THE STATUS OF DEMOGRAPHIC AND HEALTH-RELATED MDGS IN CARIBBEAN COUNTRIES

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Introduction

Having passed the half-way point towards the target date (2015) of achieving the Millennium Development Goals (MDGs) and other Internationally Agreed Development Goals (IADGs) the international community has further rallied behind efforts to reach the goals adopted in the Millennium Declaration in 2000. Fulfilment of the MDGs has become even more a challenge under the current international financial crisis and economic slow down or even contraction.

Measuring the progress in the path towards the targets is of utmost importance in these efforts. Under the project entitled *'Strengthening the capacity of National Statistical Offices in the Caribbean Small Island Developing States to fulfil the Millennium Development Goals and other Internationally Agreed Development Goals'*, the Economic Commission for Latin America and the Caribbean (ECLAC) has received funding for the building and strengthening of institutional capabilities for generating and compiling reliable social and economic statistics in the Caribbean subregion.

Within this project, a two-day expert group meeting was convened in February 2008[1] in which a background paper was presented that gave information on the organization of data collection in the Caribbean subregion[2]. One of the conclusions drawn was that there was a lack of coordination among the various national agencies involved in collecting and reporting on the MDGs. Another issue that came forward was the under-utilization of available data sources and information and guidance offered by the various agencies of the United Nations.

Demographic and health-related MDGs and indicators make up three of the eight Goals. They are the responsibility of a mixture of National Statistical Offices (NSOs) and health ministries and related agencies. In 2008, new targets were added to the MDGs, half of them were demographic and health-related. Availability, data collection, and reporting of demographic and health-related indicators in the Caribbean subregion are limited. This report therefore concentrates on the demographic and health-related MDGs: 'Reduce Child Mortality (MDG 4)', 'Improve Maternal Health (MDG 5)', and 'Combat HIV/AIDS, Malaria and Other Diseases (MDG 6)'[3]

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[1] ECLAC (2009) Report Of The First Meeting Of The Steering Committing On Strengthening The Capacity Of National Statistical Offices (NSOs) In The Caribbean Small Island Developing States To Fulfil The Millennium Development Goals (MDGs) And Other Internationally Agreed Development Goals (IADG). LC/CAR/L.192.

[2] ECLAC (2009), The Status of MDG monitoring and reporting in selected Caribbean countries. WP/2009/1.

[3] Health-related indicators can also be found under Targets of other Goals, such as Goal 1, Target 1c 'Half the proportion of people who suffer from hunger' or Goal 8, Target 8e: 'In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries' and others, but these will not be considered at this point in time.

The aim is to provide a general context and to give an overview of the status of the demographic and health-related MDGs in the Caribbean subregion. In order to set the general context, first, the background and philosophy behind the MDGs is briefly reiterated. Next, the role of the United Nations in the Millennium Development effort is discussed. Methodological considerations are discussed in the fourth section. The next part deals with the national setting in producing and reporting of the demographic and health-related MDGs.

I. MILLENNIUM DEVELOPMENT GOALS: TARGETING DEVELOPMENT

The pledge behind the MDGs is to "spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty". Development is the aim for which the Millennium Goals were set. The MDG indicators are not the end, but a means to measure the advancement to the fulfilment of the development goals that were formulated. It is important to remember that the indicators are a proxy for measuring advancements in the MDGs; they are not goals in themselves. The importance of monitoring the progress by objectively measuring achievements in the form of proper indicators should be stressed and only reliable indicators and those that are relevant in measuring the specific developing issues of a country are useful in the MDGs monitoring process.

The previously agreed global goals and targets set at the Millennium Summit and documented in the Millennium Declaration of September 2000 were based on observed global trends in the 1970s and 1980s. The eight MDGs were operationalized into 18 targets and 48 indicators, which were revised and extended by four new targets in 2007[4]. The availability of data was an important criterion for selecting the indicators. The demographic and health-related MDGs, the targets and the indicators are listed in Annex I.

The MDGs encapsulate the development aspirations of the world as a whole; they are global goals and not necessarily national goals. Depending on the situation in each individual country, the improvements needed could be faster or they might be slower than the global ones. For certain indicators and countries the level might be at or close to the level in the developed countries (which have MDG aid goals) and there is no, or only limited, feasibility for a further reduction. Taking into account the national situation, each country has therefore to decide on their target for each of the goals.

The proposed indicators are not necessarily supplementary. One indicator might measure advancements in the goal sufficiently making others redundant (though they might still be useful for international comparison). For certain goals, the internationally agreed indicators might not be relevant or measurable. Alternative goals and indicators can therefore be set by individual countries or by regions with similar characteristics.

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[4] United Nations (2006), *Report of the Secretary-General on the work of the Organization. General Assembly. Official Records Sixty-first Session. Supplement No. 1.* A/61/1.

The advancements and the impact of interventions are meant to be measured. They should be imbedded in a national plan and the indicators should be able to measure the effect of government policy measures and other actions in the country.

If a relation can be made between policy measures and improvements, interventions can be evaluated and, if necessary, be modified. It is therefore important to specify why indicators are expected to change and whether the proposed indicators are measuring the fulfilment of the development goal for the (Caribbean) countries.

II.   THE UNITED NATIONS COMMITMENTS TOWARDS MDGS

As the initiating forum for establishing the MDGs, the United Nations is obviously one of the driving forces behind their fulfilment. The whole United Nations system has been committed to support the MDGs initiative and to aid countries in reaching their targets. Various agencies are involved in the demographic and health-related MDGs. They further produce and publish estimates of MDG-indicators for individual countries, and provide information on methodology and give other background information. Additionally, the United Nations reports on the advancements towards the goals at the global and regional level.

A. The United Nations system and demographic and health-related MDGs

As mentioned above, nearly all United Nations agencies are engaged in the Millennium project. The main United Nations agencies involved in the demographic and health-related MDGs are listed with a short description of their main responsibilities, as follows:

United Nations Statistics Division (UNSD) of the United Nations Department of Economic and Social Affairs (DESA) maintains the official United Nations website for the MDG indicators (http://mdgs.un.org). Official data, definitions, methodologies, sources, and other metadata for more than 60 indicators to measure progress towards the MDGs are presented. The data and analyses are the product of the work of the Inter-agency and Expert Group on MDG Indicators, coordinated by UNSD. The Population Division of DESA is responsible for producing estimates on child mortality and reproductive health.

United Nations Development Programme (UNDP). In cooperation with DESA and the United Nations Children's Fund (UNICEF), UNDP maintains an MDG monitor for tracking the progress of countries towards the MDGs. Through advocacy, sharing the best strategies, and by monitoring and reporting towards MDGs, the Programme focuses on coordinating global and local efforts. UNDP is also involved in assisting countries in national and regional MDG-progress reports.

United Nations Population Fund (UNFPA) works in the fields of reproductive health and rights, women's empowerment and population issues. UNFPA therefore focuses on Goals 3 (gender equality), 5 (maternal health) and 6 (HIV/AIDS, malaria and other diseases).
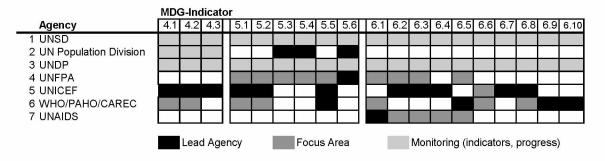
UNICEF is a leading advocate in support of Goal 4 (reducing child mortality) and malaria control (Goal 6) and other indicators related to the health of mother and child. The Multiple Indicator Cluster Survey (discussed below) was developed by UNICEF.

World Health Organization (WHO) and the Pan American Health Organization (PAHO) concentrate their attention on Goal 6 (HIV/AIDS, malaria and other diseases) and specifically on the HIV/AIDS-related Targets (6a and 6b). WHO supports national and regional efforts to achieve the MDGs through normative and technical work through building systems to track progress and measure achievement and to coordinate technical collaboration. It further reports on seventeen of the health-related indicators. The Caribbean Epidemiology Centre (CAREC) is a public health information service and consulting organization administered on behalf of 21 member countries from the Caribbean by PAHO. It provides laboratory reference and epidemiology services to the member States. It reports on AIDS, dengue and other communicable diseases.

The joint United Nations Programme on HIV/AIDS (UNAIDS) focuses specifically on the HIV/AIDS related Targets (6a and 6b).

Table 1 summarizes the activities of the various United Nations agencies. In addition to the United Nations agencies listed above, various other organizations and non-governmental organizations (NGOs), such as the World Bank, United States Agency for International Development (USAID), the United Nations Development Group, the Ford Foundation, the Gates Foundation, Measures, the Health Metrics Network, and many others, have activities related to the MDGs. In the Caribbean subregion, the Caribbean Community (CARICOM) is involved in coordination and training. More information is given in the background document presented at the first expert group meeting organized by ECLAC[2].

Table 1: United Nations Agencies and demographic and health-related MDGs

Agency	MDG-Indicator																		
	4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
1 UNSD	░	░	░																
2 UN Population Division	░	░	░			■			■										
3 UNDP	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░
4 UNFPA				▨	▨	▨	▨	▨	■	▨	▨								
5 UNICEF	■	■	■	■	■			■			■	■		▨	■	■			
6 WHO/PAHO/CAREC	▨	▨		▨	▨			■		▨				■		■	■	■	
7 UNAIDS										■	▨	▨	▨	▨					

■ Lead Agency   ▨ Focus Area   ░ Monitoring (indicators, progress)

B. The United Nations and monitoring MDGs

As described in the previous section, many agencies within the United Nations system produce and/or publish their own estimates of MDGs indicators for individual countries and regions in order to support the monitoring of progress[5]. These estimates often vary from agency to agency and from publication to publication. Differences in sources, methodologies, definitions, and time of the publication result in differences in these estimates. Providing the sources that were used and giving information on the definition and methodology applied is very important for the interpretation of the differences.

The aim of this paper is not to make a comparison between the various international and national estimates, but it should be noted that national estimates should be compared to United Nations estimates as ideally they are the same or very similar. In case of discrepancies, governments and media might question national results. National results should be made available to the United Nations agencies so they can adjust or update their estimates.

In order to harmonize the various MDG-indicator estimates within the United Nations system, many coordination activities are ongoing among agencies that produce these estimates. For example, the Inter-Agency Coordination Group on Child Mortality tries to bundle efforts made at making the best estimates for infant and child mortality. Specialists[6] from within and outside the United Nations system are involved in this process in which data collections are combined and where an attempt is made to come to a common methodology of producing time-series estimates using all available information on infant and child mortality for each country. Using weighted regression methods, an attempt is made to produce consistent estimates across countries. A database application, DevInfo, was developed to be used as a platform to share data and to apply harmonized methods such that coherent estimates can be made.

The Statistics Division of ECLAC in Santiago has been providing MDG-related technical assistance to Latin American countries. Differences in methodology and data sources had lead to discrepancies between national estimates and those made by the United Nations agencies. These differences lead questioning of the results thus leading the Statistics Division to now focus on these issues.

As described in the introduction, the ECLAC Subregional Headquarters for the Caribbean in Port of Spain concentrates its activities related to MDGs under the project *'Strengthening the capacity of National Statistical Offices in the Caribbean Small Island Developing States to fulfil the Millennium Development Goals and other Internationally Agreed Development Goals'*. This project involves expert meetings, technical assistance, and an effort to establish a database containing metadata on MDG indicators reported by the countries in the Caribbean subregion.

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[5] Note that most agencies only publish data of United Nations member States or have limited information on dependent States and those with a population below 100,000.

[6] For example, UNICEF, WHO, the Population Division of the Department of Economic and Social Affairs, World Bank, representatives of Harvard and Berkley University and other specialists

C. The United Nations and guidance in MDGs

Much information is available from United Nations websites. Guidelines, methodology, reports, policy plans are all accessible from these internet-based sources. This valuable information, which includes general handbooks and progress reports submitted by the various countries, can be of great use to those involved in measuring, monitoring and reporting on MDGs. The main sources for this information are listed further and in Annex III. National agencies involved in producing and reporting indicator estimates or in monitoring their progress are urged to consult the large amount of information available from these sources and use them as a guide.

A regional information site in support of the Latin American and Caribbean region is maintained by ECLAC[7]. Regional reports have been published by ECLAC[8], however, the limited coverage of the Caribbean subregion is mainly due to lack of available information. UNDP has published a regional report for CARICOM[9] and a report was prepared for Barbados and the Organisation of Eastern Caribbean States (OECS)[10]. The reporting on MDGs at the national level is discussed in the next section.

III. METHODOLOGICAL ASPECTS

As described in the previous chapter, background information and detailed references on methodology can be found on the websites of various United Nations organizations. Annex II compiles the information indicator by indicator for Goals 4 and 5. For Goal 6, only a selection of the indicators is listed.

The current chapter elaborates further on sources of data, data quality, uncertainty and other methodological aspects.

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[7] ECLAC regional portal: http://www.eclac.org/mdg

[8] United Nations (2005) *The Millennium Development Goals: a Latin American and Caribbean perspective*, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).
United Nations (2006) *Millennium Development Goals 2006: a look at Gender Equality and Empowerment of Women in Latin America and the Caribbean*, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).
United Nations (2007) *Millennium Development Goals. Progress towards the right to health in Latin America and the Caribbean*, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

[9] United Nations Development Programme (2004), *Regional Report on the Achievement of the Millennium Development Goals in the Caribbean Community*, New York, USA.

[10] Downes, A.S.D & Downes, D.A. (2003), *The Millennium Development Goals in the Eastern Caribbean: A Progress Report*. Barbados, prepared for the United Nations Development Programme – Barbados and the OECS.

A. Availability of data and sources

There are many potential sources and mechanisms for data collection. Estimates for an indicator can be based on more than one data source. Before embarking on a new data collection, existing sources should be utilized first. It is therefore important to identify all available sources that might contain any useful information and then assess the quality of the data available from them. In the process it is important that all actors involved participate in identifying possible sources, as often there is not a general awareness of all data collection activities across the ministries and agencies in the country.

The three main types of sources of data for the demographic and health-related MDGs are:
- Registers
- Census
- Surveys (household)

1. Registers

Ideally, indicators are produced from registers where events or statuses are recorded continuously. The importance of utilizing civil registers and vital statistics has been stressed in the 2006 report of the Caribbean Commission on Health and Development. This was referred to and reiterated in the UNFPA report on the rapid assessment on the availability of data on sexual and reproductive health in the Caribbean[11].

Most Caribbean countries have a registrar general or civil registrations and vital registers for births and deaths. These can produce estimates of infant and child mortality as well as adolescent birth rates. Obtaining data from the registries can be a challenge and the coverage might be a problem. Births and deaths occurring in the country might be missed for certain subgroups or regions, but they might also take place outside the scope of the registration system. For example, women who are resident in a certain country might seek to deliver their baby at medical facilities outside the country in the case of high risk births. These births and possible infant and maternal deaths are subsequently not registered in the country of residence. Specialist medical treatment might not be available in the relatively small Caribbean States because of scale. Persons might therefore seek medical treatment outside the country and potential deaths are not registered. If the coverage is estimated to be below 90% and selective, then register data is not reliable.

The only report in which an indication is given of the quality of the register data is the national MDG report of Belize. The quality is deemed weak. Additionally, in the 2007 report of Guyana the difference between data on infant mortality from the Registrar General and the Multiple Indicator Cluster Survey (MICS) are mentioned, inexplicitly suggesting that there might be data problems.

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[11] UNFPA (2007), Rapid Assessment on Availability of Data on Sexual and Reproductive Health in the Caribbean

For the estimation of infant mortality, only vital statistics are needed. For the indicators for child mortality and adolescent birth rates, the population at risk is needed. These estimates could be based on registers. Population registers, however, are not so common in the English Caribbean. Aruba, the Netherlands Antilles and Suriname have centralized population registers.

Cause of death registration is the ideal source for data on maternal deaths and deaths due to malaria, tuberculosis, and AIDS. Assessing the cause of death and distinguishing the underlying and the immediate causes is a difficult exercise. Medical attention might not have been received or medical records or an autopsy report might not be available. The coverage and correct and consistent determination of the cause of death is therefore often not perfect. For causes with frequencies as low as maternal deaths this means that the statistical uncertainty is further increased by possible bias and those figures become unreliable.

From national MDG reports it seems that information on maternal mortality in many countries come from register data. Public hospitals, private obstetric services, midwife services and doctors should ideally report on births that were attended. Reproductive health providers can register the number of assists and antenatal care clinics can register first time visitors. Health registers can give information on the prevalence of HIV/AIDS, malaria, and other diseases. Even more than with cause of death registration, lack of coverage is a serious limitation. The number of vaccinations administered by national health institutions and by private health clinics or private practitioners can give estimates of immunization against measles and likewise, treatment with anti-malarial drugs. Registration is, however, often incomplete and persons might have sought treatment abroad. The history of immigrants is neither known and visitors might be included in the registrations.

Even if good quality data is collected problems might arise. If registers are decentralized, double counts and aggregating the data might be an issue. The lack of automation and standardization leads to additional problems. Due to changing soft and hardware, the ability of extracting data from databases is not always maintained. Historical records will suffer most from this.

From the MDG reports of Antigua and Barbuda, Guyana, Suriname, and Trinidad and Tobago, it seems that estimates for maternal mortality are based on register data. No explicit references to the source are given, though, and neither are expressions of the quality of the data. Problems with trends in time-series due to the low incidence of maternal mortality are mentioned.

Hardly any information on registers in the Caribbean subregion is available. Publicly available websites and publications, such as statistical yearbooks and MDG reports, do not give information on data availability and quality from such registers.

2.   Census

Despite the advantage of covering the whole of the population, censuses have two disadvantages: their frequency and the limits to the length and complexity of the questionnaire. By their nature most of the demographic and health-related MDGs cannot be estimated from data that are normally collected in a census. Censuses are therefore not a main source for MDG indicators. Questions that measure (adolescent) fertility, and to a lesser extent, prevalence of diseases and mortality are generally included. Births in the past 12 months (and age of the mother) and deaths among children born in the past 12 months are typically collected. With additional questions, child and maternal mortality could be measured as well as death rates associated with malaria and tuberculosis.

Note that the census can be a source for MDGs other than those that are demographic and health related. In the 2010 round of censuses, more information could be gathered by adding specific questions or modules, to all or some respondents, that measure MDGs. As it is used for weighting, checking, and as a sample frame, the census does, however, serve to improve surveys.

Even though a census tries to cover the whole population, this does not mean that there is no uncertainty around the indicators. Measurement, processing, non-response and other issues affect the data. Analysis of census data reveals many inconsistencies and errors. In general, only a limited number of questions measuring demographic and health MDGs have been included in censuses.

3.   Surveys

There are many surveys from which data for the demographic and health-related MDGs indicators can be deduced. Below, the more common surveys that were designed to collect data on demographic and health-related issues are described.

(a)   Demographic and Health Survey (DHS)

The (Measures) Demographic and Health Survey is implemented by Macro International on behalf of USAID. Amongst others, indicators are available for topics such as child and maternal health, HIV/AIDS, and malaria. It was specifically designed to collect in-depth and detailed data on demographic and health characteristics of the population and, more specifically, of mothers and their children. Birth histories and survival of children and the general context are collected together with behaviour towards reproduction and contraception. Immunization, HIV/AIDS and other sexually transmitted infections can also be covered by the survey. A module on maternal mortality is available but not included in all surveys.

In the Caribbean subregion the following surveys were conducted: Dominican Republic (1986, 1991, 1996, 1999, 2002 and 2007); Guyana (2009)[12]; Haiti (1994/5, 2000, 2005/6); and Trinidad and Tobago (1987). Additionally, in Guyana in 2005 an AIDS Indicator Survey (AIS)

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[12] Other Surveys within the Measures framework that were held were the HIV/AIDS Service Provision Assessment Survey in 2004 and the AIDS Indicator Survey in 2005.

and a year earlier an HIV/Service Provision Assessment (SPA) Survey (2004) were conducted with the aid of Measures.

Recently, the Key Indicator Survey (KIS) was designed by MEASURE DHS. This survey covers the most important indicators on family planning, maternal health, child health, HIV/AIDS and infectious diseases. So far, no Caribbean KIS has been published.

(b)   *Multiple Indicator Cluster Survey (MICS)*

One of the largest single sources of data for MDG monitoring is the MICS. The MICS programme was developed by UNICEF to assist countries in filling data gaps for monitoring the situation of children and women through statistically sound, internationally comparable estimates of socioeconomic and health indicators. Almost half of the MDG indicators are collected through MICS. In the latest round of surveys, MICS3, several new indicators to track progress toward the MDGs and other major international commitments were added. Currently, UNICEF is in the process of starting the 4th round of surveys (MICS4), scheduled to take place in 2009/2010. Countries will need to be identified by mid-2009; countries are therefore urged to consider participating in this round if critical data gaps are present.

So far, 12 MICS have been conducted in the Caribbean subregion: Belize (2006), Cuba (2000, 2006), Dominican Republic (2000), Guyana (2000, 2006/7), Jamaica (2000[13], 2005), Suriname (2000, 2006), and Trinidad and Tobago (2000, 2006).

(c)   *Contraceptive Prevalence Surveys (CPS) and Reproductive Health Surveys (RHS)*

Beside information on contraceptive usages, in general these surveys cover topics such as reproductive history, maternal and child health and knowledge and attitudes regarding HIV/AIDS. The CPS were especially popular in the 1980s[14]. After 1990 surveys were held in Anguilla (2003), Belize (1991), Jamaica (1993, 1997, and 2002), Guyana (1991/1992) and Suriname (1992). A RHS was held in Jamaica (2008), and in Belize a Family Health Survey was conducted (1999).

(d)   *BBS: Behavioural Surveillance Surveys*

WHO/PAHO/CAREC give information on HIV and knowledge and behaviour towards HIV/AIDS and other sexually transmitted infections. In 2005, the survey was conducted in Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, Saint Lucia, and St Vincent and the Grenadines. Earlier, a survey was held in Jamaica (1999-2000).

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[13] An official report was never issued.

[14] Antigua and Barbuda (1981), Barbados (1981) Belize (1985), Dominica (1981), Dominican Republic (1983), Grenada (1985), Haiti (1983, 1987, 1989, Jamaica (1981, 1989), St. Kitts (1984), St. Lucia (1981, 1988), St. Vincent (1981, 1988) and Trinidad and Tobago (1987)

(e)   *Various Knowledge Attitudes and Practices (KAP)*

These have been conducted in many countries in the region and are in general more directed towards sub-populations. The UNFPA report on the Rapid Assessment on Availability of Data on Sexual and Reproductive Health in the Caribbean lists some of these[15].

(f)   *Other surveys*

There are other household surveys that are not specifically designed to collect demographic and health data but that do gather such information. For example, some Surveys of Living Conditions (SLC) collect data on children's health. Likewise, household budget surveys, poverty surveys, and labour force surveys can include questions on health and mortality.

Because birth histories are obtained, these surveys can produce retrospective data. This makes it possible to produce time-series without having to survey every single year. Another advantage of surveys is that detailed information can be gathered. Compared to registers, it also captures information on residents of events that took place outside the country (or before immigrating). An obvious disadvantage is sampling errors and statistical uncertainty. For low frequency events such as maternal mortality, this becomes a major drawback. Retrospective questions have additional bias because of recall errors. Many surveys also capture information on sensitive topics, which might lead to reluctance to ask and answer questions. Evasion of additional questions, for example, concerning births during a fixed period prior to the survey, might introduce further bias. The relatively long length might negatively affect the quality of the responses.

B. Comparing and combining sources

Register data would be ideal if the quality and coverage is high and if non-residents are distinguishable from residents and if events that took place outside the country to residents are included. If the coverage is good (the United Nations rule of thumb is 90% or above), census and register data can give reliable information on key demographic and health indicators. Survey data has more uncertainty but has the advantage over census and register data in that more detailed and in-depth questions can be asked. The data available for estimating the various MDG indicators vary from source to source. Table 2 gives an overview of the information that can typically be obtained from the main type.

The type of source determines the methods that can be applied to estimate the indicators. Depending on the source of the data, some of the indicators are more apt than others. For example, vital statistics (with a good coverage) give in general good estimates of the infant mortality rate, while surveys in general give more robust estimates for under-five mortality. Availability of sources of data therefore will determine the indicator best used to measure the fulfilment of the specific MDG goal.

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[15] UNFPA (2007), Rapid Assessment on Availability of Data on Sexual and Reproductive Health in the Caribbean.

Table 2: Data Sources and MDG-indicators in the Caribbean subregion

Source	MDG-Indicator 4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
1 Vital Register[1]																			
2 Other Registers/records[2]																			
3 Census			r	r											r	r		r	
4 DHS										m	m	m		m					
5 MICS				m		m													
6 CPS																			
7 FHS/RHS																			
8 BBS																			
9 KIS																			
10 PAHO/WHO/CAREC																			

◼ Yes   m Module available
▨ In general   r rarely but possible
▧ Limited/indirectly

[1] Vital Registrations: in general registers that issue certificates (e.g. birth, death, and marriage certificate)
[2] Other Registrations: hospital records, registrations at family planning offices etc.

A mixture of vital statistics, censuses, and household surveys (DHS, MIC, RHS) are available for a number of countries (e.g. Belize, Dominican Republic, Guyana, Jamaica, Trinidad and Tobago). The availability of multiple sources leads to multiple estimates. For example, estimates for infant and child mortality can be based on a vital registration system, on census data, or on a demographic and health survey. From the same basic data collection, there are also different ways of estimating the indicators. For example, direct and indirect methods are available to estimate infant and child mortality from surveys and censuses. These different methodologies lead in general to different results. In addition, adjustments are often made to the source data. Retrospective estimates from different sources can produce time-series and estimates for the same calendar year or period.

Several estimates can be combined, however, selecting estimates and combining them into one single estimate for each time period is a challenge. In general there will not be one best estimate but a set of more or less equally plausible interpretations of the data. All this influences the comparability within the time-series of a country and among countries. It can be useful to express the uncertainty of the estimate and show the underlying multiple estimates that lead to the one 'best guess'.

The importance of metadata should again be stressed. A good documentation is imminent for interpretation of the data. Definitions, an indication of the completeness and the quality of estimates, source data used, coverage and sample size, and other issues should be documented as much as possible. In order to change data into useful information that can be used for analysis, this metadata is vital. It might also explain differences between the reporting by various agencies.

One of the activities within the project *'Strengthening the capacity of National Statistical Offices in the Caribbean Small Island Developing States to fulfil the Millennium Development Goals and other Internationally Agreed Development Goals'* of the ECLAC Subregional Headquarters for the Caribbean is the establishment of a metadata-base.

C. Measuring Change

There are many issues with measuring progress in MDGs:

- Low frequencies and high variance;
- Measurement bias;
- Under-count and non-response
- Multiple estimates;
- Time-series.

Indicators are subject to statistical variance and additional uncertainty due to bias. These measurement issues have been discussed above for each type of source. The small population size and the low frequency of many events in the Caribbean countries pose an extra challenge as it leads to indicators being subject to larger uncertainty than in larger countries or in less developed regions.

The quality of the data collection machinery and the willingness to participate by the population is critical. Training of interviewers, data processors, analysts, and users, on the one hand, and public awareness of the importance of being surveyed, on the other, is of key importance in the reduction of under-count and non-response in registers, censuses and surveys.

Sources and estimation methods might differ from year to year. Additionally, multiple estimates exist and they can be combined into one estimate for a time period. All this makes trend analysis complicated and highly uncertain. Recalling that the idea behind the MDGs is a reduction over time of undesirable events and that MDG-indicators are meant to monitor this, care has to be taken in concluding about change. There might be no real underlying change as the observed trend might be spurious. This all has to be taken into account in reporting on MDGs and before concluding whether or not or to what extent progress has been made.

Many Goals and Targets are set in relative terms, for example 'reduce by two-thirds, between 1990 and 2015, the under-five mortality rate'. The advantage of measuring change is that even if countries cannot be compared, as long as the methodology and the source of data remain the same, the progress towards the Goals can still be measured within a country.

D. Relevance of indicators and alternatives

In a country there can be measurement issues with an indicator.

There are three reasons for modifying the globally agreed indicators or for omitting agreed indicators or adding other indicators:

- The globally agreed indicator cannot be produced due to lack of data or problems with the reliability;

- The indicator does not properly measure development of the Goal in the country;

- The specific development situation in the country merits additional indicators.

If data is not available, the quality is insufficient, or frequencies are too low to produce reliable indicators, alternatives might be sought to measure progress towards the specific Target or Goal. The reason for having multiple globally agreed indicators for measuring the advancements in each Goal is partly to compensate for the difference in or lack of data sources.

The decline in leading preventable causes of death might be an alternative if malaria and tuberculosis are not an issue in the country. Suriname reports the budget of the Ministry of Public Health and the leading causes of death as a proxy for the Target on halting or reversing of the incidence of malaria and other major diseases.

If no data on contraceptive prevalence, unmet need for family planning, or condom use are available, regulations and availability of contraceptives and their accessibility might be measured as an alternative for Goal 5. This and whether or not HIV/AIDS medicines are available for free or if sex education is part of the curriculum might be useful alternative information in assessing Goal 6.

There are two possible causes for an indicator not properly measuring the developments towards a Goal. The indicator has reached the goal or improvements cannot be measured. For example, proportion of births attended by skilled health personnel (5.2) or antenatal care coverage (Indicator 5.5) is already 100% or near to it in most countries of the Caribbean subregion. Besides Haiti with attendance in just a quarter of the cases, only in Suriname and to a lesser extent in Belize and Guyana, is there space for some improvement. It might therefore be more appropriate to measure the number of high risk births or the quality of care.

Another possibility is that it is not an issue. For example, the incidence and death rates associated with malaria (6.6) and related indicators (6.7 and 6.8) are not relevant if malaria is eradicated or not present. In the Caribbean subregion, malaria is only a problem in the interiors of Suriname and Guyana and of low risk in Belize, Haiti, and Jamaica. Incidence, prevalence and deaths rates associated with tuberculosis are for many countries (near) zero.

The specific development situation in the country might therefore merit additional indicators.

In the region, dengue has higher incidence rates and might be a better indicator for measuring advancement in the fight against major diseases. Incidence of non-communicable diseases such as diabetes or obesity might also better reflect the state of the fight against major diseases that affect the society. Of the countries[16] that have made their censuses available to ECLAC and that had a question in the 2000 Census round on morbidity, arthritis and hypertension were most commonly mentioned by the respondents. Between 4-4.5% suffered from these diseases. They were closely followed by asthma and diabetes. Cancer and HIV/AIDS were far less common.

In order to measure gender issues, it has been proposed to make many indicators sex specific. If clear sex-differentials have been found or are to be expected, it is important to measure this. The prevalence of HIV/AIDS is, for example, shifting to higher female rates. Infant and child mortality, on the other hand, are in general higher for boys and maternal health obviously refers to females. Although both partners should be responsible for contraceptive usage and family planning, in practise it is more so for females. Since females are still in the (far) majority dedicated to the care of children and elderly, the indirect impact of maternal health and the prevalence of HIV/AIDS and other diseases is greater than in the case of males. The drawback is that frequencies become even smaller, reducing the reliability of the results.

Other subgroups might be more strongly affected than the general population. In such cases, the average will obscure developments and producing data for subgroups that are especially affected might be considered. Examples might be ethnic minorities or indigenous groups; groups with low income and less formal education; higher risk groups such as prostitutes, addicts or homosexuals in the case of HIV/AIDS and tuberculosis; or certain regions in the country were malaria is endemic.

CARICOM, which covers most of the Caribbean countries, has decided to include alternative indicators; besides immunisation against measles, additionally against BCG, three doses DPT and oral polio are proposed to be measured. Furthermore, indicators on violent deaths among children were added as well as on sexual behaviour of adolescents and prevalence of dengue and of selected chronic non-communicable diseases. The OECS began a process of local adaptation of the MDGs. Resulting from this, some adjusted indicators were suggested[17].

The burden for producing the indicators that measure progress in the MDGs is already high. Adding more indicators should therefore be based on considerations such as availability of data and relevance of the indicator. Parsimony is key to measuring advancements in the MDGs; it is best to minimise the number of indicators needed as much as possible.

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[16] Antigua and Barbuda, Saint Lucia, St Vincent and the Grenadines, and Trinidad and Tobago.

[17] OECS (2006), A Framework for Local Adaptation of the Millennium Development Goals in the OECS.

IV. NATIONAL MDG SYSTEMS

From the selective and brief overview in the previous chapter on MDGs and the United Nations, it is clear that the United Nations system and other international actors have problems coordinating their activities and that there is much overlap and duplication of activities. At the national level similar processes might be taking place. It is important to try to prevent diffusion of scarce resources and to use them as efficient as possible.

In order to get insight into data collection and reporting in the countries of the Caribbean subregion, the ECLAC Subregional Headquarters for the Caribbean has conducted a survey to which 16 countries responded[18]. The operational modalities and the functions of the statistical agencies and the legal framework together with a general overview of the status of MDG monitoring and reporting have been discussed in ECLAC (2009). Below a more detailed summary of the results from the questionnaire that was sent to the Caribbean countries is given for Goals 4 (child mortality), 5 (maternal health) and 6 (HIV/AIDS and other diseases). In the second subsection, the MDG-reporting by the countries is described.

A. National MDG Systems: collecting and reporting of data

Of the 16 countries that returned the ECLAC questionnaire, only in Grenada, Guyana and Saint Lucia is the national statistical office involved in both collecting and reporting of the indicators for Goals 4, 5 and 6; however, in all of these three cases it was only for part of the indicators. Table 3 gives an overview of which agency is responsible for collecting the demographic and health-related MDGs. An overview of responsibilities for reporting on the indicators is given in Table 4.

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[18] The main results were presented at the first meeting held in February 2008 at ECLAC in Port of Spain. They have been documented in ECLAC (2009), The status of MDG monitoring and reporting in selected Caribbean countries. ECLAC WP/2009/1. Afterwards, the responses of four other countries (Aruba, Bahamas, British Virgin Islands and Jamaica) were received. Barbados, Belize, Montserrat, Suriname, and Trinidad and Tobago had not responded by April 2009.

Table 3: Responsible in the national systems for collecting MDG-indicators

	Country	4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
1	Anguilla	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
2	Antigua and Barbuda	H	H	H	H	H	Hr				Ha					H			H	H
3	Aruba	■	■	Hr	■	■		■	■		H				H	H	H	H	H	H
4	Bahamas	Hr	Hr	Hr	Hr	H	Hr	Hr	Hr	H	Ha	Ha	SH	Hr	Ha	H	H	H	H	H
5	Bermuda	O	O	H	H	H		H			H				H	H		H	H	H
6	*Beliz*[1]					H										H			H	H
7	British Virgin Islands	Hr	Hr		Hr	Hr	O	O			Ha		Ha		Ha					
8	Dominica	Hr	Hr	Hr	Hr	Hr	SH	Hr	Hr	H	Ha	Ha	SH	Hr	Ha	Hr	Hr	Hr	Hr	Hr
9	Grenada	■	■	H	■	H	H		H		H			O	Hr					
10	Guyana	SH	SH	SH	SH	SH	■		■	■	H	■			H	H	■		H	H
11	Jamaica	H	H	H	H	H	H	H	H	H	H	H	H		H	H			H	H
12	Netherlands Antilles	H	H	H	H			O	O		H				Hr				H	H
13	Saint Kitts and Nevis	H	H	H	H	H	H	H	H		H	H	H		H				H	H
14	Saint Lucia	SH	SH	SH	SH	SH	SH	SH	SH	SH	H	H	H	H	H	H	H	H	H	H
15	St. Vincent & Grenadines	O	O	O	H	H	H	H	H	H	H	H	H	H	H	H			H	H
16	Suriname	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho
17	Turks and Caicos Islands	Hr	Hr	Hr	Hr	Hr		Hr	Hr		Ha	Ha	Ha	O	Ha	SH			H	H
18	US Virgin Islands	H	H		H	H		H	H	H	H	H	H	O	H	H	H	H	H	H

■	CSO	Hr	Health related
SH	Statistics and Ministry of Health	Ha	HIV/AIDS- Health related
H	Ministry of Health	Ho	Health & Others
		O	Other

[1] *Barbados, Belize, Cayman Islands, Montserrat, and Trinidad and Tobago did not respond to the survey.*

The ministry of health and other health-related services are most commonly in charge of collecting indicators, while the NSOs are often responsible for the reporting on the indicators. However, as with collecting and producing the indicators, in nearly all countries the responsibility for the publication of the indicators does not lie with only one organization. In Anguilla, Bermuda, and the Turks and Caicos Islands, the NSO was solely responsible, while in St Kitts and Nevis the Ministry of Health was the only party involved. Besides the NSO and the ministry of health or related departments, only few other departments bear responsibility. The ministry of education and planning units or institutes are most cited outside the two core players.

In most countries, there are MDG indicators for which nobody seems to be responsible. These seem to fall outside the scope of the national MDG system. Part of these indicators were only adopted at the start of 2008 (refer to next section), which might explain why they are not yet covered in some countries.

Table 4: Responsible in the national systems for reporting MDG-indicators

Country[1]	4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
1 Anguilla																			
2 Antigua and Barbuda	O	O	O	O	O					O					O			O	O
3 Aruba										H					H	H	H	H	H
4 Bahamas								Hr	H	SH	SH	SH		SH		Hr	Hr	SH	Hr
5 Bermuda																			
6 *Beliz*[1]																			
7 British Virgin Islands	O	O		O	O	O	O			Ha		Ha		Ha					
8 Dominica								Hr	H	SH	SH	SH		SH		Hr	Hr		Hr
9 Grenada			H		H	H		H		H			O	H					
10 Guyana	SH	SH	SH		SH					H				H	H			H	SH
11 Jamaica	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho	Ho		Ho	Ho			H	H
12 Netherlands Antilles	H			H										H			H		
13 Saint Kitts and Nevis	H	H	H	H	H	H	H	H		H	H	H		H				H	H
14 Saint Lucia	SH	SH	SH	SH	SH	SH	SH	SH	SH	H	H	H	H	H	H	H	H	H	H
15 St. Vincent & Grenadines	O	O	O	H	H	H	H	H	H	Ha	H			H	H	H		H	
16 Suriname	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo	SHo
17 Turks and Caicos Islands																			
18 US Virgin Islands	H	H		H	H		H	H	H	H	H	H	O	H	H	H	H	H	H

	CSO		Hr	Health related
SH	Statistics and Ministry of Health		Ha	HIV/AIDS- Health related
H	Ministry of Health		Ho	Health & Others
			O	Other

[1] *Barbados, Belize, Cayman Islands, Montserrat, and Trinidad and Tobago did not respond to the survey.*

B. National reports and demographic and health-related MDGs

Being responsible for data collection and reporting, does not mean that data has actually been collected or reported. Full (annual) time-series from 1990 to the present either might have been available or have been reported.

Besides the joint report by Barbados and the OECS, national MDG reports have been prepared and published. Antigua and Barbuda, Dominica, Grenada, Guyana, Jamaica and Saint Lucia stated that a report had been published. Other reports, that were accessible by internet, were those of Belize, Cuba, the Dominican Republic, Haiti, St Kitts and Nevis, Suriname, and Turks and Caicos Islands.

In these reports there are frequently data gaps, and estimates are sometimes missing for the demographic and health-related indicators. Information on the methodology applied, quality of the data and other metadata are largely missing from these reports and are not available on national websites. For countries that did not reply to the questionnaire, it seems from their MDG-reporting that, at least for the collection and production of data, the state of affairs is similar to those that did participate in the survey. The situation for the indicators of all eight goals is even more scattered across national agencies.

Table 5 shows the extent of reporting of the MDG-indicators in the national MDG reports that were available to ECLAC.

Table 5: coverage of MDG-Indicators in MDG-reports

MDG Indicator

	Country Report	Year[1]	4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
1	Anguilla	2005																			
2	Antigua and Barbuda	2005																			
3	*Aruba*	No Report																			
4	*Bahamas*	No Report																			
5	Barbados	2005, 2007																			
6	*Bermuda*	No Report																			
7	Belize	2004																			
8	British Virgin Islands	2005																			
9	*Cayman Islands*	No Report																			
11	Dominica	2005, 2006																			
13	Grenada	2005																			
14	Guyana	2003, 2007																			
16	Jamaica	2004																			
17	Montserrat	2005																			
18	*Netherlands Antilles*	No Report																			
20	Saint Kitts and Nevis	2005, 2006																			
21	Saint Lucia	2005																			
22	St. Vincent & Grenadines	2005																			
23	Suriname	2005																			
24	Trinidad and Tobago	2005																			
25	Turks and Caicos Islands	2005																			
26	*US Virgin Islands*	No Report																			

■ Full time series (5+ data points) ░ 1-2 points
▨ 3-5 data points   □ No data

1 Anguilla, Barbados, Britisch Virgin Islands, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, and Saint vincent and the Grenadines: OECS 2005, rest national reports

From the publicly available MDG reports and the survey, it is clear that not all indicators have equal coverage (refer to Tables 2, 3, and 4). Reporting was most frequent for Goal 4 'Reducing Child Mortality'. Indicators with least reporting are:

Under Goal 5 'Improve maternal health':

- Contraceptive prevalence (5.3).

Under Goal 6 'Combat HIV/AIDS, Malaria and other diseases':

- Condom use at last high-risk sex (6.2)

- Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (6.3)

- Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years (6.4)

- Proportion of children under 5 sleeping under insecticide-treated bed nets (6.7)

- Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs (6.8)

The following indicators were adopted in 2007 and effective from the beginning of 2008:

- 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.

- 6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs.

Obviously, these indicators have hardly been covered as most reports were prepared before 2008. An extra effort will be needed to incorporate these indicators in the national data collection and reporting systems.

As previously stated in this document, it clear that for many countries in the region surveys are available, however, in the MDG reporting none or few references are made to surveys. It is therefore not clear to what extent these are utilized. The use of multiple data sources to combine into a single estimate is not mentioned either. Guyana lists in its 2007 MDG report that there is a discrepancy between data from the Registrar General and WHO estimates based on MICS 2001, however, further details are not given. Other reports do not make references to specific sources. Time-series computed from retrospective data are not published, or at least not documented. Agencies within the United Nations system however have used (retrospective) survey data in their estimation process.

In national reports, not all data presented is provided by agencies from within the countries. In various MDG reports, such as those of Belize, Jamaica and Suriname, estimates for indicators were published that listed United Nations agencies as the source.

Dedicated national internet portals have so far not been used in the Caribbean for the systematic reporting on MDG indicators. DevInfo was based on the UNICEF ChildInfo database system and has been adapted to serve as a tool for storing, distributing, and estimating MDG indicators. The software has been released to cover all MDG indicators in the standard set. In the Caribbean so far DevInfo has been adopted by Jamaica and Saint Lucia, while Barbados, Belize, Dominica, the Dominican Republic, Guyana, St Vincent and the Grenadines, Suriname, and Trinidad and Tobago are in the process of doing so or have received training in the software. Recently, the OECS has started to prepare an adapted DevInfo version for tracking the progress in the Eastern Caribbean. Though the tool can be used for on-line reporting on MDGs, public access and coverage of the MDG indicators is still limited.

Data might have been published spread across other publications such as statistical yearbooks or annual reports on health statistics. These sources were not considered in this report. The importance of the Goals set should warrant a more systematic reporting at the national level.

C. Priority setting in National MDG reporting

Efforts should be concentrated first on the most relevant indictors for a country and on those for which sources already are available. Mention should once again be made of the fact that the MDG indicators were developed to measure the goals; it is therefore not necessary to try to produce all indicators at all costs. If an indicator is available that can adequately measure the achievements towards a Target or Goal, energy is best spent on those that have not yet been measured properly. For example, if reliable estimates of under-five mortality are available, information on the infant mortality rate does not add to the evaluation. If not readily available or if no good sources are present, producing this alternative indicator should not be a priority.

Reporting has two goals: a score card of the current situation and, as most Goals are related to change over time, measuring the trends between 1990 and 2015. It is therefore necessary to try to find estimates for the whole 1990-2015 time period. For many indicators, the MDG reports only have one data point. In order to effectively monitor progress and the effect of policies and other interventions, it is important to report time-series. If full series cannot be produced, at least a base line value should be given together with the most recent estimate.

The split of activities and the lack of coordination are worrying. In the Caribbean subregion, the statistical offices and ministries are small. Capacity is therefore limited and all available expertise and manpower should be mobilized behind a joint effort in the collection, production and reporting of the progress on the Goals and the indicators.

As within the United Nations system, national agencies have to seek cooperation. The only way forward is by bundling efforts and fostering cooperation at all levels and across all departments and institutions involved. All available capacity should be mobilized behind the common goal.

In most cases the NSO is best adept at collecting and analysing data. The NSOs could function as a coordinating body making use of the specific expertise present in other departments and institutions. However, often they are not or only partly responsible. There is therefore a great need for fostering cooperation among all actors involved.

Cooperation is not only necessary within a country and between a country and international actors, it is also essential among individual countries. Experiences and capacities should be shared as much as possible. National machineries in smaller countries will never have the capacity that the larger countries have. However, the same information has to be produced. Cooperation and synergy is therefore even more important in less populous countries. Seeking assistance in the region can be more cost effective and expertise is based on a similar social-cultural and economic setting.

Sources used and methodology might change among agencies and from one country to another. A clear documentation is needed, but metadata is often not available or incomplete. No MDG reporting can therefore go without a description of the institutions involved, the data considered, the methodology applied, and the definitions used.

V.   CONCLUSIONS

Development is the aim of the MDGs and the Targets that were set. The indicators are the means to monitor and measure the advancement to the fulfilment of the Goals and the accompanying Targets that were set. The United Nations system is strongly committed to the MDGs and national governments and institutions are urged to make use of the services and information provided by the various United Nations agencies.

The responsibility for producing and reporting of the demographic and health-related MDGs is in general scattered across national agencies. More coordination and cooperation is needed among the various actors at the national level. Due to the relatively small size of the countries in the Caribbean subregion and the limited importance given by the governments to statistical offices and other agencies involved, there is only a limited availability of manpower to collect and report on MDG indicators. To further overcome scarcity of resources and capacity, the sharing of expertise and cooperation among the countries of the region is strongly recommended. Technical assistance can be requested for Goals and indicators that are identified for needing such assistance.

Only some of the countries have produced an MDG progress report and hardly any country has an MDG website. National reporting on the individual demographic and health-related MDG indicators has been mixed.

Existing sources such as registers and surveys have to be more fully utilized. After analysing all possible sources, a careful evaluation should take place within a country to determine which indicators can be measured with existing data sources, which new data collections could be undertaken, or which alternative indicators might be used. Lack of data sources or the specific situation in the country might warrant the use of alternative indicators. However, care should be taken not to increase the burden any further.

From the overview of surveys it is clear that many countries have held a variety of surveys. In national reporting, including MDG reports, only very few references are made to these surveys. Valuable sources of information are therefore underutilized.

In the whole process, documentation is essential. Without metadata, figures are just numbers. Information on quality, definition, and reliability is needed in order to change them into information that can be used to evaluate the advancements towards the Goals.

Demography and Health-related Millennium Development Goals, Targets[19] and Indicators

Goal 4: 'Reduce child mortality'
    Target 4a: Reduce by two thirds the mortality rate among children under five
        4.1 Under-five mortality rate
        4.2 Infant mortality rate
        4.3 Proportion of 1 year-old children immunized against measles

Goal 5: 'Improve maternal health'
    Target 5a: Reduce by three quarters the maternal mortality ratio
        5.1 Maternal mortality ratio
        5.2 Proportion of births attended by skilled health personnel

    Target 5b: 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 6a: Halt and begin 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 6b: 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 6c: Halt and begin 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 bed nets
        6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial 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

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[19] To avoid reusing numbers for a different purpose, in 2008 the United Nations has renumbered all targets and indicators such that they reflect the goal to which they belong.

United Nations recommended definitions, sources and data issues:

Target 4a: Reduce by two thirds the mortality rate among children under five

4.1 Under-five mortality rate

Definition:

The under-five 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 five if subject to current age-specific mortality rates.

Age-specific mortality rates are calculated from data on births and deaths in vital statistics registries, censuses and household surveys in developing countries. Estimates based on household survey data are obtained directly (using birth history, as in Demographic and Health Surveys) or indirectly (Brass method, as in Multiple Indicator Cluster Surveys). The data are then summed for children under five, and the results are expressed as a rate per 1,000 live births.

Sources:

The best source is a complete vital statistics registration system, one covering at least 90 per cent of vital events in the population. If unavailable, estimates can also be obtained from sample surveys or derived by applying direct and indirect estimation techniques to registration, census or survey data. A wide variety of household surveys, including MICS and DHS are available.

Problems/Issues:

The under-five mortality rate is considered to be a more robust estimate than the infant mortality rate if the information is drawn from household surveys.

In developing countries, household surveys are essential to the calculation of the indicator, but there are some limits to their quality. Survey data are subject to recall error; in addition, surveys estimating under-five deaths require large samples because such incidences are uncommon and representative households cannot ordinarily be identified for sampling. Depending on the source and method used, results are not strictly comparable.

Alternative concepts and indicators:

Infant Mortality Rate (see below).

4.2 Infant mortality rate: Deaths below age one per 1000 life births in a calendar year

Definition

The indicator is the number of deaths of infants under one year of age in the indicated year per 1,000 live births in the same year. For data from household surveys, infant mortality estimates are obtained directly (using birth history, as in DHS) or indirectly (e.g. Brass method, as in MICS).

Sources

The best source of data is a complete vital statistics registration system (one covering at least 90 per cent of vital events in the population). If unavailable, estimates are also obtained

from sample surveys or derived by applying direct and indirect estimation techniques to registration, census or survey data. A wide variety of household surveys, including MICS and DHS, are available.

Problems/Issues:

When estimated indirectly, the under-one mortality estimates must be consistent with the under-five mortality estimates. The infant mortality rate is considered to be a more robust estimate than the under-five mortality rate if the information is drawn from vital statistics registration. Survey data are subject to recall, evasion (of extra questions for children) and other error, and surveys estimating infant deaths require large samples because such incidences are uncommon and representative households cannot ordinarily be identified for sampling.

The definition of life birth might differ across time and between countries. Infant deaths might be classified as still birth, leading to a downward bias, or the reverse.

Alternative concepts and indicators:

Under-five Mortality (see above).

Instead of using births and deaths occurring in a certain calendar year (using register data), deaths can be related to the original birth cohort. Though leading to a real probability instead of a ratio, more detailed information is needed.

4.3 Proportion of 1 year-old children immunised against measles

Definition:

The proportion of 1-year-old children immunized against measles is the percentage of children under one year of age who have received at least one dose of measles vaccine.

The indicator is estimated as the percentage of children ages 12–23 months who received at least one dose of measles vaccine either any time before the survey or before the age of 12 months.

Sources:

The two main sources are reports of vaccinations performed by service providers (administrative data) and household surveys containing information on children's vaccination history (coverage surveys). The principal surveys used as sources of information on immunization coverage are Expanded Programme on Immunization (EPI) surveys, MICSs and DHSs. Routine data are compiled by national EPI programme managers.

Problems/Issues:

If precise information on the size of the cohort of children under one year of age is not available, immunization coverage might be difficult to estimate. Failure to report or leaving out immunizations administered by the private sector are other sources for bias.

Alternative concepts and indicators:

Additionally, vaccinations against tuberculosis (BCG) and/or DPT and/or oral polio could be measured.

Target 5a: Reduce by three quarters the maternal mortality ratio
     5.1 Maternal mortality ratio:

<u>Definition</u>

Maternal mortality ratio: number of maternal deaths during a given time period per 100,000 live births during the same time-period. ICD-10 definition: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

<u>Sources</u>

Vital registration and health information systems can collect death data by cause. If reliable register data is not available, household surveys can be a source. The DHS is an example of a survey from which maternal mortality can be estimated (sisterhood method).

<u>Problems/Issues</u>

Because of misclassification and underreporting of maternal deaths, it is difficult to get an accurate assessment of Maternal Mortality. Additionally, it is a relatively rare event which makes large samples necessary in order to get reliable results. Depending on the source, different definitions have to be used. For example, the sisterhood method from surveys uses the pregnancy-related death. Because of these issues, comparability in time and between countries is limited.

<u>Alternative concepts and indicators</u>

Pregnancy-related death: death of woman while pregnant or within 42 days of termination of pregnancy, irrespective of cause of death.

Late maternal death: The death of a woman from direct or indirect obstetric causes, more than 42 days but less than one year after termination of pregnancy.

Maternal mortality rate: Number of maternal deaths in a given period per 100 000 women of reproductive age during the same time-period. (Note that this is not proper rate, neither a probability as it should be per 100,000 pregnant women).

Problems: determination and proper registration of Maternal deaths (death while pregnant, death directly caused by pregnancy or complications delivery).

     5.2 Proportion of births attended by skilled health personnel

<u>Definition</u>

Percentage of births attended by skilled health personnel (doctors, nurses or midwives) is the percentage of deliveries attended by personnel trained in providing life saving obstetric care, including giving 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. Traditional birth attendants, even if they receive a short training course, are not included.

The number of women (aged 15-49 with a live birth attended by skilled health personnel (doctors, nurses or midwives) is expressed as a percentage of women aged 15-49 with a live birth in the same period.

Sources
National household surveys such as MICS and DHS collect the information needed. Registers and information from hospitals, obstetric clinics, or midwife services are other options.

Problems/Issues
Concerns have been expressed that the term skilled attendant may not adequately capture women's access to good quality care, particularly when complications arise. A standardized concept of skilled attendant is difficult and the ability to provide also depends on the environment in which they work and on the availability of facilities.

Alternative concepts and indicators
If the number of deliveries (of one or multiple births) is not available, the number of births can be used. If no other data is available and (private) obstetric services are limited, the share of hospital births might be an estimate of the minimum.

Target 5b: Achieve, by 2015, universal access to reproductive health
5.3 Contraceptive prevalence rate
Definition
Contraceptive prevalence 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 method of contraception, regardless of the method used.

Sources
Household surveys, such as the Reproductive Health Surveys, DHS, and MICS, are the most common source of data for estimating the indicator.

Problems/Issues
Differences in formulation of questions and the range of possible methods listed can differ from survey to survey. Additionally, the sample population or the persons eligible for questioning are not always the same (e.g. only married or all sexual active persons etc.). The interpretation of 'currently using' is neither uniform.

Alternative concepts and indicators
The use of contraceptives by all women, regardless whether they are married or in a union.
Instead of measuring the use of all methods, only the use of modern (reliable) methods might be considered. Another possible indicator is the condom use.

5.4 Adolescent birth rate

<u>Definition</u>

The adolescent birth rate is the number of births to women 15 to 19 years of age per 1,000 women in that age group. It is also referred to as the age-specific fertility rate for women aged 15-19.

<u>Sources</u>

Civil registers covering at least 90 percent of live births are the best source for births by age of the mother. Censuses in general have questions on births in the past 12 months that can be used to calculate the indicator. Alternatively, household surveys can be used.

<u>Problems/Issues</u>

If registers are used, a good estimate of the total number of females of 15 to 19 years has to be available. Household surveys sometimes only cover married females. In general, retrospective data is used from Surveys. Although it increases the frequency of events, care has to be taken in bias resulting from recall, evasion and other causes.

<u>Alternative concepts and indicators</u>

In countries without fertility data, the percentage of teenage girls married can be an indication of change.

5.5 Antenatal care coverage (at least one visit and at least four visits)

<u>Definition</u>

There are two definitions adopted in the official MDG-indicator list:

i) 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. This is the definition used by UNICEF.

ii) 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. This is the definition used by WHO.

Refer to Indicator 5.2 for a note on skilled health personnel.

<u>Sources</u>

Data might be compiled at health facilities or collected through (household) surveys such as Reproductive Health Surveys, MICS, DHS, and Fertility and Family Surveys.

<u>Problems/Issues</u>

Receiving antenatal care at least four times, which is recommended by WHO, 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, a standardized concept of skilled attendant is difficult and the effectiveness of interventions in

improving maternal health also depends on the environment in which they work and on the availability of facilities.

Alternative concepts and indicators

Two alternatives are included in the standard definition of the indicator. The provision of free antenatal care within a certain time or distance can be an alternative for measuring change in coverage.

5.6 Unmet need for family planning

Definition

Women with unmet need are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child. It also includes unwanted pregnancies. The unmet need is expressed as a percentage of the total number of women of reproductive age (15-49) who are married or in consensual union.

Sources

Household surveys such as DHS and Reproductive Health Surveys are the most common source of information.

Problems/Issues

Definitions of unmet need have changed over time and differ between surveys (e.g. on definition of contraceptive methods, including or excluding women in consensual union). Surveys are therefore not necessarily comparable over time and between countries.

Alternative concepts and indicators

The following subcategories of unmet need have been proposed as MDG-indicators:

i) Women with unmet need for spacing births. (Those who are fecund and sexually active but are not using any method of contraception, and report wanting to delay the next child).

ii) Women with unmet need for family planning for limiting births. (Those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children).

Accessibility (legal, costs, and social acceptability), or the lack of it, can be alternative indicators for unmet need.

Accessibility (legal, costs, and social acceptability), or the lack of it, can be alternative indicators for universal access to reproductive health.

For further details refer to:

i) The metadata section of the official MDG Indicators website: http://mdgs.un.org/unsd/mdg/Metadata.aspx

ii) 'Indicators for Monitoring the Millennium Development Goals: Definitions Rationale Concepts and Sources' (United Nations 2003, ST/ESA/STAT/SER.F/95. United Nations Publication). Available on-line (pdf) at official MDG Indicators website.

<u>Annex III</u>

Sources

Official MDG Indicators website of the United Nations: http://mdgs.un.org/unsd/mdg

Gateway to United Nations System's work on MDGs:
http://www.un.org/millenniumgoals

MDG-Monitor: http://www.mdgmonitor.org/index.cfm

Millennium Campaign: http://www.endpoverty2015.org/

United Nations Data (including MDG-indicators): http://data.un.org

ECLAC Regional portal: http://www.eclac.org/mdg/eclac_andMDGs_en.html

UNDP: http://www.undp.org/mdg/

UNFPA: http://www.unfpa.org/icpd/mdgs.cfm

UNICEF: http://www.unicef.org/mdg/
          http://www.childinfo.org/mics.html (MICS)

WHO: http://www.who.int/mdg/en/

UNAIDS: http://www.unaids.org

World Bank: http://ddp-ext.worldbank.org/

USAID: http://www.usaid.gov/aobut_usaid/mdg/

United Nations Development Group: http://www.undg.org

Ford Foundation: http://www.fordfound.org/

Gates Foundation: http://www.gatesfoundation.org

Measures: http://www.measuredhs.com

Health Metrics Network: http://www.who.int/healthmetrics

DevInfo: http://www.devinfo.org/