory in which the customs laws of a country apply in full. *Goods admitted free of duties* are exports of goods (excluding arms) received from developing countries and admitted without tariffs to developed countries. There is no established convention for the designation of *developed* and *developing* countries or areas in the United Nations system. In common practice, Japan in Asia, Canada and the United States in North America, Australia and New Zealand in Oceania and Europe are considered “developed” regions or areas. In international trade statistics, the Southern African Customs Union is also treated as a developed region, and Israel is treated as a developed country; countries emerging from the former Yugoslavia are treated as developing countries; and countries of eastern Europe and European countries of the former Soviet Union are not included under either developed or developing regions.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Rationale:

The indicator monitors the international effort made to remove barriers to trade for developing countries, to encourage the achievement of the Millennium Development Goals.

Poor people in developing countries work primarily in agriculture and labour-intensive manufacturing, sectors that confront the greatest trade barriers. Removing barriers to merchandise trade, therefore, could increase growth in those countries by a significant amount.

The General Assembly, on the recommendation of the Committee for Development Policy, through the Economic and Social Council decides on the countries to be included in the list of *least developed countries* (LDCs). As of January 2004, the list included the following African countries: Angola, Benin, Burkina Faso, Burundi, Cape Verde, the Central African Republic, Chad, Comoros, the Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, the Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Saõ Tomé and Príncipe, Senegal, Sierra Leone, Somalia, the Sudan, Togo, Uganda, the United Republic of Tanzania and Zambia.

Sources of data:

Tariff and import data are based on the International Trade Center (ITC), United Nations Conference on Trade and Development (UNCTAD) and WTO common database. WTO data are received directly from WTO Members, are processed and verified by the WTO, and validated jointly with the WTO Members. Data from ITC and UNCTAD are also taken from official sources and are subject to substantial verification procedures. All national data sets are reported according to the international agreed Harmonized System classification.

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=38>) [102].

Method of computation:

The sample does not cover all developed countries, because of availability of comprehensive detailed data on imports. Trade and tariff information at the national tariff line level covers Australia, Canada, the European Union (EU), Japan, Norway, Switzerland, and the USA.

The calculation of indicator is a straightforward ratio of the value (current US dollar) of those developed countries duty free imports from least developed and developing countries, compared with the total value of imports from these respective country groups.

Gender issues:

Not applicable

INDICATOR 8.7: AVERAGE TARIFFS IMPOSED BY DEVELOPED COUNTRIES ON AGRICULTURAL PRODUCTS AND TEXTILES AND CLOTHING FROM DEVELOPING COUNTRIES

Responsible international agency:

WTO, ITC, UNCTAD

Definition:

Average tariffs are the simple average of all applied ad valorem tariffs (tariffs based on the value of the import) applicable to the bilateral imports of developed countries. *Agricultural products* comprise plant and animal products, including tree crops but excluding timber and fish products. *Clothing* and textiles include natural and synthetic fibers and fabrics and articles of clothing made from them (<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Rationale:

The indicator monitors the international effort made to remove barriers to trade for developing countries in order to encourage the achievement of the Millennium Development Goals. Poor people in developing countries work primarily in agriculture and labour-intensive manufacturing, sectors that confront the greatest trade barriers. Removing barriers to merchandise trade, therefore, could increase growth in those countries by a significant amount

Sources of data:

The main source of data is the WTO Integrated Data Base (IBD), complemented by information from the International Trade Center (ITC) and United Nations Conference on Trade and Development (UNCTAD)

Method of computation:

To calculate average tariffs, each Harmonized System six-digit bilateral trade flow is given the same weight. The results for each developed country are then aggregated using the standard import pattern as the weighting scheme for all importers. The standard weighting scheme would be the average import structure of all developed markets for imports from the least developed countries and from developing countries. The tariff rates used are the available ad valorem rates, including most favoured nation and non-most-favoured nation (largely preferential) rates. As it is not possible to convert non-ad valorem rates to ad valorem equivalents, all tariff lines with non-ad valorem rates are excluded from the calculation. This affects, in particular, agricultural products, where almost 25 per cent of the Harmonized System six-digit product categories contain at least one non-ad valorem tariff line. Therefore, the agricultural part of the indicator is excluded from the initial data set until an appropriate methodology for treating non-ad valorem tariffs is developed.

Gender issues:

Not applicable

INDICATOR 8.8: AGRICULTURAL SUPPORT ESTIMATE FOR OECD COUNTRIES AS A PERCENTAGE OF THEIR GROSS DOMESTIC PRODUCT

Responsible international agency:

OECD

Definition:

Agricultural support is the annual monetary value of all gross transfers from taxpayers and consumers, both domestic and foreign (in the form of subsidies arising from policy measures that support agriculture), net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

For agricultural products, the total support estimate represents the overall taxpayer and consumer costs of agricultural policies. When expressed as a *percentage of GDP*, the total support estimate is an indicator of the cost to the economy as a whole.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Agricultural products comprise plant and animal products, including tree crops but excluding timber and fish products. Clothing and textiles include natural and synthetic fibers and fabrics and articles of clothing made from them.

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=40>) [102].

Rationale:

In penetrating foreign markets, developing countries face not only tariffs but also competition from products in developed countries that benefit from government subsidies. The challenge linked to the Doha Development Agenda is to further reduce production and trade-distorting support and implement policies that effectively address both domestic and international goals while ensuring well-functioning markets.

Sources of data:

All data on ODA are collected by the OECD/DAC Secretariat from its 23 members. The GDP data is also collected by OECD/DAC from the countries.

Method of computation:

a) Agricultural support estimate (US\$ million)

b) Agricultural support estimate / GDP (%)

Components of Agriculture support and GDP are described in the definition above.

Gender issues:

Not applicable

INDICATOR 8.9: PROPORTION OF ODA PROVIDED TO HELP BUILD TRADE CAPACITY**Responsible international agency:**

Organisation for Economic Co-operation and Development World Trade Organization

Definition:

Official Development Assistance (ODA) comprises grants or loans to developing countries and territories on the OECD Development Assistance Committee list of aid recipients that are undertaken by the official sector with promotion of economic development and welfare as the main objective and at concessional financial terms (if a loan, having a grant element of at least 25 per cent). Technical cooperation is included. Grants, loans and credits for military purposes are excluded. Also excluded is aid to more advanced developing and transition countries as determined by DAC.

Activities to help build trade capacity enhance the ability of the recipient country:

- To formulate and implement a trade development strategy and create an enabling environment for increasing the volume and value-added of exports, diversifying export products and markets and increasing foreign investment to generate jobs and trade;
- To stimulate trade by domestic firms and encourage investment in trade-oriented industries; and
- To participate in the benefit from the institutions, negotiations and processes that shape national trade policy and the rules and practices of international commerce. Those activities are further classified by the First Joint WTO/OECD Report on Trade-Related Technical Assistance and Capacity-Building (2002) under two main categories: trade policy and regulations (divided into nineteen subcategories) and trade development (divided into six subcategories).
- Donors differ in defining what constitutes a single “activity”. Some donors split individual activities into components in order to obtain detailed data on aid allocated to each subcategory. Others classify the whole activity under the most relevant subcategory. For some donors, the number of records in the database is larger than the actual number of activities.
- In the Joint Report by the World Trade Organization and the Organisation for Economic Co-operation and Development, the data are based on the actual number of activities. (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=717>) [103].

Rationale:

At the Fourth Ministerial Conference of the World Trade Organization, held in Doha in 2001, donors committed to providing increased support to help developing countries, especially the least developed countries, build the capacity to trade and to integrate into world markets. Data collected for the indicator will help monitor the following aspects of trade-related official development assistance:

- Transparency of trade-related technical assistance delivered
- Sharing of information
- Minimization and avoidance of duplication
- Estimation of progress in the implementation of the Doha mandates on technical cooperation and capacity-building
- Coordination and coherence
- Achievement of the objectives mandated in paragraph 41 of the Ministerial Declaration

adopted by the Conference at Doha
<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Sources of data:

Data is reported by bilateral donors and multilateral and regional agencies and is stored in the World Trade Organization and the OECD *Doha Development Agenda* Trade Capacity-Building Database (TCBDB).

Method of computation:

ODA to help build trade capacity / total sector allocable ODA (%)

Components of ODA and activities to help build trade capacity are described in the “Definition” section, above.

Gender issues:

Not applicable

Debt sustainability

INDICATOR 8.10: TOTAL NUMBER OF COUNTRIES THAT HAVE REACHED THEIR HIPC DECISION POINTS AND NUMBER THAT HAVE REACHED THEIR HIPC COMPLETION POINTS (CUMULATIVE)

Responsible international agency:

International Monetary Fund and The World Bank

Definition:

The HIPC decision point is the date at which a heavily indebted poor country with an established track record of good performance under adjustment programmes supported by the International Monetary Fund (IMF) and the World Bank commits to undertake additional reforms and to develop and implement a poverty reduction strategy.

The HIPC completion point is the date at which the country successfully completes the key structural reforms agreed at the decision point, including the development and implementation of its poverty reduction strategy. The country then receives the bulk of debt relief under the HIPC Initiative without any further policy conditions.

<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Rationale:

A global partnership for development requires increased debt reduction for heavily indebted poor countries. The indicator will monitor the Heavily Indebted Poor Countries Initiative, a major international effort targeted specifically at improving developing countries’ debt sustainability. Launched in 1996 and enhanced in 1999 to broaden and accelerate debt relief,

the HIPC Initiative marked the first time that multilateral, official bilateral and commercial creditors united in a joint effort to reduce the external debt of the world's most debt-laden poor countries to sustainable levels.

Sources of data:

Information is compiled by the IMF and World Bank from their HIPC decision and completion point documents

Method of computation:

As per definition

Gender issues:

Not applicable

INDICATOR 8.11: DEBT RELIEF COMMITTED UNDER HIPC AND MDRI INITIATIVES

Responsible international agency:

International Monetary Fund and The World Bank

Definition:

Debt relief is committed under the Heavily Indebted Poor Countries (HIPC) Initiative when a country reaches its decision point. It is calculated as the amount needed to bring the net present value (NPV) of the country's debt level to the thresholds established by the HIPC Initiative (150 percent of exports or in certain cases 250 percent of fiscal revenues).

Heavily indebted poor countries reach decision point if they have a track record of macroeconomic stability, have prepared an Interim Poverty Reduction Strategy through a participatory process, and have cleared or reached an agreement on a process to clear the outstanding arrears to multilateral creditors. The amount of debt relief necessary to bring countries' debt indicators to HIPC thresholds is calculated, and countries begin receiving debt relief. (<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=787>) [104].

Rationale:

A global partnership for development requires increased debt reduction for heavily indebted poor countries. The indicator will monitor the Heavily Indebted Poor Countries Initiative, a major international effort targeted specifically at improving developing countries' debt sustainability. Launched in 1996 and enhanced in 1999 to broaden and accelerate debt relief, the HIPC Initiative marked the first time that multilateral, official bilateral and commercial creditors united in a joint effort to reduce the external debt of the world's most debt-laden poor countries to sustainable levels.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Sources of data:

For each "pre-decision-point" country, World Bank and IMF staffs conduct a mission to undertake a DSA before HIPC debt relief is provided. A key part of the mission is loan-by-loan debt data reconciliation between creditor and debtor loan statements. Once the loan-by-loan debt database has been reconciled they proceed with the calculation of HIPC debt relief and subsequent DSA.

Method of computation:

As per definition

Gender issues:

Not applicable

INDICATOR 8.12: DEBT SERVICE AS A PERCENTAGE OF EXPORTS OF GOODS AND SERVICES**Responsible international agency:**

International Monetary Fund and The World Bank

Definition:

External debt service refers to principal repayments and interest payments made to non-residents in foreign currency, goods or services. Long-term refers to debt that has an original or extended maturity of more than one year.

Exports of goods and services comprise sales, barter or gifts or grants of goods and services from residents to non-residents. Where exports of goods are valued f.o.b., the costs of transportation and insurance up to the border of the exporting country are included in exports of goods. Other transactions involving a mixture of goods and services, such as expenditures by foreign travellers in the domestic market, may all have to be recorded under services in the rest of the world account. Export receipts along with worker remittances received from abroad provide the foreign exchange proceeds for meeting external debt service obligations.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

Rationale:

The targets on debt relief also address the need to make debt sustainable in the long-term. The indicator is one measure of whether debt levels are sustainable.

Sources of data:

Loan-by-loan information on external debt is reported to the World Bank's Debt Reporting System by the country authorities (ministry of finance or central bank). All data related to public and publicly guaranteed debt are provided on a loan-by-loan basis by debtors except for lending by some multilateral agencies, in which case data are taken from the creditors' records. These creditors include the African Development Bank, the Asian Development Bank,

the Inter- American Development Bank, and the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). Reports contain annual stocks and flows information as well as terms and conditions of individual loans contracted.

Based on this information, country-level debt service data are estimated by the World Bank staff. These initial estimates are subject to internal review, which consists of asking the Bank country offices for verification and cross-checking with other sources including statements and reports of several regional development banks, government lending agencies, and official government websites. Country offices use various sources for the verification including contacting the central banks. Exports of goods, services, and income come from the IMF's Balance of Payments (BOP) database. BOP data reported by countries are, in some cases, adjusted by the IMF. No comparison has been made between the IMF BOP files and country published data.

As mentioned above, data are converted to U.S. dollars, using the IMF par values or central rates, or the current market rates where appropriate, to enable international comparability. Data are also verified against other sources, and are adjusted, as described above, as needed to ensure completeness and accuracy.

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=655>) [105].

Method of computation:

Debt service is calculated by the World Bank based on the loan-by-loan information reported by the countries to the World Bank's Debt Reporting System (DRS). Some adjustments are made to debt service based on known HIPC debt relief commitments and other information obtained by World Bank and IMF staff. Exports of goods, services, and income come from the IMF's Balance of Payments (BOP) database. In some cases the IMF adjusts BOP data reported by countries.

The indicator is calculated as the ratio of external debt service to exports of goods and services, expressed as a percentage

Gender issues:

Not applicable

Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries

INDICATOR 8.13: PROPORTION OF POPULATION WITH ACCESS TO AFFORDABLE ESSENTIAL DRUGS ON A SUSTAINABLE BASIS

Responsible international agency:

World Health Organization

Definition:

The *proportion of population with access to affordable essential drugs on a sustainable basis* is the percentage of the population that has access to a minimum of 20 most essential drugs. Access is defined as having drugs continuously available and affordable at public or private health facilities or drug outlets that are within one hour's walk of the population.

Essential drugs are drugs that satisfy the health care needs of the majority of the population. The World Health Organization has developed the Model List of Essential Drugs, which is regularly updated through widespread consultations with member States and other partners. Progress in access to essential medicines is thus the result of combined effort by governments, strategic partners such as United Nations agencies, public-private partnerships, non-governmental organizations and professional associations (WHO Expert Committee on Essential Drugs, November 1999)

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm> [101]).

Rationale:

Millions of people die prematurely or suffer unnecessarily each year from diseases or conditions for which effective medicines or vaccines exist. Essential drugs save lives and improve health, but their potential can only be realized if they are accessible, rationally used and of good quality.

Sources of data:

The Action Programme on Essential Drugs of the World Health Organization periodically interviews experts in each country about the pharmaceutical situation, asking them to rate access by the population to essential drugs at less than 50 per cent, 50–80 per cent, 80–95 per cent or more than 95 per cent (WHO Expert Committee on Essential Drugs, November 1999).

Method of computation:

The World Health Organization regularly monitors access to a minimum of 20 most essential drugs.

Gender issues:

Not applicable

Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

INDICATOR 8.14: TELEPHONE LINES PER 100 POPULATION

Responsible international agency:

International Telecommunication Union

Definition:

Telephone lines refer to the number of telephone lines connecting subscribers' terminal equipment to the public switched network and that have a dedicated port in the telephone exchange equipment.

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=755>) [106].

Rationale:

Effective communication among those involved in the development process is not possible without the necessary infrastructure. Personal computers and telephones allow people to exchange experiences and learn from each other, enabling higher returns on investment and avoiding problems of duplication or missing information. The use of information and communication technologies can make Governments more transparent, thereby reducing corruption and leading to better governance. It can help people in rural areas find out about market prices and sell their products at a better price. It can also overcome traditional barriers to better education by making books available online and opening the door to e-learning.

Sources of data:

Data on telephone lines subscribers are collected through annual questionnaires that the International Telecommunication Union (ITU) sends to government telecommunication agencies. The questionnaire is supplemented by annual reports of industry organizations to cross-check accuracy and to obtain data for countries that do not reply to the questionnaire.

Method of computation:

Total telephone lines are divided by the country's population and multiplied by 100.

Gender issues:

Not applicable

INDICATOR 8.15: CELLULAR SUBSCRIBERS PER 100 POPULATION

Responsible international agency:

International Telecommunication Union

Definition:

Cellular subscribers refers to users of cellular telephones who subscribe to an automatic public mobile telephone service that provides access to the public switched telephone network using cellular technology

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=756>) [107].

Rationale:

Effective communication among those involved in the development process is not possible without the necessary infrastructure. Personal computers and telephones allow people to exchange experiences and learn from each other, enabling higher returns on investment and avoiding problems of duplication or missing information. The use of information and communication technologies can make Governments more transparent, thereby reducing corruption and leading to better governance. It can help people in rural areas find out about market prices and sell their products at a better price. It can also overcome traditional barriers to better education by making books available online and opening the door to e-learning.

Sources of data:

Data on cellular subscribers are collected through annual questionnaires that the International Telecommunication Union (ITU) sends to government telecommunication agencies. The questionnaire is supplemented by annual reports of industry organizations to cross-check accuracy and to obtain data for countries that do not reply to the questionnaire.

Method of computation:

Total cellular subscribers are divided by the country's population and multiplied by 100.

Gender issues:

Not applicable

INDICATOR 8.16: INTERNET USERS PER 100 POPULATION**Responsible international agency:**

International Telecommunication Union

Definition:

The Internet is a linked global network of computers in which users at one computer, if they have permission, can get information from other computers in the network

(<http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/Handbook.htm>) [101].

(<http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=48>) [108].

Rationale:

Indicators 47 and 48 are important tools for monitoring progress towards Goal 8, because effective communication among those involved in the development process is not possible without the necessary infrastructure. Personal computers and telephone lines allow people to exchange experiences and learn from each other, enabling higher returns on investment and avoiding problems of duplication or missing information. The use of information and communication technologies can make Governments more transparent, thereby reducing corruption and leading to better governance. It can help people in rural areas find out about

market prices and sell their products at a better price. It can also overcome traditional barriers to better education by making books available online and opening the door to e-learning.

Sources of data:

Internet user statistics are based largely on responses to an annual questionnaire that the International Telecommunication Union sends to government telecommunication agencies. For most developed and larger developing countries, Internet user data are based on methodologically sound user surveys conducted by national statistical agencies or industry associations. The data are either provided directly to the ITU by each country, or the ITU does the necessary research to obtain the data. For countries where Internet user surveys are not available, the ITU uses average multipliers to estimate the number of users per subscriber.

Method of computation:

The total number of Internet users is divided by the population and multiplied by 100

Gender issues:

Surveys have been conducted by some countries providing a breakdown between male and female Internet users. The surveys indicate that more men than women use the Internet. Since the availability of gender-disaggregated statistics for this indicator is limited, however, little is known about use by gender.

6.1 Defining institutional framework in the context of MDG indicators

The OECD glossary of statistical terms defines "Institutional Framework" [109] as a law or other formal provision that assign primary responsibility as well as the authority to an agency for the collection, processing, and dissemination of statistics; it also includes arrangements or procedures to facilitate data sharing and coordination between data producing agencies ("reporting requirements").

To ensure that government monitors adequately the production and reporting of MDG indicators, there is need for the establishment of an institutional framework composed of committees and institutions that will have different responsibilities e.g.

- Institutions involved in the production of the indicators;
- Civil society organizations as users;
- Donor community as users and providers of technical assistance; and
- Committees to (a) coordinate the production of indicators including data sharing, (b) establish policy regarding reporting and dissemination of the indicators, etc.

Indeed Committee(s) should be built on existing government system. The role of the National Statistical Office or National Planning Commission should be clearly defined in the framework document including the role of sector ministries. It is important that the National Statistical Office of the country plays a critical role in view of its coordination role on the production, dissemination, archiving etc. of official statistics.

The role of national organizations, such as research institutes, universities, NGOs and private consultancy firms in data collection and analysis of data should be spelt out.

6.2 Interaction with users, policy and decision makers:

There are certain advantages of user involvement in monitoring MDGs and these include:

- Better understanding of the MDGs, targets and indicators;
- Appropriate use in policy formulation and decision making;
- Donors may fund areas difficult to establish indicators including dissemination;
- Users demands will be addressed adequately;
- May propose additional indicators

The disadvantages may include:

- High demand for better quality data with limited resources;
- Misuse of data for different purposes;
- Demands may be impossible to meet;

On dissemination of MDG indicators, it is necessary to answer the question on who needs MDG indicators. They include:

- Decision makers
 - ✓ in Business
 - ✓ in Administration
 - ✓ in Politics
 - ✓ the Policy Cycle - Policy is “a course or principle of action adopted by a government, party, business or an individual”
- Research and Educational Institutions
- The Media
- Civil society
- Donor community
- NGO

It is necessary to establish an annual calendar of reporting MGD indicators, taking into account the reporting dates to the United Nations. The reporting of the indicators can be through paper media (publication), internet, etc.

In disseminating MDG indicators one cannot avoid mentioning reporting to Law Makers i.e. Members of parliament, Ministers and the President or prime Minister. There may be need to provide to them a package of MDG indicators to deliberate during their sessions. This is one way policy can be influenced at the political level.

6.3 Monitoring framework of the Inter-agency and Expert Group on Millennium Development Goals

It should be emphasized that the formulation and monitoring framework on MDG indicators is the work of the Inter-Agency and Expert Group. The technical work for the selection of the appropriate indicators of this Group is coordinated by the Department of Economic and Social Affairs of the United Nations Secretariat. The Group is mandated to prepare statistics and analyses on trends related to the Millennium Development Goals and to review methodologies and technical issues in relation to the indicators.

CHAPTER 7: VARIOUS CHALLENGES CONNECTED WITH MDG MEASUREMENT AND MONITORING

There are many challenges associated with the process of measuring and monitoring MDG indicators. The challenges are more pronounced, compared to other statistical series, because MDG indicators are many, varied and the requisite data comes from different sources, namely censuses, household surveys and administrative records. In addition, while data have to be comparable at national level, the issue is more daunting at international level. Some indicators are derived at national level, for some countries others are estimated at international level by international agencies. The challenge is to make sure that data are collected and indicators are computed following agreed international standards to ensure accuracy of indicators at national level and also for cross-country comparability.

For many countries the above mentioned sources are disjointed and in no way coordinated. For example, in the case of social statistics which are a major input into the computation of MDG indicators, in many countries, there still exists lack of coordination and rationalization of different sources of relevant statistics. In most cases the statistics tend to be incomparable across sources. Different agencies tend to use varying concepts, definitions and units for data collection and analysis for similar constructs. In situations where choices have to be made among similar indicators, it may be difficult to know which indicator is more reliable [110].

Apart from MDG data resulting, for most African countries, from censuses of population and housing and large-scale sample surveys, administrative records are another source of data relevant to MDGs (refer to chapter 2). However such statistics may be restricted to some small segments of the population. For instance, data on civil registration in many African countries are only available for urban areas. This implies that the measurement of Some demographic indicators may be restricted to some segments of the national population. MDG statistics that are generated mainly as by-products of administration, generally, suffer from incompleteness and vague conceptualization. The statistics still remain underdeveloped and mostly under the auspices of their administrative agencies, or line ministries. Thus the common issues to grapple with in the context of administrative records, in many countries, are that often they are limited in content and their use weighs more towards administration. They do not have the adaptability of household surveys in concepts or subject detail.

In general, many countries find it difficult to maintain routine data collection exercises, let alone improve them. They lag far behind in the adoption of new statistical standards or in Carrying out the requisite studies and data collection efforts needed to produce high quality statistics. Therefore many systems, in the region, are not up to date in providing the basic information needed to monitor progress toward the MDGs [111].

Comparison of data with other national and international reported data

The increased demand for data to measure and monitor indicators necessitates the need to evaluate the different sources, organizations and methods for producing MDG related data. Most data are collected through national statistical systems some which are not coordinated. National data enter the international statistical system in a process through which specialized agencies review and further standardize national data to produce some, Indicators. This approach has, at times, aroused controversy as countries complain that they were not consulted when some computations were made. In addition, for some countries, international estimates contradicted national estimates [112]. This is a public relations challenge which is and can be resolved by close consultations between countries and international agencies.

Coordination

Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system [113]. However, many African countries lack mechanisms for coordination among producers of MDG data. For example, there is absence of coordination for the harmonization of definitions, concepts and classifications among different sources.

Inter-institutional collaboration both at the national and international levels can, in part, enhance coordination. In this way duplication, dissemination of contradictory and incomparable information can be minimized and the use of scarce resources maximized [114]. It has often been argued that “competing, inconsistent results on the same issue introduce scepticism and doubts in user’s minds and the quality of such data is viewed with suspicion. This results in diminished belief in statistics [115].

In order for international organizations to receive quality MDG related information, there is need to develop closer partnerships among international agencies and national statistics systems. Mechanisms should be in place to harmonize requests for metadata. Coordination of MDG data could facilitate also the interlinking and standardizing of data from different sources for those countries where this aspect is still a problem.

Comparability of MDG social statistics

One of the major challenges to MDG statistics is ensuring comparability of data over a period of time within a country and at international level. Comparability of data is a problem especially when different sources are combined (see chapter 2 of this paper). In general, statistics have greater usefulness when they can be amenable to comparison over space and time [116]; this is certainly true for most MDG statistics. However, this is far from reality. To monitor change across geographic, sectoral, and temporal dimensions the comparability of MDG statistics will require the use of common concepts, definitions and to some extent methodologies for data collection and analysis.

While the collection of comparable MDG statistics is difficult, their importance is increasing. Problems associated with assembling cross-national comparable data include the need for the lowest common denominator, the burden created on responding countries while the cross-national data may not be specific to national needs. There is a lack of metadata supporting most cross-national data making the interpretation and comparison of MDG data problematic.

Statistical capacity

Statistical capacity encompasses a number of elements such as: organizational Structure of the national statistical system; human and financial resources; statistical training and data collection, processing, analysis and dissemination capabilities. For many African countries the statistical capacity is weak. As earlier stated collecting a myriad of MDG statistics requires a mixture of sound data sources such as civil, samples surveys, censuses and administrative records to accomplish the above tasks there is need for viable national Statistical systems. For some countries national statistical offices and other producers of statistics, for example line ministries; do not have the capacity to produce high quality MDG related statistics because of the following reasons: lack of trained manpower, staff turnover, and inadequate resources [103].

Creation of Databases

As discussed in chapters 2 and 3 the sources of MDG data include Censuses, surveys to some extent administrative records, there is therefore a need to have the relevant data in a database or databases. In this regard the national statistical office would be the appropriate agency to maintain the database as, in most countries, it is a responsible institution for statistical coordination.

Great strides can be obtained from the advances in information and communication technology coupled with improved coordination in establishing priorities and standards by the national statistical system. Statistical outcomes will show more consistency and better comparability over space and time.

At the International level a Task Force was established, by the Inter Agency Expert Group (IAEG), to work out a mechanism for the exchange of MDG data within a country and between international agencies. The Task Force has been working on defining the Data Structure Definition (DSD) and Code lists for MDG indicators. The Statistical Data and Metadata Exchange (SDMX) standards give technical specifications for exchanging statistical and metadata. They have created the DSD that is flexible which permits agencies to report data using SDMX (UNSD, 2010). The challenge is to use SDMX universally as a basis for data exchange between countries and international organizations.

Reporting of data

There are established ways of reporting MDG data to the United Nations including when the data should be reported.

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Official list of MDG indicators
All indicators should be disaggregated by sex and urban/rural as far as possible.
Effective 15 January 2008

Millennium Development Goals (MDGs)	
Goals and Targets (from the Millennium Declaration)	Indicators for monitoring progress
Goal 1: Eradicate extreme poverty and hunger	
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1 Proportion of population below \$1 (PPP) per day ⁱ 1.2 Poverty gap ratio 1.3 Share of poorest quintile in national consumption
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	1.4 Growth rate of GDP per person employed 1.5 Employment-to-population ratio 1.6 Proportion of employed people living below \$1 (PPP) per day 1.7 Proportion of own-account and contributing family workers in total employment
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Prevalence of underweight children under-five years of age 1.9 Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1 Net enrolment ratio in primary education 2.2 2.2 Proportion of pupils starting grade 1 who reach last grade of primary school 2.3 Literacy rate of 15-24 year-olds, women and men
Goal 3: Promote gender equality and empower women	
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1 Ratios of girls to boys in primary, secondary and tertiary education 3.2 Share of women in wage employment in the non-agricultural sector 3.3 Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1 Under-five mortality rate 4.2 Infant mortality rate 4.3 Proportion of 1 year-old children immunised against measles
Goal 5: Improve maternal health	
Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1 Maternal mortality ratio 5.2 Proportion of births attended by skilled health personnel
Target 5.B: Achieve, by 2015, universal access to reproductive health	5.3 Contraceptive prevalence rate

	5.4 Adolescent birth rate
	5.5 Antenatal care coverage (at least one visit and at least four visits)
	5.6 Unmet need for family planning
Goal 6: Combat HIV/AIDS, malaria and other diseases	
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1 HIV prevalence among population aged 15-24 years 6.2 Condom use at last high-risk sex 6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS 6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs
Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	6.6 Incidence and death rates associated with malaria 6.7 Proportion of children under 5 sleeping under insecticide-treated bednets 6.8 Proportion of children under 5 with fever who are treated with appropriate antimalarial drugs 6.9 Incidence, prevalence and death rates associated with tuberculosis 6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course
Goal 7: Ensure environmental sustainability	
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	7.1 Proportion of land area covered by forest 7.2 CO2 emissions, total, per capita and per \$1 GDP (PPP) 7.3 Consumption of ozone-depleting substances
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.4 Proportion of fish stocks within safe biological limits 7.5 Proportion of total water resources used 7.6 Proportion of terrestrial and marine areas protected 7.7 Proportion of species threatened with extinction
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums ⁱ
Goal 8: Develop a global partnership for development	
Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system	<i>Some of the indicators listed below are monitored separately for developed countries (LDCs), Africa, landlocked developing countries and island developing States.</i>
Includes a commitment to good governance, development and poverty reduction – both nationally and internationally	<u>Official development assistance (ODA)</u>
Target 8.B: Address the special needs of the least developed countries	8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income

<p>Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction</p> <p>Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)</p> <p>Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term</p>	<p>8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donor countries to basic social services (basic education, primary health care, nutrition, water and sanitation)</p> <p>8.3 Proportion of bilateral official development assistance of OECD/DAC donor countries that is untied</p> <p>8.4 ODA received in landlocked developing countries as a proportion of national incomes</p> <p>8.5 ODA received in small island developing States as a proportion of national incomes</p> <p><u>Market access</u></p> <p>8.6 Proportion of total developed country imports (by value and excluding exports from developing countries and least developed countries, admitted free of tariff and non-tariff barriers)</p> <p>8.7 Average tariffs imposed by developed countries on agricultural products, textiles and clothing from developing countries</p> <p>8.8 Agricultural support estimate for OECD countries as a percentage of gross domestic product</p> <p>8.9 Proportion of ODA provided to help build trade capacity</p> <p><u>Debt sustainability</u></p> <p>8.10 Total number of countries that have reached their HIPC decision point minus the number that have reached their HIPC completion points (cumulative)</p> <p>8.11 Debt relief committed under HIPC and MDRI Initiatives</p> <p>8.12 Debt service as a percentage of exports of goods and services</p>
<p>Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries</p>	<p>8.13 Proportion of population with access to affordable essential drugs on a sustainable basis</p>
<p>Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications</p>	<p>8.14 Telephone lines per 100 population</p> <p>8.15 Cellular subscribers per 100 population</p> <p>8.16 Internet users per 100 population</p>

The Millennium Development Goals and targets come from the Millennium Declaration, signed by 189 countries, including 147 heads of State and Government, in September 2000 (<http://www.un.org/millennium/declaration/ares552e.htm>) and from further agreement by member states at the 2005 World Summit (Resolution adopted by the General Assembly - A/RES/60/1, <http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/60/1>). The goals and targets are interrelated and should be seen as a whole. They represent a partnership between the developed countries and the developing countries "to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty".