IRC International Water and Sanitation Centre

Monitoring Millennium Development Goals

A review of experiences and challenges

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Monitoring Millennium Development Goals for Water and Sanitation

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April 2004

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Foreword

The Millennium Development Goals (MDGs) represent a renewed commitment of the international community to overcome persistent poverty. It has been widely recognized that the improvement of water supply and sanitation is a core element for poverty reduction as well as for conflict prevention. Halving 'by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation' has therefore been defined as one of the numerical and time-bound targets for the MDGs.

In the water supply and sanitation sector, monitoring progress towards achieving the MDGs is essential for maintaining and putting into practice the political commitment both of the international community as well as the national governments. Monitoring information is also used for advocacy, to promote the importance of water supply and sanitation issues in national policies and poverty reductions strategies. The need for monitoring the progress toward achieving the MDGs on water and sanitation has been widely acknowledged and numerous initiatives are being carried out. The challenge for the international community is to elaborate a simple, practical and accepted system that provides key actors with core information to take informed decisions on scaling and focussing of political and policy reform efforts as well as channeling of financial resources.

German development cooperation has a longstanding commitment for improving water supply and sanitation to contribute to the overarching goals of reducing poverty, safeguarding peace and making globalisation equitable. The Federal Ministry for Economic Cooperation and Development (BMZ) has therefore taken up the issue of reviewing existing global programmes with regard to monitoring the MDG targets for water supply and sanitation. In close cooperation with KfW and GTZ, the IRC International Water and Sanitation Centre carried out this review of existing M&E efforts with the objectives to map the existing efforts and identify challenges that need to be addressed. The recommendations can also serve as information for the international development community for possible further actions in the field of monitoring. A workshop bringing together representatives of BMZ, NORAD, AfD, GTZ, KfW and IRC further enriched the discussion on constraints, challenges and recommendations.

This volume provides valuable insights into the challenges of monitoring progress towards the MDGs for water and sanitation and formulates recommendations in view of improving the existing initiatives to provide the international community with core information to allow for focussing of political and policy reform efforts as well as channeling of financial resources.

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Acronyms

AFD	Agence Française de Développement
BMZ	German Federal Ministry for Economic Cooperation and Development
CCA	Common Country Assessments
DHS	Demographic and Health Survey
EHP	Environmental Health Programme
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
IDWSSD	International Decade for Water Supply and Sanitation Development
ILO	International Labour Organization
IMF	International Monetary Fund
IRC	IRC International Water and Sanitation Centre
IWRM	Integrated Water Resources Management
JMP	Joint Monitoring Programme
KfW	KfW Bankengruppe (KfW banking group)
LSHTM	London School of Hygiene and Tropical Medicine
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MICS	Multiple Indicator Cluster Survey
MPA	Monitoring for Participatory Assessment
NHDR	National Human Development Reports
NORAD	Norwegian Agency for Development Cooperation
OECD	Organization of Economic Cooperation and Development
O&M	Operation and Maintenance
PRA	Participatory Rapid Appraisal
PRSP	Poverty Reduction Strategy Paper
QIA	Quantified Information Appraisal
SWAP	Sector Wide Approach
UNDP	United Nations Development Programme
UNDG	United Nations Development Group
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WHS	World Health Survey
WSP	Water and Sanitation Programme
WSSCC	Water Supply and Sanitation Collaborative Council

Executive Summary

The Millennium Development Goals (MDGs) represent a renewed commitment to overcome persistent poverty and to address many of the most enduring failures of human development. The MDGs agreed by the international community in 2000 comprise 8 goals, 18 targets and 48 indicators. Water is interconnected with all eight MDGs and basic sanitation was added to the list at the 2002 World Summit on Sustainable Development in Johannesburg. Halving 'by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation' is one of the quantified and time-bound targets defined for the MDGs.

Monitoring progress towards achieving the MDGs in the water supply and sanitation sector is essential if the political commitment of the international community and national governments is to be maintained and put into practice. Monitoring information is also vital for advocacy, to promote the importance of water supply and sanitation issues in national policies and poverty reductions strategies. The need to monitor progress toward achieving the MDGs on water and sanitation has been widely acknowledged and numerous initiatives are under way. However, background information about this sector remains unsatisfactory and the reliability of existing statistics is being questioned. There is no general agreement about the instruments, methodologies or definitions that should be used for MDG monitoring at global, national or local level and no unified and harmonised system seems to have been established.

The 'IENA Group', an informal donor group which was convened at the invitation of the World Bank, has expressed the need to review existing global programmes with a view to developing simple, practical and agreed systems that provide key actors with the core information they need to take informed decisions. Reliable information is needed to focus and scale political and policy reforms as well as to channel financial resources accurately. A core group has agreed to investigate the issue of monitoring the water MDGs. As a first step, this review of existing monitoring and evaluation (M&E) efforts for MDG Water Supply and Sanitation has been commissioned by the German development cooperation and carried out by the IRC with the objective of mapping existing efforts, identifying challenges that need to be addressed and making recommendations for further action.

Two parallel and complementary efforts are currently being undertaken to **monitor progress towards the MDGs.** At a global level, the UN Statistics Division takes the lead in tracking progress. WHO and UNICEF have the major responsibility for providing the UN Statistics Division with relevant international statistics and analysis of quantitative and time-bound indicators directly linked to water and sanitation

issues (target 10). This data is derived from the Joint Monitoring Programme (JMP), established in 1990 to make a global assessment of the water and sanitation situation. Since 2000, the JMP has relied exclusively on information collected through nationally representative household surveys, particularly, the Demographic and Health Surveys (DHS), UNICEF's Multiple Indicator Cluster Surveys (MICS), and the national demographic census. Data from the World Health Surveys may also be used in the future. Other relevant information is taken from assessment questionnaires completed by WHO country offices in liaison with local UNICEF staff and national government agencies.

At a national level, MDG monitoring is coordinated and supported by UNDP, in particular for the preparation of national monitoring reports. The main purpose of MDG country reports is not so much statistical monitoring as advocacy, public information and mobilization. While there is considerable variation among countries, the data base used for national MDG monitoring tends to be broader than for global monitoring and may include data from research institutions, censuses, administrative reporting systems and household based surveys.

MDG monitoring for water supply and sanitation is set in a wider framework involving other institutions central to the MDGs: the Millennium Project Task Force for Water and Sanitation and its monitoring sub-group, the UNDP-centred MDG Monitoring Teams and their related partner agencies in-country, the WSSCC Monitoring Task Force, and the Joint Monitoring Programme and its Technical Advisory Group. Any further development for MDG monitoring will need to involve these international platforms as core actors.

The Joint Monitoring Programme, which is generally seen as the main mechanism for monitoring progress towards the MDGs in this sector, serves as the international reference for achievements in water and sanitation. However, it has been widely acknowledged that a number of **challenges for MDG monitoring** are associated with the existing systems and processes. To address these challenges, the MDG Task force for Water and Sanitation and the JMP Technical Advisory Group are paying attention to key issues such as comparability of definitions, breadth or scope of terminology, baseline data, questionnaires and collection methods, data management and analysis, sampling, timeliness, relevance and usability and actual use.

It is felt that value could be added by complementary and supporting activities to promote a common and widely implemented yet flexible system specifically for MDG monitoring on a national as well as global level. Depending on the primary focus of the MDG monitoring, there are different points of entry for enhancing monitoring.

Complementary monitoring approaches developed on a pilot basis have addressed some of the inherent deficits and challenges of the systems currently being applied for MDG monitoring. These experiences can enhance monitoring by providing innovative approaches to sampling, data analysis and survey conceptualisation. Three relevant examples of complementary monitoring approaches are the monitoring of Vision 21, the Method of Participatory Assessment (MPA/QIA) which combines quantitative and qualitative data, and country monitoring by Water Aid with an equity perspective.

Recommendations

Based on the achievements of MDG monitoring for water supply and sanitation and the challenges, a number of recommendations for action have been formulated taking into account the interdependence of different challenges and points of entry. These recommendations attempt to balance a demand for comparability and uniformity with the need for flexibility given the number of actors, institutions and countries involved. The recommendations can be grouped into the following three categories:

A. Strengthening statistical capacities and monitoring effectiveness

- Strengthening national statistical capacity focusing on data gathering, quality of survey information, statistical tracking, analysis.
- Improving the use of monitoring information by strengthening capacities to integrate the results of statistical analysis into policy, planning, resource allocation and subsequent monitoring.
- Making use of relevant experiences with monitoring by applying methodologies that focus on a wider range of variables such as access to service by the poor, management, functionality, behaviours and use of water and sanitation services, largely with a view to linking monitoring to action.

B. Coordination, Information Sharing and Cooperation

- Collaboration between programmes and projects at country level recognizing the PRSP is one of the platforms where MDG monitoring can be integrated and coordination and cooperation can be improved.
- Continued efforts to harmonize definitions and expand agreed indicators, while bringing together relevant stakeholders within a country to ensure relevance to the country situation, will facilitate MDG monitoring at national level and harmonize efforts.

C. Strengthening Global Monitoring and the JMP in particular

- Continued and enhanced support for international platforms to harmonize terminology and definitions and to ensure validity of monitoring, in particular, to move beyond just measuring access to improved facilities, towards measuring sustained access to safe water and sanitation.
- Enlarging the JMP team capacity, enriching its programme to act upon some of the preceding recommendations, and also the capacity of the JMP Technical Advisory Group, the UN Millennium Task Force and the WSSCC Task Force on Water and Sanitation.

This report has been made on the basis of a critical review of existing information accessible from the Internet (see references in Annex 1), the work of IRC and partners on monitoring and through participation in the WASH Week held in Geneva in December 2003. Interviews were held with the WSSCC Monitoring Task Force as well as with key JMP members.

A first draft of the report was presented and discussed at a workshop in February 2004 bringing together the core members of the IENA group on the issue of monitoring (BMZ, NORAD, AFD) as well as representatives of GTZ, KfW and IRC at the invitation of the Federal Ministry for Economic Cooperation and Development (BMZ).

April 2004

1. The Millennium Development Goals and targets

The Millennium Development Goals (MDGs) stand for a renewed commitment to overcome persistent poverty and address many of the most enduring failures of human development. Of all the major target-setting events of recent years, the UN Summit of 2000 that set the Millennium Development Goals (MDG) for 2015 remains the most influential. In September 2000, 147 heads of State and Government, and 189 nations in total, committed themselves in the United Nations Millennium Declaration [A/RES/55/2] to make the right to development a reality for everyone and to free the entire human race from want. They acknowledged that progress is based on sustainable economic growth, which must focus on the poor, with human rights at the centre. The objective of the Declaration is to promote "a coordinated strategy, tackling many problems simultaneously across a broad front". The Declaration calls for halving by the year 2015, the number of people who live on less than one dollar a day. This effort also involves finding solutions to hunger, malnutrition and disease, child mortality and ill-health, promoting gender equality and the empowerment of women, guaranteeing a basic education for everyone, and supporting the Agenda 21 principles of sustainable development. Direct support from the richer countries, in the form of aid, trade, debt relief and investment is to be provided to help the developing countries. Each Millennium Development Goal and target addresses an aspect of poverty, but they should be viewed together because they are mutually reinforcing.

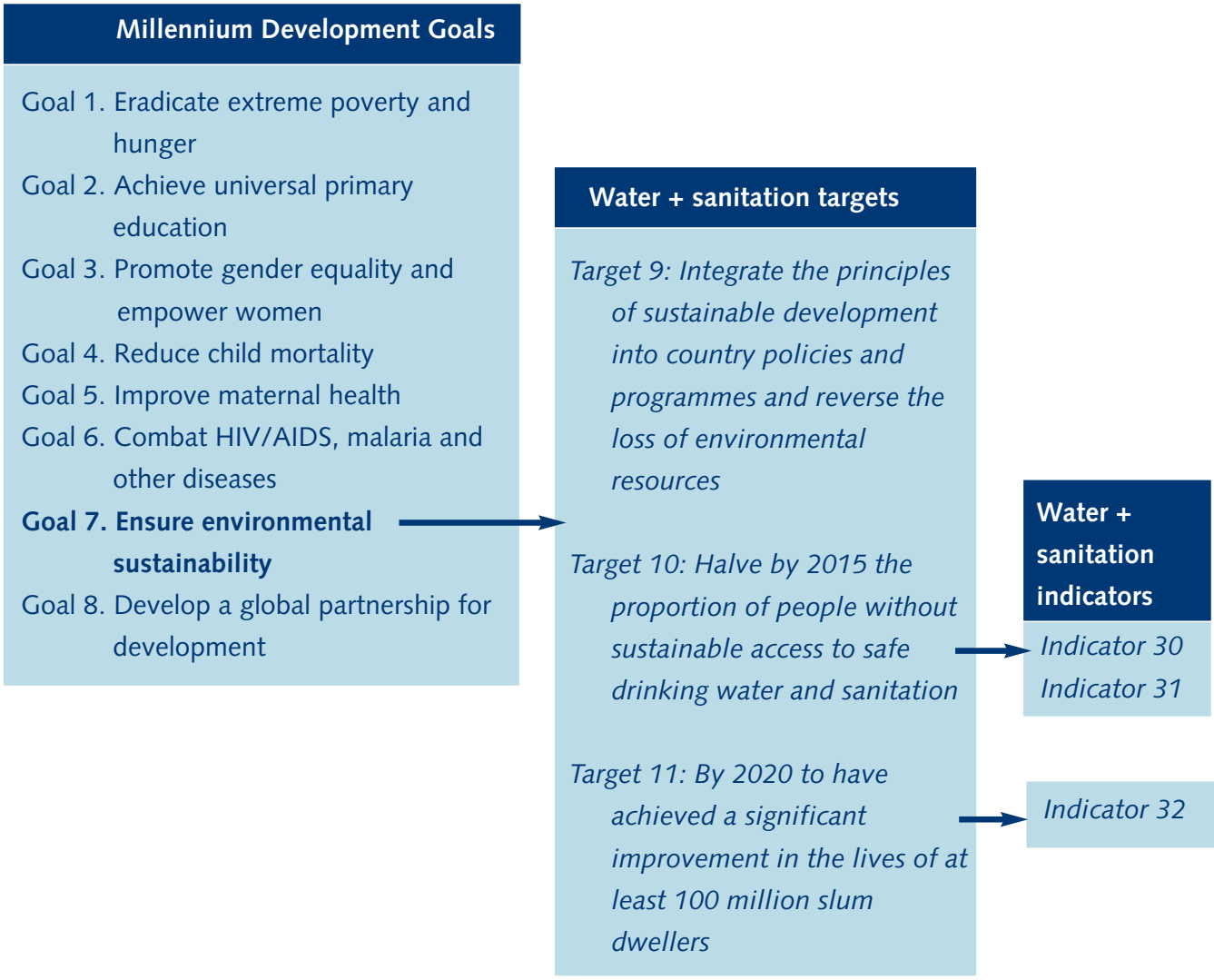
There are many organizations and groups working in different ways to achieve the MDGs. The underlying assumption is that if some countries can make great progress towards reducing poverty in its many forms, others can as well. However, the challenges are great. Conflict reverses gains in social development in many countries in Sub-Saharan Africa. The spread of HIV/AIDS is impoverishing individuals, families and communities on all continents. Sustained economic growth—that vital component for long-run reductions in poverty—still eludes half the world's countries. In more than 30 countries, real per capita incomes have fallen over the past 35 years. And where there is growth, it needs to be spread more equally and applied more transparently.

A framework of 8 goals, 18 targets and 48 indicators to measure progress towards the Millennium Development Goals was adopted by a consensus of experts from the United Nations Secretariat, the IMF, OECD and the World Bank. Among the eight goals, the

1 http://millenniumindicators.un.org/unsd/mi/mi_highlights.asp

2 http://www.paris21.org/betterworld/

3 See Road Map towards the Implementation of the United Nations Millennium Declaration, A/56/326. For an overall description, see About the Millennium development goals.



seventh has three targets (numbered 9, 10 and 11) that deal directly with water supply and sanitation.

Target 9: Reverse loss of environmental resources

The Millennium Declaration promoted the concept of reducing unsustainable exploitation of water resources by developing water management strategies at regional, national and local levels. While no specific indicator was framed for this, the reduction of unsustainable exploitation of water resources is implicit in this target, which calls for integrating the principles of sustainable development into country policies and programmes and reversing the loss of environmental resources.

Target 10: Concerning water supply and sanitation

In its Millennium Declaration, the UN General Assembly pledged that the proportion of people not having sustainable access to safe drinking water would be reduced by half by 2015. The following measurement has been formulated to monitor this:

Indicator 30: Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF - WHO)

In addition, the Bonn Conference (2002) recommended a corresponding target to halve the proportion of people lacking access to improved sanitation by 2015. At the World Summit on Sustainable Development in Johannesburg, this target was adopted, complementing the Millennium Development Goal on sustainable access to drinking water. Indicator 31 is meant to measure this target:

> Indicator 31: Proportion of population with access to improved sanitation, urban and rural (UNICEF - WHO)

Target 11: Concerning the improvement of the lives of slum dwellers

Under this target, the UN Summit pledged to have achieved, by 2020, a significant improvement in the lives of at least 100 million of slum dwellers. The indicator adopted for this target is:

> Indicator 32: Proportion of households with access to secure tenure (UN-HABITAT)

This indicator 32 includes the proportion of households with access to water (within 200 metres) and having a connection to a sewer. Both household access and sewerage connections are proxies of secure tenure as otherwise such investments would not be made.

Other related aspects

The water and sanitation sector is not only the focus of the MDG targets listed above but is also closely associated with each of the other MDGs. Gender equality has been proven to be positively associated with better sustained and better used community water supplies and sanitation[4]. Gender mainstreaming is one of the priorities in the water and sanitation sector (MDG 3: Promotion of gender equality and empowerment of women). The incidence of water-related diseases is directly relevant for improvements in the health situation (MDG 4: Reduce child mortality, MDG 5 Improve maternal health and MDG 6: Combat HIV, AIDS, malaria and other diseases) and has an impact on school attendance (reduced time and health constraints for attendance due to improved water supply and sanitation services). The time saving potential of improved services for women and children (both directly in terms of reduced transport time and costs, and indirectly in terms of time for caring for sick family members) can contribute not only to the education goal (MDG 2) but also to improving chances for participation in development by engaging in income-earning activities (MDG 1). The provision of adequate water and sanitation services furthermore has positive impact on

4 Bruce Gross, Christine van Wijk, Nilanjana Mukherjee, 2001, *Linking Sustainability with Demand, Gender and Poverty: A study in community-managed water supply projects in 15 countries* . Washington D.C., World Bank Water Supply and Sanitation Programme; Delft, IRC International Water and Sanitation Centre. http://www.wsp.org/08_Category_output.asp?Category=Participation%2FGender%2FPROWWESS

the general health and nutritional situation. Research studies show that frequent and severe cases of diarrhoea have negative impacts on nutrition and that home produced food—such as vegetables, eggs, milk and meat—is related to the availability of land and water. Providing for effective and sustainable water supply and sanitation services requires adequate governance structure and includes a commitment to good governance (MDG 8).

For each of the 48 indicators related to the eight MDGs at the global level, specific agencies were given the responsibility for reporting international statistics. In the case of water supply and sanitation, these are WHO together with UNICEF. For data that measures access to secure tenure, UN Habitat is responsible. Parallel to this, *within each country*, a consortium of agencies and institutions, led by UNDP, works to facilitate monitoring of MDG goals, and to stimulate use of information about the MDGs. As this implies, there are two linked, but parallel monitoring systems in operation, global and national.

To address the challenge of providing a better life for the world's poor and to achieve the millennium goals by 2015, it is estimated that investment to meet increasing demand for water for agriculture, industry and household use, and to meet the need for sanitation and resource management, will have to increase by 125% from the present US$ 80 billion per year to US$ 180 billion per year.

2. Monitoring the MDGs: background

Monitoring progress towards achieving the MDGs is essential for putting into practice the political commitments both of the international community and national governments. One primary purpose of monitoring the MDGs has been to track progress, that is, to assess current status and progress toward achieving goals for poverty reduction. Equally, however, monitoring the MDGs has a strong advocacy dimension. Monitoring information is meant to encourage countries to set policies and strategies consistent with the MDGs to reduce poverty, while, at the same time, enabling international and bi-lateral support, particularly for the least developed countries.

The two primary purposes of monitoring are: tracking progress toward achieving the MDGs and advocacy. A review of the literature also shows that the purposes of MDG monitoring have gradually expanded as a reflection of the experience over the past three years.

Purposes for monitoring the MDGs

1. Tracking: Assess progress toward achieving MDG targets[5].
2. Advocacy and communication for MDGs[6].
3. Enable national, international and bi-lateral agencies to
    a. develop policy for poverty reduction,
    b. plan strategies and actions to carry out these policies, and
    c. target resource allocation.
4. Provide an opportunity to improve national and international statistics processes for these purposes[7].

2.1 What is effective monitoring?

The ability of national governments, multilateral agencies and donors to support progress toward achieving development goals depends crucially on the quality and availability of reliable data. For this, valid, timely and user-friendly data are needed to monitor the MDGs.

This section examines, in general, the concept of effective monitoring drawing on

5 http://wbln0018.worldbank.org/HDNet/HDDocs.nsf/vtlw/b35cb52fc950585785256dc2005da19c/$FILE/Block1Article1.pdf

6 See, for example, as above.

7 See http://www.worldbank.org/data/intconfsummary.html).

commonly agreed criteria to describe what is meant by *good monitoring and valid and reliable data.*

These criteria are then used to assess our topic—MDG monitoring for water and sanitation—in later chapters.

Validity and reliability basically relate to questions such as:
Is the data accurate? Does it reflect what is supposed to be measured? Are the measurements and data collection procedures reliable? Is information from different sources the same or similar?

Validity and reliability are not always easy to manage in monitoring and, in practice, remain highly desirable goals which can only be achieved within certain boundaries. However, the need for validity and reliability in data collection, analysis and use of data needs to be addressed if the monitoring of the Millennium Development Goals is to be effective. For the four purposes served by the monitoring of the MDGs noted above, some criteria are described here.

Purpose 1. MDG monitoring should be used for tracking: Assess progress toward achieving MDG targets.

Comparable and well-defined terminology

To track progress at a global level and to make comparisons between countries, it is important that data for each country are based on the same or comparable definitions. If definitions for 'sustained access to safe drinking water and sanitation' are not similar, then global information is compromised. Comparing countries using different definitions for data becomes rather like comparing mangoes and water-melons.

For international monitoring, there is a need for a common agreement on: a) the terminology for "access" for both water and sanitation; b) the operational meaning of the agreed terminologies; c) survey instruments and indicators for assessing progress towards the targets.

Content validity: The data should measure what is meant to be monitored. For example, for the proportion of households having latrines it is not sufficient to measure "safe sanitation", as it omits maintenance and use of latrines as well as other aspects of sanitation such as waste water disposal and hygiene.

Quality of the data: This implies the measurement of many aspects such as: timeliness, baseline data, sampling and validation/triangulation.

Timeliness is important because household survey data can be three to five years

out of date. This leads to estimates, often assuming a smooth continuation of past trends, which may not always be realistic.

Baseline data: It is important to use the same baseline data against which changes can be determined. For example, the UN Statistics Division and UNICEF use 1990 as their baseline and therefore the Secretary General's report on progress towards achieving the MDGs will use the same baseline year. This baseline date should be adopted for all monitoring and documentation.

Questionnaires: Much of the global and national data used to monitor the MDGs for water and sanitation are derived from sample cluster household surveys. The quality of this data is, to a large extent, determined by the quality of the questionnaire and the way it is administered. Observers have asked, with respect to global monitoring, if there is scope for improving the quality of data from well-known quantitative questionnaires[8].

Sampling: Selecting a small number of units to represent the entire population is an important issue. Much of the data is collected from sampling households but there is little information about how sampling is, in reality, done. An exception is the sampling done, not for MDGs in water and sanitation, but for the Vision 21 targets which is described in Chapter 4.

Data management and analysis: To ensure quality of the data, the process should be subject to review and provide the opportunity to re-analyse raw data. Furthermore, rather like financial auditing, agencies and governments collecting monitoring information should be accountable for the information they provide.

There appears to be some tension between demands, particularly at international level, for quality data, set against national needs for the rapid provision of information at low cost. For example, the time suggested in the UN guidance manual to prepare a national MDG report is only about two months. Some observers have noted that the short term need for data must be carefully balanced with longer term systematic improvements in capacity that avoid placing excessive demands on national systems[9].

Purpose 2. MDG monitoring should support advocacy and communication about the MDGs

Advocacy requires the use of fairly simple information that can be easily understood

8 See http://www.worldbank.org/data/intconfsummary.html and the first day presentations.

9 http://www.worldbank.org/data/intconfsummary.html

and communicated. Large data sets are far less likely to be used than data which is tailored to target audiences. These audiences include not only decisions makers, but also the public within a country as well. Visualizing data is useful for communication and advocacy.

Good communication between the providers and users of information is, obviously, essential if the information is going to be used.

Purpose 3. MDG monitoring should provide some of the information to enable national, international and bi-lateral agencies to

- develop policy for poverty reduction,
- plan strategies and actions to carry out these policies, and
- target the resource allocation.

Relevance and scope of terminology

Relevance addresses issues such as: Does the information capture the important element of the setting? Of the programme? Does the information help identify appropriate actions for programming?

In some cases the relevance of data is compromised by use of narrow definitions. For example, "Sustainable access to safe drinking water" should be viewed from a social and economic perspective as well as an environmental one. As the UN Millennium Task Force for Water and Sanitation noted, "sustainable access" includes a physical/infrastructure dimension but also embraces a concept of use. Having a latrine without using it, jeopardizes the intention of the MDGs.

Many nations, with some justification, adapt international definitions to suit their own circumstances. This happened with the World Bank's Living Standards Measurement Studies (LSMS), launched in 1980, whose comprehensive reports are now available for more than 100 countries. The LSMS even stimulates countries to develop definitions most relevant to the national context in understanding poverty and developing their own policies. Global monitoring of the MDGs, on the other hand, requires use of similar definitions across countries. The largely unresolved dilemma is: How can methodologies and definitions be adjusted while still remaining relevant to the reality of the country?

Purpose 4. Provide an opportunity to improve national and international statistics processes for these purposes

The collection of information about the MDGs has highlighted weaknesses in the statistical capacities of some nations. Reflecting this, several groups who work to assess MDGs and development indicators in general, have expressed concern about

the overall statistical capacity at both national and international levels[10].

In summary, validity and reliability criteria that require consideration for monitoring the MDGs include: comparability of definitions, relevance and scope of terminology, quality of data, questionnaires and collection methods, data management and analysis, sampling, timeliness, relevance and usability. These issues need to be addressed if monitoring the MDGs is to be as effective as intended.

2.2 The background to monitoring for water and sanitation

This section describes the origin of one important global resource for monitoring water supply and sanitation, which will provide useful background for the next chapters. Long before the advent of the MDGs, some 30 years ago, the World Health Organization (WHO) began monitoring the water supply and sanitation sector at global level[11]. One significant development at the end of the 80's and beginning of the 90's was the collaboration of WHO and UNICEF to initiate a Joint Monitoring Programme (JMP) for global assessment of water and sanitation.

Another significant change in this global monitoring effort was a shift in the late 1990's from relying on data provided by governments through their administrative statistics, to using population-based information collected through household surveys in stratified random samples. Government data tends to be less accurate than data collected directly at the user/household level. The former is usually based on provider data about physical implementation, using various definitions of access. Provider data can miss information, for example, about additional construction under emergency and drought schemes or about functionality (constructed but not operating). Reported data may miss out latrines constructed by families themselves.

10 See, for example, http://www.worldbank.org/data/intconfsummary.html and http://www.unmillenniumproject.org/documents/tf07apr18.pdf

11 Source: PPT presentation on JMP by José Hueb, WHO JMP Coordinator.
Note: There are other international data sets. For example, the World Development Indicators (WDI) are the World Bank's premier annual compilation of data about development. WDI 2003 includes approx. 800 indicators in 87 tables, organized in six sections: World View, People, Environment, Economy, States and Markets, and Global Links. Water and sanitation comprise only one small part of these international data sets, however.

Three specific stages in the global assessment of water supply and sanitation can be distinguished:

• **From 1970 to 1990:** Country-level information provided by governments. Global reporting by WHO (Documents: Early WHO reports, IDWSSD: baseline report 1980; Interim reports: 1983, 1985, 1988; End of Decade report: 1990);
• **From 1990 to 1997:** WHO and UNICEF collaborating in the Joint Monitoring Programme (JMP) in its initial phase. Country-level information provided by governments. Reporting done per country by the JMP. (Activities: Capacity building at the country level; Documents: Reports of status of monitoring, training; 1986 JMP report)
• **From 1997 to the present:** WHO and UNICEF collaborating in Joint Monitoring Programme, current phase. Country-level estimates based on population-based information. Reporting per country by the JMP. Consolidation of JMP for reporting officially to UN (Document: Global Water Supply and Sanitation Assessment—2000 Report)

The overall aims of the Joint Monitoring Programme (JMP) are to report on the status of the water supply and sanitation sector and to support countries in their monitoring efforts to enable better planning and management. The specific objectives of the JMP are to:

- Monitor access to water and sanitation services at national, regional and global levels,
- Build national monitoring capacities,
- Inform policy-makers about the status of the sector,
- Promote international sector goals.

3. MDG Monitoring for Water + Sanitation: Core Initiatives

To monitor the MDGs, two complementary and parallel processes take place at global and country levels. This chapter describes the current situations relating to global and country monitoring strategy for the MDGs and the key institutions involved, as well as the monitoring processes and main outputs.

3.1 Global monitoring of the eight MDGs

The overall programme for the Millennium Development Goals and for monitoring the MDGs is led by the United Nations and its specialized agencies. For this, a broad UN strategy has been developed. Four elements of this strategy which have particular relevance to monitoring, are:

1. The Millennium Project is tasked to outline how the MDGs can best be achieved and undertakes special studies to support MDG assessments and their use in selected countries.
2. UN Statistics Division compiles global data. This division is the recipient of global water and sanitation assessment data provided by the WHO/UNICEF's JMP.
3. UN Millennium Task Forces of specialists are set up under the Millennium Project for each of the MDGs, to advise the Millennium Project on how the specific MDG goals and their targets can best be achieved.
4. Supporting operational country-level activities for assessment, advocacy and use of MDG data. This includes country level monitoring of progress towards achieving the MDGs.

The **Millennium Project** is a three-year initiative that will be completed by June 30, 2005. It analyses policy options and prepares advice to the UN Secretary General on how the MDGs can best be achieved. It also plans and supports research on progress of MDGs and publishes its research findings according to the following timeline[12] :

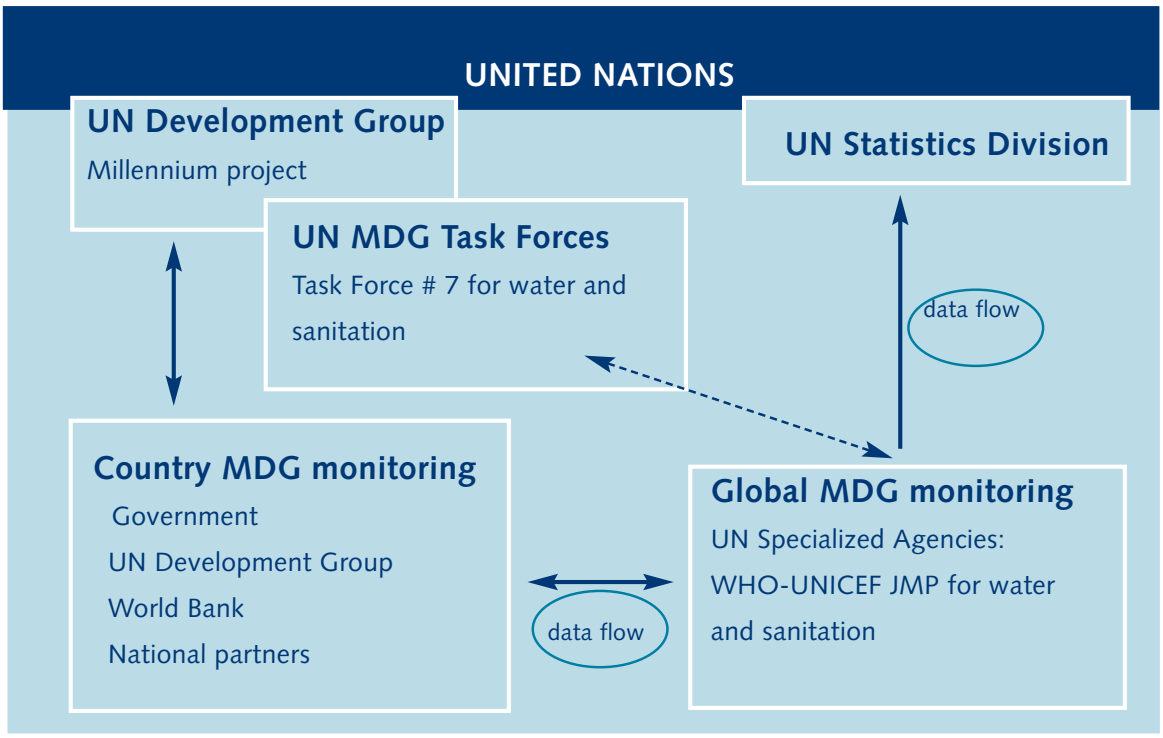
Late-2002	Completion of background papers, which map out the planned research work of each Task Force.
July 8, 2003	Publication of the Human Development Report 2003 [13], which focuses on the Millennium Development Goals and research contributed by the Millennium Project Task Forces.
Mid-2004	Presentation of the Millennium Project Interim Report to the UN Secretary-General and the UNDP Administrator.
June 30 2005	Presentation of final recommendations by the Millennium Project to the UN Secretary General.

12 Information in this section is taken from http://www.unmillenniumproject.org/html/about.shtm

13 The Human Development Report is the flagship publication of the UNDP. By invitation the Millennium Project provided the input for the 2003 report.

Some UN institutions leading the monitoring of MDGs

with reference to water and sanitation



The core of the Millennium Project's analytical work is guided by Task Forces whose mandates last until 2005. One of these, the Millennium Project Task Force (Number 7) on Water and Sanitation is described in section 5.4.

For global monitoring, to track progress in achieving MDGs, the **UN Statistics Division** is the lead group, drawing on existing monitoring information. Specialized UN agencies and the World Bank deliver data to the United Nations Statistics Division. Thus, agencies such as WHO and UNICEF, "own" an indicator, for which they analyse data and report to the UN Statistics Division for all nations.

The UN Statistics Division compiles the work of the specialized UN agencies in charge of data collection and analysis and maintains the database containing all the series of data related to the targets and the 48 millennium indicators, as well as other background series. The global database is organized and presented by the UN Statistics Division for each country in its Millennium country profiles. On the basis of this information, each year, the Secretary-General prepares a report on progress achieved towards implementing the Millennium Declaration.

Whether the data needed for calculating the indicators in each country and reporting on MDG progress are available depends, among other things, on the capacities of the national statistical services. In many instances - when country data are not available or are affected by serious quality problems - estimates are used.

3.1.1 What are the indicators for monitoring water and sanitation?

The United Nations Secretariat, the specialized agencies of the UN system, and representatives of IMF, the World Bank and OECD defined the comprehensive and time-bound (1990-2015) set of indicators for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. For water and sanitation, the targets and three main indicators are described, as defined by the United Nations, below[14] .

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

Indicator 30: Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF - WHO)

Series name: Water, percentage of population with access to improved drinking water sources, rural and urban. WHO-UNICEF through the JMP are responsible for providing the data.

Definition of access to improved drinking water supply: "Improved" water supply technologies are: household connection, public standpipe, borehole, protected well, protected spring, rainwater collection. "Not improved" are: unprotected well, unprotected spring, vendor-provided water, bottled water (based on concerns about the quantity of supplied water, not concerns over the water quality), and tanker truck-provided water. It is assumed that if the user has access to an "improved source" then such source would be likely to provide 20 litres per capita per day at a distance no further than 1000 metres. This hypothesis is being tested through National Health Surveys that are being conducted by WHO in 70 countries[15] .

In addition, the World Summit on Sustainable Development in Johannesburg took an important step with the adoption of a sanitation target, which would halve, by 2015, the number of people without improved sanitation, thereby complementing the Millennium Development Goal on access to drinking water. Indicator 31, below, defines the measurement of progress toward achieving the sanitation target:

Indicator 31: Proportion of population with access to improved sanitation, urban and rural (UNICEF - WHO)

Series name: Sanitation, percentage of population with access to improved sanitation, urban / rural. WHO-UNICEF through the JMP are responsible for providing the data.

Definition of improved sanitation: "Improved" sanitation technologies are: connection to a public sewer, connection to septic system, pour-flush latrine, simple

14 See also: Road Map towards the Implementation of the United Nations Millennium Declaration.

15 Communication of 25 March 2003 from the WHO Water, Sanitation and Health Programme.

pit latrine, ventilated improved pit latrine. The excreta disposal system is considered adequate if it is private or shared (but not public) and if it hygienically separates human excreta from human contact.

"Not improved" are: service or bucket latrines (where excreta are manually removed), public latrines, latrines with an open pit.

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

Under this target, the UN Summit pledged to have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers. This target, measured through indicator 32, includes the proportion of households with access to water (within 200 metres) and a connection to a sewer. Water access and sewerage connections are proxies of secure tenure as otherwise no such investments would be made, and an indication of better living conditions.

Indicator 32: Proportion of households with access to secure tenure (UN-HABITAT)

Series name: Slum population as percentage of urban, secure tenure index. (UN-HABITAT is responsible for providing the data.

Definition of secure tenure index: UN-HABITAT has developed a secure tenure index that focuses on the comparability and well-measured physical representation of secure tenure and better estimates the magnitude of slum dwellers. The index is a statistical composite of permanency and legality of structure, and access to water, sewerage and electricity as reported in city summary data collected by UN-HABITAT. It represents the percentage of households with inadequate housing attributes. The percentage of households is converted directly into a population estimate using the World Urbanization Prospects population figures and projections.

Definition of slum population: Research on estimating the number of slum dwellers started with an attempt to measure the phenomenon "secure tenure". Secure tenure is the concept of "protection from involuntary removal from land or residence except through due legal process". The lack of data based on a specific and operational definition made direct estimation impossible. Initial efforts attempted unsuccessfully to use tenure status data (owner, renter and squatter) as a proxy measure. UN-HABITAT then proposed that the attribute of secure tenure would be demonstrated in household behaviour. Households with secure tenure would tend to have more improvements than households without secure tenure and that this could be measured by a proxy index that included dwelling structure and amenities data. This was seen as a subset of the UN-HABITAT slum index initiative that was already underway. The resulting secure tenure index provides a fair assessment of the magnitude of slum dwellings. The characteristic variables include: the proportion of households with access to water (within 200 metres), the proportion of permanent structures in the housing stock, the proportion of housing that is in compliance with

local regulations, the proportion of households connected to a sewer, the proportion of households connected to electricity.

The Joint Monitoring Programme, which is the major source of data for indicators 30 and 31, defines access to water supply and sanitation in terms of the types of technology and levels of service afforded (see box below).

The Joint Monitoring Programme itself defines access to water supply and sanitation in terms of the types of technology and levels of service afforded. Access to water supply services is defined *as the availability of at least 20 litres per person per day from an "improved source" within one kilometre of the user's dwelling.* "Improved sources" are those that are likely to provide safe water.

Improved water supply includes:
- household connection;
- public standpipe;
- borehole;
- protected dug well;
- protected spring;
- rainwater collection.

"Not improved" water sources are:
- an unprotected well;
- an unprotected spring;
- vendor provided water;
- tanker truck water.

Access to adequate sanitation facilities is determined by the percentage of the population using "improved sanitation".

Improved sanitation includes:
- connection to a public sewer;
- connection to a septic system;
- pour-flush latrine; simple pit latrine;
- ventilated improved pit latrine.

"Not improved" sanitation includes:
- service or bucket latrines;
(where excreta are manually removed);
- shared and public latrines;
- latrines with an open pit.

3.1.2 How is data collection, analysis and reporting done for global monitoring?

For monitoring MDGs on water and sanitation on a global basis, the international statistics of the UN Statistics Division and many MDG country reports use data provided by the WHO UNICEF Joint Monitoring Programme (JMP)[16].

The JMP does not collect primary data directly, but relies on other, existing data sources. The JMP's exclusive sources of information about the population with access to water and sanitation are nationally representative household surveys:

16 Extracts from the Joint Monitoring Programme at:
http://www.wssinfo.org/en/123_dataProcess_en.html#

• **Household survey** results are collected annually through UNICEF country offices. National surveys, particularly, UNICEF's Multiple Indicator Cluster Surveys-MICS, the Demographic and Health Surveys-DHS (sponsored by USAID), and national demographic census are reviewed for use in the JMP. In some cases data is also taken from the World Health Surveys (sponsored by WHO) and the Living Standards Measurement Surveys (sponsored by World Bank) and other validated national surveys like Health and Nutrition surveys or Reproductive Health Surveys.

• **Assessment questionnaires:** For information about sector developments, including sector investments the JMP relied on assessment questionnaires. These questionnaires were sent to the WHO country representatives, to be completed in liaison with local UNICEF staff and relevant national agencies involved in the sector. The questionnaires, approximately nine in number, cover a range of topics such as national policies, institutional and sectoral developments. Those completing questionnaires were also asked to compile an inventory of existing population-based data on access to water supply and sanitation in the country as an extra check for information that might be missed in the regular process.

About the Demographic and Health Surveys and Multiple Indicator Cluster Surveys

The Demographic and Health Surveys (DHS, see Annex 4), and the Multiple Indicator Cluster Surveys (MICS, see Annex 5) are national cluster sample surveys carried out by the National Statistics Centres, covering several thousand households in each country. The samples are stratified to ensure that they are representative of urban and rural areas in each country. In most cases, each household is asked to identify the type of water source or sanitation facility they use. Thus these surveys collect data directly from consumers in interviews that take one to one-and-a-half hours. The focus of these surveys is on family health; very few questions are water and sanitation specific. There are now more than 120 MICS and 150 DHS surveys which, together with national censuses, are used by the JMP to calculate coverage estimates.

- Demographic and Health Surveys: Typically, DHS surveys are conducted in seven to nine countries per year. Sample sizes average 6,000 to 9,000 households. Most survey results are available on the DHS website, http://www.measuredhs.com/. There are currently two schedules in the DHS, one for women and one for households which include five items about water and sanitation. DHS completes seven to nine surveys each year.

- The Multiple Indicator Cluster Surveys (MICS): About 100 developing countries have carried out the stand-alone MICS or have inserted MICS questionnaire modules into other surveys. These are also usually carried out once in five years

>

> to allow comparison over time with sample sizes ranging from 4,000 to 6,000 households. There are three questionnaires in the MICS. The household questionnaire has six modules, one of which is for water and sanitation, with five items.

The MICS and DHS surveys are coordinated so that there are at least three years between surveys. This is said to be preferable in order to:

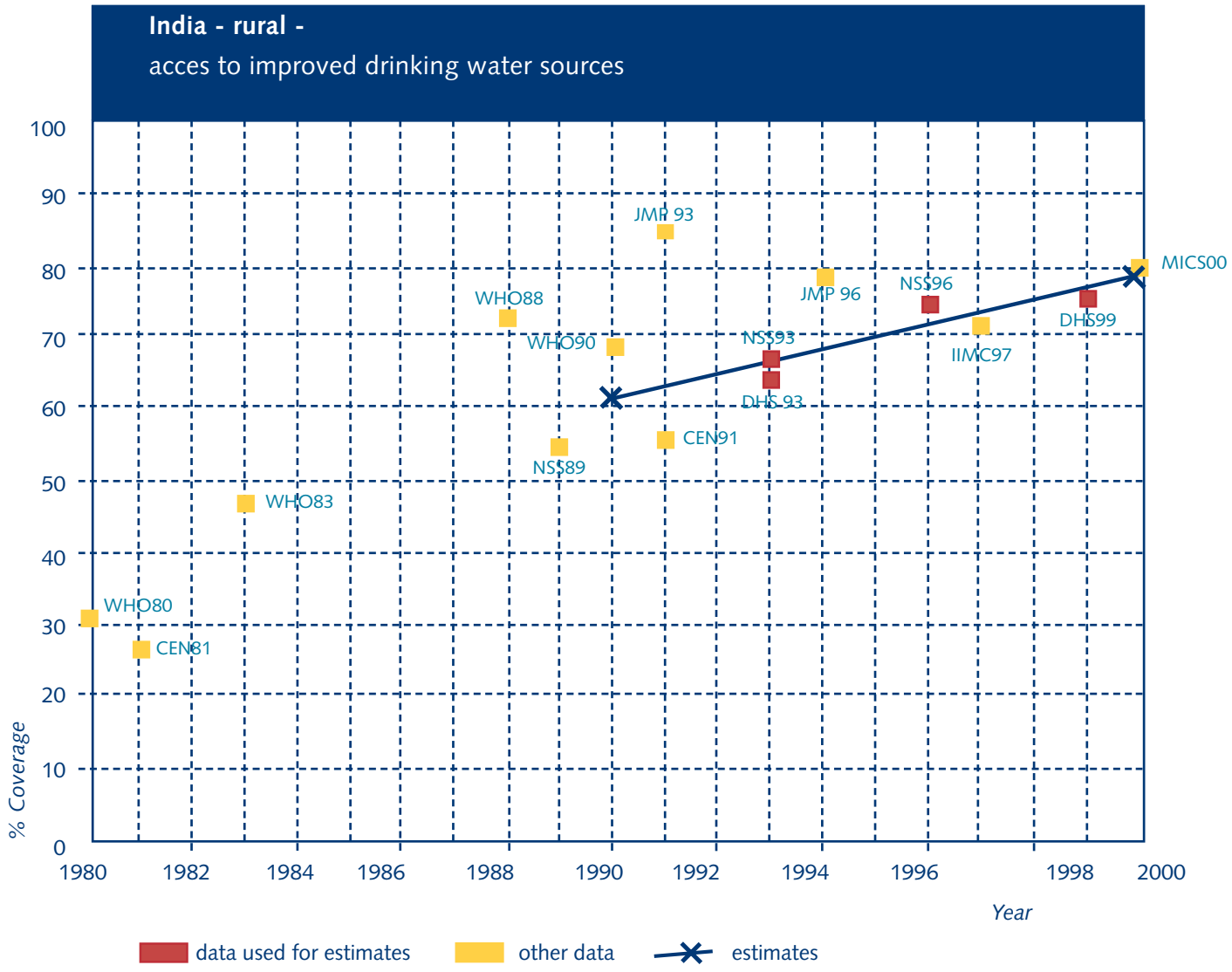
- Reduce margins of error that would confound annual surveys
- Avoid overburdening the national statistics offices which collect the data
- Reduce the survey effects that arise from repeated surveys in households[17].

The World Health Survey was initiated by WHO and in 2002/03 had been conducted by Ministries of Health in 70 countries. It contains water and sanitation data that will be useful for the JMP.

A small JMP team has completed all JMP activities with the equivalent of about 18 person-months of professional staff time annually. They have recently been augmented with the addition of a temporary team member supported by USAID through EHP. For its global assessment (2000), the JMP team managed the final analysis for each country. Coverage estimates from surveys between 1980 and 2000 were plotted on four separate charts: urban water, rural water, urban sanitation and rural sanitation. These charts include data from past WHO questionnaires that were based entirely on information given by providers of services and which tend to be less accurate. All other sources of data are plotted in these charts for comparison and context, but are labelled differently. Electronic country files are prepared presenting all of the information collected from the global assessment questionnaire and existing survey data.

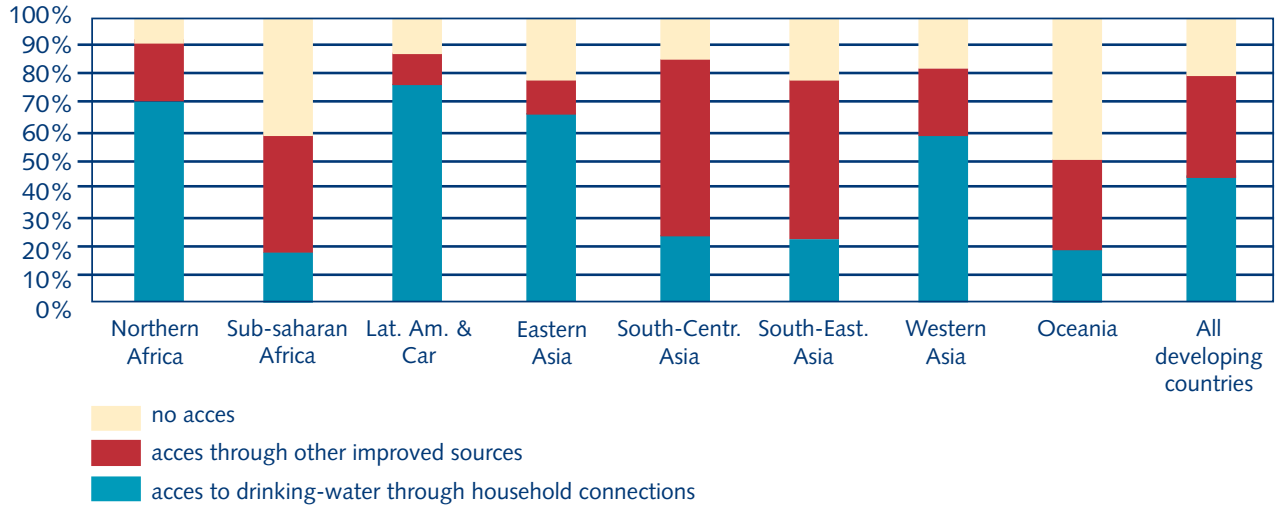
For charts where coverage estimates from surveys are considered adequate, a trend line is drawn that, in the opinion of the review group, best fit the survey estimates over the period 1980-2000. If the estimates from the best-fit line differed substantially from the 2000 estimates provided by the country, the country was asked to review its estimate in the context of the data displayed on the chart. Where no resolution can be obtained, the 2000 estimate derived from the survey data was used. An example is shown below of the estimation of access to improved drinking water sources in India, from the Joint Monitoring Programme.

17 Lenton, Roberto and Write, Albert (coordinators) Interim Report of Task Force 7 on water and sanitation. Millennium Project, New York, p. 41.



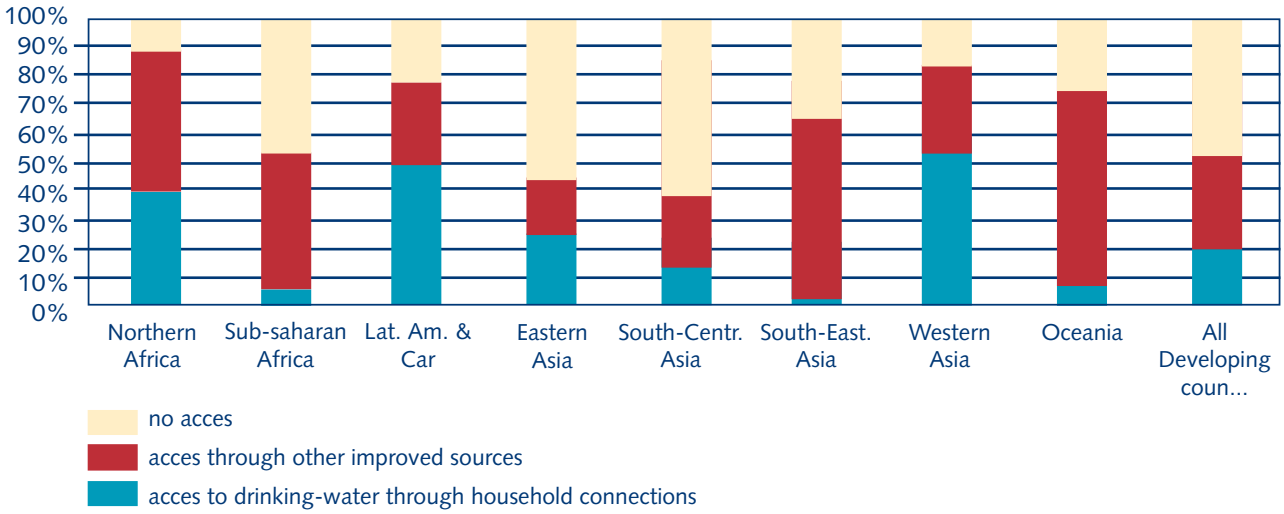
A summary of all the JMP data appears as the WHO-UNICEF publication: Global Water Supply and Sanitation Assessment Report-2000. It covers the world, presenting data from the six regions (Africa, Asia, Europe, Latin America and the Caribbean, Northern America and Oceania)[18]. The figures below provide an example of how JMP information is visualized.

Water supply conditions



Source: Global Water Supply and Sanitation Assessment - 2000 Report

Sanitation conditions



Source: Global Water Supply and Sanitation Assessment - 2000 Report

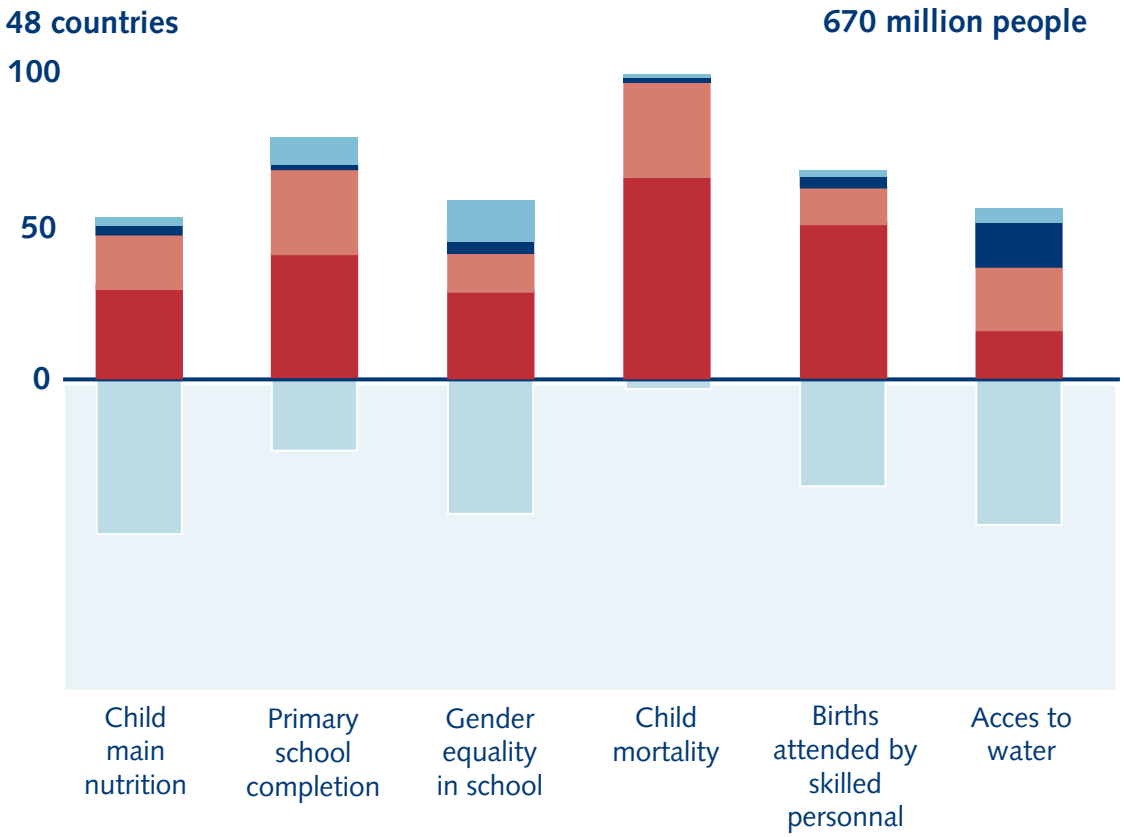
On the basis of international statistics, largely provided by the JMP every five years, with intermediate updates every 2 years, a periodic assessment is made by the United Nations to see which countries are likely to reach the Millennium Development Goals[19]. Much depends on whether the progress in the past decade can be sustained—or accelerated in countries falling behind.

18 http://www.wssinfo.org/en/411_ga2000_en.html

19 http://www.developmentgoals.org/Achieving_the_Goals.htm and UNICEF and WHO. Minutes: First and Second meetings of the Technical Advisory Group of the WHO-UNCIEF Joint Monitoring Programmes for water supply and sanitation. (April 2003, February 2004)

In addition to the data series, answers are also visualized, an example of which is shown below.

Display of selected MDG progress/status for Sub-Saharan Africa



Countries in **blue** made progress in the 1990s fast enough to attain the target value in the specified time period (by 2015 for safe water supply). They are "likely" to achieve the goals.

Countries in **light blue** made progress, but too slowly to reach the goals in the time specified. Continuing at the same rate, they will need as much as twice the time as the "likely" countries to reach the goals. Rated "possible," they need to accelerate progress.

Countries in **soft red** made still slower progress. They are "unlikely" to reach the goals. To reach them, they will need to make progress at unprecedented rates.

Countries in **red**, conditions have worsened since 1990, or they currently stand at very high maternal mortality and HIV/AIDS prevalence. They are "very unlikely" to reach the goals.

And countries in **aqua** lack adequate data to measure progress. Improvements in the statistical systems of many countries are needed to provide a complete and accurate picture of their progress.

3.1.3 Institutional support for global monitoring of the MDGs

Three groups take the lead in supporting global sector monitoring:

- The **Millennium Project Task Force for Water and Sanitation,** based in New York, works to support the achievement of MDGs. It formulates strategies and prepares reports for the UN Secretary General trying to harmonize definitions and capitalize all information and experiences available.
- The **Joint Monitoring Programme (JMP) Technical Advisory Group** provides strategic and technical advice support for the Joint Monitoring Programme.
- The **WSSCC Monitoring Task Force**, based in Geneva, dealing with the Vision 21 targets, proposes a revision of sector monitoring objectives.

Links between these groups are robust, with some joint members and frequent communication.

The Millennium Project Task Force on Water and Sanitation[20]

The core of the Millennium Project's analytical work is guided by Task Forces. One of these, the Millennium Project Task Force on Water and Sanitation, seeks to develop a strategy for meeting the water and sanitation MDGs that takes into account physical, financial and institutional constraints, clearly lays out what needs to be done and how much it will cost, and puts operational strategies at scale but with local specificity. One additional point of consideration by the Task Force is that the 2004 World Development Report intends to investigate how countries can accelerate progress towards the MDGs.

The Millennium Project Task Force on Water and Sanitation has formulated recommendations in their Interim Report of February 2004[21]. These relate, for example, to the need to attend to *sustainability* and *poverty*-orientation in seeking to develop programmes to achieve the MDGs and to measure progress toward their achievement. The Task force has established a sub-group on monitoring. Thus for institutions and bi-lateral agencies interested in improved monitoring of the MDGs, one entry point could be the Task Force.

20 Direct extracts from http://www.unmillenniumproject.org/documents/tf07apr18.pdf

21 Lenton, Roberto and Write, Albert (coordinators) Interim Report of Task Force 7 on water and sanitation. Millennium Project, New York, 140 pp

22 UNICEF and WHO *Joint Monitoring Programme on Water Supply and Sanitation.* Policies and procedures: version 20 February 2004. 9 pp.
UNICEF and WHO. Minutes: First and Second meetings of the Technical Advisory Group of the WHO. UNICEF Joint Monitoring Programmes for water supply and sanitation. (April 2003, February 2004)

The JMP Technical Advisory Group

A JMP Technical Advisory Group (TAG) was established early in 2003 to provide strategic and technical advice. It is composed of technical/monitoring specialists as well as professionals from UNICEF and WHO. The Advisory Group has been active and has helped the JMP, in a relatively short time, to significantly improve its methodologies, enhancing the quality of current JMP work and expanding its scope beyond monitoring coverage by service level. This has included new planning procedures and a thorough review of its database. The JMP Advisory Group also provides a platform for interagency cooperation on sector monitoring[22].

The JMP Advisory Group has formulated robust recommendations related to data quality, methods, definitions, communication and management. One result of this intervention has been the preparation of the JMP Policies and Procedures document providing details of JMP work, to be finalized by June 2004.

Another focus of the Advisory Group's work has been on data dissemination which is being strengthened, with annual reports, tables and country data available from the JMP website and the UNICEF website[23]. Thematic reports and annual reviews will be published. It has been decided that JMP will publish coverage estimates on a yearly basis, and the dataset will be revised every two years, starting in 2004. The JMP Advisory Group has also been supporting the harmonization of basic definitions, as is described in Chapter 4.

The Water Supply and Sanitation Collaborative Council (WSSCC)

Monitoring the progress and impact of *Vision 21* is an important activity for the Collaborative Council, because its independent and impartial status within the water supply and sanitation sector gives it legitimacy to monitor the sector. The Collaborative Council also supports the work of the Joint Monitoring Programme (JMP).

While the goal of improved coverage of safe water supply remains a key objective and will be one of the most important indicators for monitoring, the Collaborative Council also sees safe water as an entry point for sanitation and hygiene, which are needed to create maximum impact on health, education and sustainable development for the poor. For example, safe water close to schools, with improved sanitation, will help boost the attendance of children, especially girls.

23 Childinfo.org - Monitoring the Situation of Children and Women and Welcome to the WHO & UNICEF Joint Monitoring Programme

24 http://www.wsscc.org/load.cfm?edit_id=80

The Collaborative Council's main action points on monitoring are to:

- Define, test and validate a core set of indicators for measuring *Vision 21* implementation,
- Build consensus on methodologies for data collection which can ensure that analysis and reporting reflects the core points of *Vision 21*,
- Encourage the analysis, use and accessibility of generated information, using both electronic and printed dissemination,
- Feed monitoring and assessment results regularly into advocacy campaigns, ensuring consistency in statistics and forecasts.

The WSSCC's Monitoring Task Force has designed and is testing an instrument for monitoring *Vision 21* targets[24].

The WSSCC, in supporting the monitoring of Vision 21 goals, has explicitly introduced a behavioural dimension to international efforts for improved impact of water and sanitation programmes. This also deserves support, and is dealt with in greater detail in Section 5.1 of this report. The WSSCC provides a platform for advocacy and mobilization around the MDGs and their measurement. In this, it is a logical partner for further developments in monitoring. Thus, any further development for MDG monitoring will need to involve both the Collaborative Council and the Millennium Project Task Force on Water and Sanitation as core actors.

3.2 Country Monitoring of the MDGs[25]

At the country level, the assessment of MDGs has a somewhat different emphasis from the processes at the global level. In a country, one of the main uses of MDG monitoring data is the preparation of the MDG report or a review of status. The reports primarily address a national audience in an effort to bring the MDGs "home". The thinking behind this is that global goals and targets have too often remained at a global or inter-governmental level; in too few instances did they make a real difference in terms of domestic policy reforms and hence action. The MDG reports are meant to provide an update and countdown on MDG progress, not necessarily on specific policy recommendations or complex analytical findings. In this, the Millennium Development Goals Report/Review is primarily a tool for public advocacy. It is meant to raise public awareness and social mobilisation on the MDGs to help trigger action.

25 http://www.undg.org/documents/3053-NEW_Guidance_Note_for_MDG_Reports.pdf

Thus, at the country level, MDG Reports or Reviews are meant to help engage decision-makers, as well as to mobilise civil society, communities, civil society organizations and the general public and media in a debate about human development. To date, about 40 MDG country reports/reviews have been issued—available at www.undg.org and www.undp.org. Over 60 are under preparation. Five countries have produced a second report/review—Armenia, Bolivia, Cameroon, Senegal and Vietnam. The plan is for all developing countries to have at least one MDG report/review by the end of 2004.

While the MDG country reports are built on national data, the quality of that data may be perceived as being of less importance than its dissemination and use to stimulate public awareness.

Example of uses of MDG report at national level from Cambodja

- Used report/review to launch a campaign involving a wide range of stakeholders through existing institutional mechanisms (e.g. the National Poverty Forum, business forums etc).

- Used printed, audio & visual media to focus group discussions with, for example, senior government ministers and NGOs.

- MDG report was translated into the Khmer language and was disseminated in regional workshops and seminars throughout the country.

Preparation of the MDG reports

The United Nations Development Programme is responsible for coordinating efforts and supporting the preparation of the national monitoring reports. The UNDP works with staff of other UN and government agencies. To prepare the national reports, consultations are encouraged, but not always held, with relevant country institutions, such as national statistics offices, line ministries, universities, research institutes and NGOs, in order to review the quality of data, including census, administrative reporting systems and household based surveys. In fact, most of the recent MDG Reports were issued jointly by the government and the UN Country Teams, but with limited inputs from institutions such as universities and NGOs. The UNDP is now advocating that its country teams work in closer collaboration with these and other civil society organizations to ensure broad support and consensus around the MDGs.

There is considerable variation in the process, however. For example, the Government of one large country has reportedly decided to have a government agency prepare the MDG report and data, independently of UN agencies.

Indicators used

National reports focus on the MDGs and their targets. Some targets and indicators are tailored to the specific conditions of each country. The MDG country reports must take into account national development priorities; and, thus the targets need to be contextualized. Furthermore, certain dimensions of inequality can be highlighted, such as regional, ethnic and gender disparities. Sub-national comparative data (by state, province or district) have proven to be a powerful tool for public action.

Data sources

The main sources of data for country reporting are periodic household surveys, decennial censuses, and the JMP. Other sources are administrative reporting systems. However, some MDG country reports appear to use a broader range of information than the global MDG monitoring of the UN Statistics Division. For example, country MDG reports might use existing data and analyses contained in documents such as national plans, the WHO-UNICEF Joint Monitoring Programme, Common Country Assessments (CCA), National Human Development Reports (NHDR) and Poverty Reduction Strategy Papers (PRSP). The reports also might draw on research and data collection from research institutions and NGOs. In low-income countries, the coordination between the PRSP process and the MDG is an important issue[26]. (see Annex 3 for list).

MDG country reports

Most MDG country reports contain the following:

- Country specific development context
- For each goal and target, the status of progress to date between 1990 (or closest year with reliable data) and the current year, and the major challenges faced
- A table summarizing the feasibility of meeting targets and the state of national support.

As at the global level, the MDG country reports describe the prospects for each country to reach these targets based on their rate of progress over the last decade. The MDG national reports give answers to the question: "Will the target be met?"

26 http://www.undp.org/mdg/countryreports.html

Answers are given in an illustrated manner by using standardized words, colours and arrows as shown in the table below:

Words	Colours	Arrows
Likely, already met or strong Potentially or good Unlikely or weak No data	Blue Yellow Red no colour	 ?

An example of a country summary table on prospects of achieving the MDGs is shown on the next page. In the table, a new category appears called "basic amenities" dealing with access to safe drinking water. Sanitation does not appear.

Example Status at a Glance
Summary of progress towards the Millenium Development

GOALS/TARGETS	WILL THE GOAL OR TARGET BE MET?	STATE OF NATIONAL SUPPORT
EXTREME POVERTY Halve the proportion of people living below the national poverty line by 2015	Already met	Strong
HIV/AIDS Halt and reverse the spread of HIV/AIDS by 2015	Potentially	Good
HUNGER Halve the proportion of underweight among under-five year olds by 2015	Potentially	Weak
BASIC AMENITIES Halve the proportion of the people without access to safe drinking water	Unlikely	Good
UNIVERSAL PRIMARY EDUCATION Achieve universal primary education by 2015	Likely	Strong
GENDER EQUALITY Achieve equal access for boys and girls to primary and secondary schooling by 2005	Potentially	Weak
MATERNAL HEALTH Reduce maternal mortality ratio by three-quarters by 2015	no data	Weak
CHILD MORTALITY Reduce under-five mortality by two-thirds by 2015	Likely	Strong
ENVIRONMENTAL SUSTAINABILITY Reverse loss of environmental resources by 2015	Unlikely	Weak
OTHER COUNTRY-SPECIFIC GOALS AND TARGETS	Already met	Strong

National Statistical capacity

There are several linkages between national statistical sources and MDG monitoring such as:

- Through the provision of data for the JMP
- The preparation of household surveys, such as the MICS often involves the government, although not necessarily staff from the water and sanitation sector
- Compilation of data for national MDG reports appears to be done by staff from government agencies, the United Nations and sometimes World Bank staff.

The preparation of monitoring information for the JMP and MDGs at national level has also revealed the general weakness of national statistics. It is interesting to see, for example, that many MDG country reports also provide an assessment of national capacity for data collection, analysis and utilization. Three examples from the MDG reports are shown in this table:

	EGYPT: elements of monitoring environment	MOZAMBIQUE: M&E water	KENYA: M&E water
Data gathering capacity	Fair	Weak	Fair
Quality of recent survey information	Weak	Fair	Fair
Statistical tracking capacities	Weak	Weak	Fair
Capacity to incorporate statistical analysis into policy, planning and resource allocation mechanisms	Fair	Weak	Fair
M&E mechanisms	Fair	Fair	Weak

Source: MDG country reports (footnote 9).

Improvements are needed in the statistical systems of many countries. Preparation of the MDG data can lead to operational interventions to improve statistical capacity within national Statistics Offices. Special trust funds are available for this purpose, such as the World Bank's Global Trust Fund for Statistical Capacity Building and UNDP's Thematic Trust Fund for Poverty Reduction.

4. Challenges of MDG Monitoring

Over the past four years, since the inception of the MDGs, a global monitoring system has been created. In the process, some challenges have been surfaced, or have gained wider recognition, related to data definitions, and processes of collection, analysis, as well as the use of information in monitoring the MDGs for water and sanitation. There have also been many "lessons learned". Several of these are listed below, organized around the issues set out in Chapter 2, where monitoring criteria were listed that may help ensure the objectives that MDG monitoring can be attained. These were:

Purposes of MDG Monitoring

1. Tracking: Assess progress toward achieving MDG targets.
   Ensure comparable and well-defined terminology; content validity; quality of the data (timeliness, baseline, questionnaires, sampling); data management and analysis.
2. Advocacy and communication for MDGs.
3. Enable national, international and bi-lateral agencies to
   a. develop policy for poverty reduction,
   b. plan strategies and actions to carry out these policies, and
   c. target the resource allocation.
4. Ensure relevance and sufficient scope of terminology.
5. Provide an opportunity to improve national and international statistics processes for these purposes.

Challenges related to these topics are described below:

1. Purpose of MDG monitoring: Tracking progress toward achieving MDG targets.

- **Definitional issues**: The global data available on the MDG target for *drinking water* are largely drawn from the WHO/UNICEF Joint Monitoring Programme (JMP). For access to *safe drinking water*, the JMP uses as proxy the percentage of the population using *improved water sources* with reference to technology types, whereas the MDG target on water uses the terminology of *safe drinking water.* It has been argued that this difference in terminology reflects both a past misrepresentation, and future uncertainty, in judging and defining services as "safe" in terms of human health. It appears, in addition, that the meaning of "improved" is still an issue. One interpretation has been proposed by a task force on monitoring established by the Water Supply and Sanitation Collaborative Council (WSSCC). According to this *task force, "a person is said to have access to*

"improved" water supply if the person has access to sufficient drinking water of acceptable quality as well as sufficient quantity of water for hygienic purposes."[27] Access to water, arguably, may not always imply that the level of service or quality of water is adequate or safe. However, information currently available does not establish the relationship between access to *safe water* and access to *improved sources*. WHO and UNICEF are currently working to demonstrate this relationship.

– *Sustainable* access is, most unfortunately, not dealt with in the data.

– The terminology chosen for the sanitation target during the 2002 World Summit on Sustainable Development is *basic sanitation*. In contrast, the terminology used in the JMP report is *improved sanitation*. It would appear, though, that in choosing "basic sanitation" as the preferred terminology, the Summit had in mind something more. It linked access to sanitation to improved human health and reduced infant and childhood mortality, making it a broader and more impact oriented definition than was envisaged in the JMP report. This concept of sanitation is not focused on the number of toilets as the target but rather on the creation of a process for improved health and hygiene through basic sanitation. Operationally, the JMP definition is simpler. However, it does not reflect the health risks from poor disposal of sullage or wastewater from domestic sources. The issues of hygiene behaviour and (validated) use of facilities should also be considered[28].

– The definitions used by the MDG Task Force on Water and Sanitation are much broader than those used by the JMP. For example, in contrast to the JMP, which measures stated use of improved water facilities within 1000 metres in rural areas, the MDG Task force defines access to domestic water supply as "access to sufficient drinking water of acceptable quality and sufficient quantity for hygienic purposes."[29] The JMP Advisory Group has recommended that the JMP promote harmonization of these definitions in the UN system[30].

– Definitions have not been standardized within countries or between development agencies. A review of water and sanitation coverage data from the 1980s and the first part of the 1990s showed that the definition of safe or improved water supply and sanitation facilities differed not only from one country to another, but also within countries over time.
– The JMP Assessment 2000 does not provide a standard definition of urban and rural areas. Nor does it include a gender and equity dimension. However, the

27 Direct extract from http://www.unmillenniumproject.org/documents/tf07apr18.pdf

28 Lenton, R., and Wright, A. (coordinators). Interim report of Task Force 7 on water and sanitation.

29 Lenton, Ibid.

30 Unicef and WHO. Ibid.

Global Assessment of 2005 will revise its forms to take some of these issues into account.

- Timeliness: One drawback of these comprehensive surveys is that household surveys are not conducted recurrently in many countries.

- Baselines: Baseline information from traditional government administration sources is, according to observers, of questionable quality. The baseline data before 1990 was often based on estimates by service providers, rather than on the responses of consumers to household surveys, and these estimates differed substantially.

- Harmonization: JMP and UN Habitat have drawn different coverage estimates from urban areas using the same data sets. As recommended by the JMP Advisory Group, they will now try to agree on coverage estimates for urban areas[31].

- Sampling: For household surveys to be replicable by national authorities and institutions, sampling procedures need to be tested and transparent. This might also improve current household surveys used for the MDGs.

- Data analysis: There are some ambiguous categories in the MICS and DHS surveys related, for example, to pit latrines, traditional latrines, wells and springs. For these the JMP applies an estimate of 50%, discounting the number of facilities that can be considered safe. The JMP is now looking into the possibility of applying regional ratios to provide more accurate estimates for these categories[32].

- Survey scope and validity: The quality of household surveys is better than provider data as the household survey examines the current real life situation. Why are household surveys used? There are numerous other sources of data for measuring progress at country level, but many either do not function well enough to give current and quality data, or do not provide the data required for assessing progress. Household surveys are capable of filling many of these data gaps. Using household surveys can, theoretically, also provide more information on functionality and service deficiencies. However…

– Observers have questioned the quality of the information in some of the major surveys. The assessment questionnaires do not include a methodology for discounting coverage figures to capture intermittence or poor quality of water supplies. The instructions in the questionnaires do specify that piped systems

31 UNICEF and WHO. Minutes: Second meeting of the Technical Advisory Group of the WHO.UNICEF Joint Monitoring Programmes for water supply and sanitation. (February 2004)

32 Ibid.

should not be considered functioning unless they were operating at over 50% capacity on a daily basis, and the hand pumps should not be considered functioning unless they are operating for at least 70% of the time with a downtime not exceeding two weeks. These aspects are taken into consideration in some, but not all countries.

– Both of the DHS and MICS surveys ask the following questions of the householder:
What is the main source of drinking water for members of your household?
What kind of toilet facility does your household use?
It may be questioned whether the householders always provide accurate information to such questions in all cases. For example, people who use unsafe water sources (but know they should not) may not give candid answers. The same would be the case for those who are ashamed to say they defecate out of doors. Other householders may believe that by downgrading their answer they may be eligible for better services or toilets.

Following a recommendation from the JMP Advisory Group, the major surveys (DHS, MICS, WHS) are working to harmonize the water and sanitation questions in their surveys.

A limited range of tools has been used in MDG monitoring, usually traditional questionnaires. The data from these is not often validated through, for example, triangulation, using several data collection tools to improve validity of information. In general, there is a pool of monitoring experience which the major agencies involved in monitoring the MDGs have not drawn upon and may be unaware of. For example, the JMP is now exploring the use of a pictorial guide that shows different facilities, drawing upon the recent experience of the World Health Surveys. The use of such pictures in monitoring dates back to the 1980s in this sector[33].

2. Purpose of MDG monitoring: Advocacy and communication for the MDGs.

- MDG communication: Despite the effort being made to develop international platforms for the MDGs and the dissemination of electronic information, communication about the MDGs still needs to be improved. Decision-makers, government institutions, individuals and other stakeholders should have complete access to the data and findings, including those of other countries and international agencies. The JMP Advisory Group, in 2004, has prepared a set of specific recommendations which will improve international access to JMP information through websites, thematic reports and annual reports[34].

33 See, for example: Srinavasan L. 1990. Tools for Community Participation. A Manual for Training Trainers in Participatory Techniques. New York: United Nations Development Programme.

- Use and ownership of monitoring information: Ownership of the MDGs needs strengthening through stronger and perhaps more varied advocacy. As one small part of this, data/information should be processed in user-friendly ways. Data sets should be coupled with simple displays of information that are readily understandable by an educated public.

- Interaction between data-users and data-providers is weak and should be promoted in order to better respond to the needs of policy makers and beneficiaries. It should also be promoted among professionals involved in different types of monitoring. Similarly, there are other related national and international efforts in the water and sanitation sector, such as Poverty Reduction Strategy Papers (PRSPs), Sector Wide Approaches (SWAPs), Integrated Water Resources Management (IWRM), gender mainstreaming, community management and institutional reforms that impact on MDGs. The global effort towards MDGs needs to coincide and/or interact with these other on-going activities, and not duplicate efforts and resources.

3. Purpose of MDG monitoring: Enable national, international and bi-lateral agencies to
- **develop policy for poverty reduction,**
- **plan strategies and actions to carry out these policies, and**
- **target the resource allocation.**

- Data gaps: Unfortunately surveys do not provide all the information needed. It is also difficult to deal with results from household surveys and provider-supplied data, particularly when the two differ. In the DHS survey, only 3 out of 51 items in the household questionnaire are about water and sanitation. In the MICS household questionnaire, 5 items out of 51 are devoted to water and sanitation. On the one hand, the limited amount of data means that it is not difficult to manipulate during analysis. However, many issues are omitted, such as:

– Functioning and O&M of water supply facilities,
– Use of sanitation facilities,
– Hygiene behaviour change,
– Management and cost recovery,
– Water quality,
– Water resource management,
– Who receives services and who is left out (the poor?),
– Gender: in implementation and impact,

34 UNICEF and WHO. Minutes: Second meeting of the Technical Advisory Group of the WHO. UNICEF Joint Monitoring Programmes for water supply and sanitation. (February 2004)

– Sub-national data,
– Sustainability in general.

A significant development has been the decision by the JMP to provide disaggregated information by socio-economic quintiles from the major surveys. This promising initiative adds an all-important poverty orientation to the measurement of the MDGs. It does not appear, at this time, possible to disaggregate the data by geographic area, that is, by sub-region within a country. This is unfortunate as the information would be useful for national planning. One problem appears to be that larger samples are needed to provide regional data[35].

- Scope of monitoring information should be broad enough to provide information needed for action planning: The MDG monitoring and advocacy are meant to lead to action. However, some observers ask: Will the emphasis on MDGs and their monitoring of physical access lead to more construction programmes with insufficient attention to sustainability issues? Are we revisiting some of the programming errors of the 1980s?[36] Equity issues, which loom large in the overall MDGs, such as levels of service to the poor, are not addressed. Current monitoring of the MDGs focuses on quantitative aspects of water supply and sanitation rather, with little attention to such qualitative aspects. There is little or no effort made to search for the reasons behind the quantitative data – or to search for information about the type of interventions that are more effective in reaching goals for sanitation and sustainability issues.

- Coherence: In addition, everyone says that all MDG goals are interrelated, but in fact the implementation of MDGs is still quite compartmentalized. Examples are the separation of gender mainstreaming and good governance indicators from other indicators. In addition, because gender equality is at the heart of reaching the MDGs, sex-disaggregated data are essential for monitoring MDG progress. The same applies to socio-economic disparities for which surrogates can be used such as proportion of households with access to safe water that are located near/not near roads. The challenge is to highlight the most important dimensions of gender and poverty/equity across all goals with valid data.

35 Ibid.

36 See, for example, the e-conference organized by IRC and WEDC on policy and MDGs in the context of FINNIDA programming, November 2003. Accessible via http://www.irc.nl

5. Provide an opportunity to improve statistics capacities for these purposes.

- National statistical capacity: Global and national MDG monitoring is donor-led. The current information systems have limitations that represent significant obstacles in identifying priority actions and monitoring progress. In addition, a major challenge is the capacity of country level institutions to standardize definitions, to collect appropriate and reliable data, and to analyse it on a regular basis. Coordination within statistical systems at national level needs more attention—both to better meet international data demands, and to improve the effectiveness of national statistical capacity. Strengthening national capacity will improve the quality of the current MDG monitoring, and would also be a useful investment in the future of the nation. The country MDG reports provide a departure point for this capacity development as the reports include statistical capacity profiles such as[37] :

– Data gathering capacity: weak,
– Quality of recent survey information: fair,
– Statistical tracking capacities: weak,
– Statistical analysis capacities: weak,
– Capacity to integrate statistical analysis into policy, planning and resource allocation: weak,
– Monitoring and evaluation mechanisms: fair.

37 http://www.undp.org/mdg/countryreports.html

Summary

Global and National MDG Monitoring for Water and Sanitation

Monitoring approach	UN Global Monitoring for water and sanitation
Indicators	Physical: Access to improved water and sanitation. Access within 200m by slum dwellers; 1000m in rural areas.
Data sources	Cluster sample household surveys (MICSS. DHS mainly). national census data
Analysis	WHO-UNICEF Joint Monitoring Programme.
Use of data	Advocacy tool. Actual use at global level not well-defined.
Strengths	Massive. Respected. Attracts attention to sector. Mobilizes UN agencies and nations, bilaterals. Advocacy tool at international level. Identifies weakness in national data capacities to be strengthened. Beginning in 2003 strong efforts to improve quality of data. Harmonize definitions. Enhance "user-friendliness" of data led by JMP Technical Advisory Group.
Weaker points	Gaps in data: Narrow scope of data. Quality of questionnaires. Data validity. Non-comparable definitions. Not informative about most effective actions needed. Issues of timeliness and baseline quality. Currently not strong supporter of national statistical capacity.

Monitoring approach	National Monitoring for water and sanitation MDGs
Indicators	Physical: Sustained access to water and sanitation. Access within 200m by slum dweller.
Data sources	Cluster sample household surveys (mainly UNICEF's MICS. USAID's DHS). National census data. Also provider data. Special UN surveys. Sometimes data from civil society institutions.
Analysis	WHO and UNICEF in country; UN Country Team. Sometimes with government or other national participation.
Use of data	Strong public advocacy purpose. National mobilization for MDGs.
Strengths	Respected. Attracts attention to sector. Can mobilize leadership or public opinion. Can strengthen national commitment to poverty reduction. Water and sanitation issues. Provides learning tools for some groups in country. Can lead to other programmes. e.g.. better statistical management. planning.
Weaker points	Can be adapted for relevance. Quality of data. Not necessarily a priority for government. Non-comparable definitions in country. Not informative about most effective actions needed. Can be misleading about actions needed. Ownership by some governments and some UN groups weak. Dissemination of information effective?

5. Complementary approaches and institutions

There is a large body of experience in monitoring and assessment which, at minimum, should be considered by those involved in MDG monitoring. More effective, however, could be the incorporation of elements from tested approaches and experience into the MDG monitoring at the national, and perhaps international, level. This chapter briefly describes three relevant monitoring experiences developed outside the MDG monitoring activities. These are:

- The monitoring of Vision 21 goals, a programme developed by the London School of Hygiene and Tropical Medicine under the auspices of the Water and Sanitation Collaborative Council. This is in an advanced stage of piloting.
- The Methodology for Participatory Assessment (MPA)/Quantified Information Appraisal (QIS), developed by the Water and Sanitation Program (WSP) of the World Bank and IRC[38] . This has been used extensively for participatory evaluations and appraisals of community managed water supplies.
- WaterAid has undertaken a nation-wide MDG monitoring programme, with the government of Malawi, which links MDG monitoring to programme action.

These examples are provided to indicate the possible benefits of greater coordination and cooperation among different existing monitoring initiatives. Each of the following relates to lacunae which have been described within the MDG programme (specifically, validity, linking monitoring to action, and poverty and gender distinctions).

This chapter ends with information about selected institutional and electronic resources. These resource institutions deserve to be supported and, to the extent possible, helped to cooperate in improving MDG monitoring at all levels.

5.1 Vision 21 monitoring

The London School of Hygiene and Tropical Medicine (LSHTM) has developed an instrument for monitoring Vision 21 targets[39] and has tested it in sub-regions in four countries. The questionnaire which LSHTM has developed and tested deals with five main issues:

38 http://www.wsp.org/pdfs/mpa%202003.pdf

39 WSH Indicators for Vision 21, by Sandy Cairncross and Kristof Bostoen of the London School of Hygiene and Tropical Medicine

- Appropriate hygiene practices such as handwashing, child excreta disposal and drawing of drinking water,
- Access to and use of improved sanitation,
- Access to and use of improved water sources,
- Hygiene education in schools,
- Access to improved sanitation in schools.

The questions are listed in Annex 7. The LSHTM has produced careful definitions for the variables used in its surveys. Examples of these are also included in the Annex.

To apply this protocol, the LSHTM has used some interesting approaches to sampling which seek to limit the number of households surveyed (thus saving time and costs) while retaining a fairly high degree of representativeness between the sample and the universe of households under study. This is one of the few programmes that has looked seriously at the challenges—and opportunities—posed by sampling. Some of the methods and techniques used in this Vision 21 monitoring could, it is felt, be useful for strengthening the MDG country monitoring and improving the quality of national data/definitions. The LSHTM experience is relevant to comments about definitions and sampling in the preceding section.

In another, parallel effort, the Water Supply and Sanitation Collaborative Council (WSSCC) has launched an initiative with the Streams of Knowledge (STREAMS), a coalition of about 80 NGOs around the world. This initiative will try to contribute to achieving the MDGs by focusing on the behaviour of people and institutions, rather than on investments for increasing formal coverage. One aspect of this project will be that the NGOs work with communities and local institutions to make realistic assessments of the current status of the sector on the ground.

Summary: Vision 21 monitoring

Strengths:

- Addresses MDG indicators plus others (example: school hygiene). Provides standard definitions for indicators.
- Has very good sampling framework that has been tested.
- Has a somewhat wider set of tools than traditional questionnaires which are, nonetheless, easy to implement.

Weaker:

- Does not have a training manual, and needs to be applied by a larger set of managers.

5.2 MPA/QIA: quantified participatory monitoring

MDG monitoring uses international statistics and supplementary questionnaire surveys. Participatory monitoring is a different methodology that examines with communities the reasons behind traditional quantitative data, thereby providing insights into the range of actions that should improve sustained access to water and sanitation services. Unfortunately, until very recently, participatory monitoring has not been quantifiable and therefore could not be aggregated over a large number of communities.

However, it is interesting to note that recent efforts to quantify participatory monitoring information have been tested and standardized. Furthermore, participatory monitoring, if carried out as intended, produces information with a high degree of validity which can be useful in triangulating (that is, improving the validity) of traditional data collection, such as that done for the MDGs.

The Methodology for Participatory Assessment (MPA) was developed by the Water and Sanitation Program (WSP) of the World Bank and IRC[40]. MPA assessments have been undertaken in 15 countries. More recently, the MPA protocols have been simplified and reorganized into a package called Quantified Information Appraisal. These are a set of protocols that quantify participatory monitoring for water supply, sanitation, hygiene, water resources management; and they provide a flexible set of management tools for community monitoring.

Indicators covered include, among others:

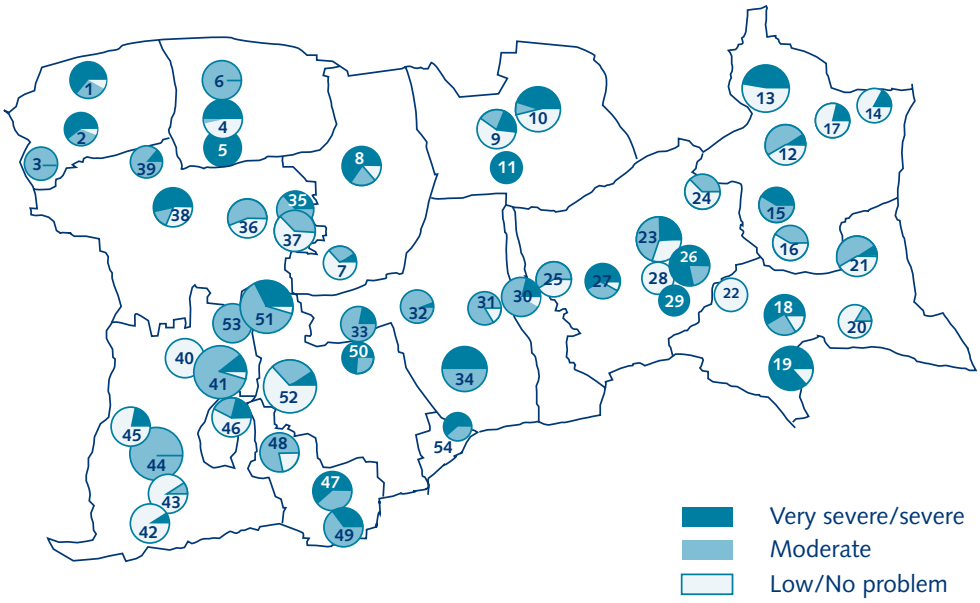
- Access to improved water sources and access to improved sanitation (human excreta disposal, waste water disposal), by major socio-economic groups locally (poor/intermediate/better off) and types of technology and service level—for all households of the sampled communities
- Use of improved sanitation within sample households, by age, sex and continuity
- Adequacy of water quantity for hygienic uses, water quality, reliability by season and socio-economic group.
- Hand washing practices by age, sex and socio-economic groups[41],
- Sustainability of local water management (environmental, financial, technical administrative) and gender and social equity of local management
- Access to improved water supply and sanitation in schools.

The package uses standard PRA tools (such as transect walks, ranking, social

40 http://www.wsp.org/pdfs/mpa%202003.pdf

41 Handling of drinking water in the home will probably be included in the evaluation and monitoring system under development with UNICEF India

mapping, pocket voting) and then converts this information into numbers using a range of standardised scoring methods that generate comparable results across a large sample of stakeholder groups. Tools to manage the monitoring include peer review of scores, use of a database to store and analyse information, stakeholder meetings to validate findings and identify action, and action planning reports. The MPA/QIA is designed for both one-time assessment and continuous monitoring. The findings can be presented using a variety of methods such as frequency diagrams, GIS layouts and web diagrams.



1. Hulikal
2. Vitiampalli
3. Mallikarjunap
4. Chapiri
5. Madhireddipal
6. Chapirithanda
7. Mudigal
8. Borampalli
9. Golla
10. Seebai
11. Pathacheruvu
12. Manirevu
13. Obulapuram
14. Nusikattala
15. Kondapuram
16. Kondapurampai
17. Nusikattalath
18. Thimmasamudra
19. Mangalakunta
20. Kadadarkunta
21. Balavenkatapu
22. Pinjirikottal
23. Muddinayanamp
24. Venkatampalli
25. PTRPalli
26. Mouthikapuram
27. Kaparalapalli
28. PTRDiguvaThan
29. PTRPEguvaThan
30. Varli
31. Kodipalli
32. Mallipalli
33. Thimmaganipal
34. Battuvanipall
35. Ontimidi
36. Kurakulathata
37. Devadulakonda
38. Dodagatta
39. GubanaPalli
40. Garudapuram
41. Yarrampalli
42. Uppuvanka
43. Kotturu
44. Morepalli
45. Papampalli
46. Kurubarahalli
47. Bedrahalli
48. Kamakkapalli
49. Dasampalli
50. Palavoy
51. Mallapuram
52. Narayanpuram
53. Gajulapalli
54. Duradakunta

These methods need not be purely descriptive, for they lend themselves to providing the community with a platform to put forward their views and suggestions and to plan future action.

Summary: MPA/QIA: quantified participatory monitoring

Strengths:

- Can fill the gaps in traditional monitoring approaches,
- Can cover all the MGD water and sanitation indicators (plus others such as gender and poverty),
- Provides information about the reasons behind the quantitative data ("what really happens") and can show the best course for future actions,
- Valid if carried out as intended,
- Rapid collecting and analysis of data,
- Can be used to evaluate quantitative data from standard questionnaires,
- Comparable data across communities.

Weaker:

- Requires well-trained facilitators and is therefore more expensive to initiate than standard questionnaire approaches,
- Requires careful sampling to limit costs and produce representative data,
- Some of the management tools are still quite new and may require further testing,
- Can be threatening to some leaders or to people involved in corruption.

5.3 WaterAid: Monitoring MDG Goals Malawi 2002 report

WaterAid has developed MDG-related assessments in Tanzania, Zambia and Malawi. This brief description from WaterAid outlines how monitoring the physical access to water points in Malawi has clear and immediate implications for national policy[42]. These implications are very different from the traditional approach of improving access by increasing the amount of funding for construction. Although not mentioned in the study below, there were extensive household visits and surveys which added information about functionality/use of water sources and which corroborated the conclusions drawn here.

From WaterAid:

The process of halving the proportion of people without access to safe water by 2015 and reaching the Millennium Development Goal is only meaningful if there is good baseline information from which to start measuring. The Ministry of Water Development (MoWD) in Malawi have stated that currently "there are 17,000 hand pumps capable of serving four million people and 56 rural gravity piped water supply schemes with over 10,000 taps capable of serving 1.2 million". This makes a total of 27,000 water points.

However, the present study is based on a survey carried out within six districts in

42 See http://www.wateraid.org.uk

Malawi covering 18% of the total rural population[43]. By extrapolating the findings of this work to the national level, the actual number of water points is estimated to be 45,000. The fact that the actual number of water points may be 67% higher than MoWD estimates is in itself an indicator of the problems Malawi faces in correctly assessing the needs to achieve the MDG goal.

This study is based on the work of an extensive survey that recorded the condition, type, age, location and provider of over 9000 water points. The location was recorded using Global Positioning System technologies. By using spatial information on population distribution obtained from the National Statistics Office, it has been possible to calculate the 'water point density' (the number of water points per 1000 population) for relatively small areas of land. By analysing the differences in area water point density it has been possible to gain an indication of the equity at which resources have been allocated and to develop a series of indicators, which provide a truer reflection of the state of the water sector in Malawi.

The analysis showed that 41% of the population surveyed had to share a water point with over 500 other people, while 8% of the population had to share with 125 people or less. It was found that targeting resources has not been pro-poor. Unserved communities seem to be repeatedly ignored, while better-served communities seem continually to benefit. The work has enabled us to calculate that 42% of the population are currently unserved by a functioning improved community water point. The target for the MDG is therefore to reduce this proportion to 21% by 2015. By building in expected population growth rates the paper calculates that the minimum number of water points needed to achieve the goal nationally is 13,700 (or an average of 1144 per year for the next twelve years from 2003 to 2015). In hardware terms alone this would cost around US$55 million over the next twelve years.

As the age of each water point was recorded during the survey research, it has been possible to work out how much money has been recently invested in the sector. It was found that US$13.98 million had been invested in the surveyed area over the last five years which extrapolates to around US$77.6 million nationally. Assuming that this level of investment continues, money is not a barrier to reaching the MDG.

Five different resource allocation strategies were modelled and their cost and effectiveness at reaching the MDG assessed. From this work it was found that if the resource allocation is effectively targeted at the unserved areas, the MDG would be achievable even if the level of investment fell to 30% of what it has been over the last five years. However, if the work is not targeted, reaching the MDG will be both

43 Since the time of this report, almost 30% of the country has been covered and the survey continues.

expensive and possibly unachievable. The main barrier therefore to Malawi reaching the MDG is not the level of financial resources available, but the capacity of the water sector to prioritise and coordinate its work so as to target the unserved population effectively.

Summary: WaterAid- Monitoring MDG Goals Malawi

Strengths:

- Can deal with the MGD indicators,
- Leads to action at the national level,
- Has shown itself to provide valid baseline data,
- Is simple to understand and uses simple tools,
- Focus on equity.

Weaker:

- Requires some dedication, time and sufficient staff,
- Would have to be adapted to other countries or regions.

5.4 Other institutional and electronic resources for MDG monitoring

Many institutions and groups are working to improve the quality and utilization of MDG monitoring, and statistics capacity in general. A small selection of the UN-related institutional resources is described below. In addition, not listed but potentially very useful, are the national and international NGOs, academic institutions and other groups within the rubric of civil society.

Electronic support resources

Since 2000, a large number of sites have been created that promote the MDGs and also allow for exchanges of information and experiences. The open exchange of information is one of the most powerful tools for increasing the power of partnership. A network called MDG Net has been promoting the exchange of information on MDGs, with bi-monthly updates and research activities on monitoring and aid coordination. MDG Net has over 1000 members, is led and hosted by UNDP, and supports all UN and related staff working on MDG reporting. Since its launch in January 2002, the network has held lively discussions on the definitions of MDG indicators, ways to create national consensus around a set of targets and indicators, and creative approaches to publicity for launching the MDG country reports. The network may also be used to circulate draft reports, share

44 http://www.undp.org/surf-wa/mdgforum/documents/brochure_MDGNet.htm

lessons learned, exchange information on workshops, and identify expertise to help with the preparation of MDG reports. The potential of the MDG-Net[44] for electronic networking, outreach and information exchange deserves support. It provides an opportunity for global level actors to join forces with their partners at the country level.

The UNDG web-site, DevLink (www.undg.org), hosts the resource corner for the MDG Net, where many resources and reference materials are posted along with an updated status table on the MDG Reports, a short list of relevant experts and a summary of discussions. At DevLink, it is also possible to view all the MDG Reports and other relevant materials published so far. The UN is also supporting DevInfo software for storing, retrieving and displaying MDG data in tables, charts and maps, to inform and mobilising government, media, CSOs, and communities. DevInfo will reach all UN Country Teams in early 2004. It is interesting to note that this software does not seem to be offered to national statistics units.

The websites of international agencies shown below provide information for monitoring progress toward the goals.
International Monetary Fund (IMF)
Partnership in Statistics for Development in the 21st Century (PARIS21)
United Nations Centre for Human Settlements (Habitat)
United Nations Children's Fund (UNICEF)
United Nations Development Programme (UNDP)
United Nations Development Group (DevLink)
United Nations Environment Programme (UNEP)
United Nations Statistics Division (UNSD)
The World Bank Group's Data and Statistics
World Conservation Union (IUCN)
World Health Organization (WHO)

Statistics capacity

The following box provides information about four groups devoted to enhancing the capacity and quality of statistics. For donor and bi-lateral institutions, further support for these groups could logically provide a vehicle to support MDG monitoring. The JMP and similar groups could help link national institutions to these resources.

Resources for development statistics

Data Quality and Effectiveness

General Data Dissemination System (GDDS)

The GDDS is a framework for assessing national statistical systems and promoting improved dissemination and effectiveness that has been developed by the IMF, in close collaboration with the World Bank. It (i) encourages countries to improve the quality of official statistics; (ii) provides a framework for evaluating need for data improvement and setting priorities for statistical development; and (iii) guides participating countries in the public dissemination of comprehensive, timely, accessible and reliable economic, financial and socio-demographic statistics. Water is one item under "lack of access to basic services".

Data Quality Assessment Framework (DQAF)

The DQAF has been developed by the IMF, in collaboration with the World Bank as a methodology for assessing data quality that brings together best practices and internationally accepted concepts and definitions in statistics, including those of the United Nations Fundamental Principles of Official Statistics and the GDDS. It facilitates a comprehensive view of data quality, one that recognizes interrelations, including tradeoffs, among elements of quality and allows emphases to vary across data categories and uses/users.

Statistical Capacity Building

Partnerships in Statistics for development in the 21st century (PARIS 21)

The PARIS21 Consortium was set up in 1999. It is a world-wide partnership, involving government agencies, international organizations, professional bodies and academic institutions. It aims to boost statistical capabilities in developing and transition countries, by promoting a culture for setting and monitoring policy based on evidence, and by fostering well-managed national statistical systems that use resources effectively. As part of this work, Bolivia, Cambodia, Cameroon, Malawi, Moldova, and Pakistan have been identified by the Task Team as candidates for case studies. This exercise will identify strategic actions that can be implemented by both countries and the international community, so that capacity to report progress towards national and international development goals can be improved.

Trust Fund for Statistical Capacity Building

The Trust Fund for Statistical Capacity Building (TFSCB) is a global funding facility, managed by the World Bank on behalf of donors, to strengthen the capacity of statistical systems and to make investments at the national, regional and global levels. The aim is to improve the collection, processing, analysis, storage, dissemination and use of timely, good quality statistics to support poverty reduction and economic and social development.

6. Recommendations

Monitoring of water supply, sanitation and to a lesser extent hygiene has evolved over a considerable period. Parallel to this, existing institutions and newer groups have committed themselves to the MDGs and to monitoring progress toward achieving them. New insights and methods in monitoring have been developed and have been tested in the field. The potential exists for MDG monitoring to benefit from these institutions, groups and developments to a greater extent than is currently the case. However, this depends on which area one wishes to focus. Indeed there are several possible ways to support the monitoring of MDGs by:

- Strengthening national statistical capacities for monitoring and national capacities to utilise monitoring information,
- Supporting coordination, information sharing, cooperation at national level,
- Strengthening global monitoring in general and the JMP in particular.

6.1 Strengthen statistical capacity

Recommendation: The need to strengthen capacities at country level is well recognized. The focus of such capacity building should be on strengthening:

- Data gathering capacity,
- Quality of survey information,
- Statistical tracking capacities,
- Statistical analysis capacities,
- Capacity to transform statistical analysis into effective recommendations for policy, planning and resource allocation,
- Monitoring (of the monitoring) mechanisms.

Relevant resources for this include specialist institutions for strengthening statistical capacities such as the Trust Fund for Statistical Capacity Building. The challenge here is to provide sufficient support to these institutions and to bring the various groups together at country level, to reach agreement on how these capabilities can be used to the benefit of MDG monitoring.

Recommendation: Another priority is to continue the effort launched in 2003 to guarantee the quality of MDG information about water and sanitation. Specifically, this implies ensuring the content validity of the current MDG system through good supervision of current data systems as well as through triangulation using other monitoring approaches. Both approaches require coordinated effort.

Coordinated efforts launched to improve the quality of MDG monitoring information in the sector will also have the advantage of improving the discipline of monitoring

per se. The argument has been made that interventions in support of MDG monitoring should cover all countries, rather than focusing on a small number. However, it may be necessary to develop coordinated interventions in a limited number of four to ten countries in order to test and refine the most cost-effective approaches. The JMP and its Technical Advisory Group, the United Nations MDG Task Force and WSSCC Task Force on monitoring are the current platform for this at the international level. The logical linkages in countries are for national governments to take the lead, supported by the UNDP country teams.

6.2 Linking MDG monitoring to action planning

Current monitoring of MDGs does not usually provide information in sufficient depth for action planning to set policy, determine strategies and target finance to achieve the MDGs for the water and sanitation sector. Currently, monitoring gives reports limited to the percentage of the population with access to improved water and sanitation facilities. This tends to imply that programmes for construction should be accelerated to increase this percentage. In fact, however, current construction programmes may need to be changed, rather than accelerated. Action planning implies that more effective (and less costly) interventions may achieve the MDG goals by focusing on issues such as selecting sites for water where poor people live, providing greater support to community management and, for sanitation, improving the demand creation aspects of programmes.

In particular, MDG monitoring can support these needs by providing more information about who is left out of service provision, and where, about equity of access, sustainability, quality of water, management blockages and about safe and consistent hygiene practices. This information could simultaneously improve the water and sanitation aspects of documents such as PRSPs, CCAs and so on. Those institutions involved in MDG monitoring can support action planning at the national level by providing a platform where national authorities and civil society organizations can examine user-friendly information from points of view that lead to new ways of thinking about the strategies needed to achieve poverty-oriented goals.

Recommendation: It is of paramount importance to ensure the use of monitoring information which implies a need to strengthen capacities to integrate the results of statistical analysis into policy, planning, resource allocation and subsequent monitoring.

Interesting survey instruments exist which allow for triangulation and validation of national statistics. These also allow for the collection of additional information which links data to action. The preparation of a new national baseline focusing on access,

functionality and equity for Malawi, facilitated by WaterAid, is a highly relevant example of this. Some observers have suggested that the PRSPs are also relevant tools. However, the majority of the PRSPs do not prioritize water or deal with sanitation.

At the national level, the effectiveness of MDG monitoring can be enhanced by combining quantitative and qualitative monitoring to gain greater understanding about the issues behind the figures, to bring out equity issues and to develop mechanisms and processes of feedback for action planning. For sampling, it should be possible to agree basic guidelines and quality standards through expert discussion and country workshops.

Recommendation: There is a need and an opportunity to make use of relevant experiences with monitoring by applying methodologies that focus on a wider range of variables such as access to service by the poor, management, functionality, behaviour and use of water and sanitation services, largely with a view to linking monitoring to action.
The MDG Task Force 7 has noted: "Rapid appraisal techniques are likely to prove a good and cost-effective alternative to household surveys to assess particular water, sanitation and hygiene problems in specific sub-regions.[45]" Through quantified participatory rapid appraisal, it is possible to make surveys participatory, and involve women and poor people in data collection, analysis and action. Further development and testing is required on sampling. More information on costs is needed for both conventional surveys and participatory monitoring. Relevant action here would be to review existing research/monitoring data from other sources, as mentioned above, and, to develop a number of national or sub-national exercises for participatory/qualitative monitoring which are triangulated with current data and can help focus attention on the optimum direction of water/sanitation programming within the nation. Examples are Vision 21 monitoring and the MPA/QIA.

6.3 Collaboration between programmes and projects at country level

Recommendation: Most countries have a substantial number of programmes and projects that either concentrate on water, sanitation and hygiene or contain these components. These may be in the governmental or non-governmental realm or exist as cooperative projects between governments, civic society and/or the commercial sector. It is easy to say that all these actors need to cooperate on MDGs, but this is not so easily done. The most realistic path would perhaps be to create opportunities

45 Lenton, Roberto and Write, Albert (coordinators) Interim Report of Task Force 7 on water and sanitation. Millennium Project, New York, p.42

for staff and researchers involved in data collection and analysis to meet and to discuss the proposed conceptual and methodological approaches, and to test survey methodologies.

6.4 Standardising definitions and expansion of indicators (country level)

There is a great need for agreement among all sector programmes within a country on how to monitor critical indicators including the MDGs. Standardization of core definitions at the national level, while still allowing for regional variations, would have the salutary effect of making data from various departments and agencies comparable within countries. One major challenge is to agree on the terminology for sustained access for both water and sanitation, the operational meaning of agreed terminologies, and on the best methods of measurement at country and international levels. This discussion is already going on in some countries, where the core actors can play a major role in bringing arguments, conclusions and recommendations together in a conceptual discussion note. The right platforms here are the governmental departments and UNDP MDG teams at country level. The UNDP-centred MDG Monitoring Teams at the country level and the MDG Net would be well-placed to facilitate subsequent discussions with governments, civil society and with academia within the countries to help adjust national definitions and methods of baseline/progress measurement that follow from the discussion. Experience at national level and of international NGOs can be relevant, in particular the recent efforts of WEDC to facilitate the standardization of definitions between departments within the Government of Uganda.

Recommendation: Standardization of definitions and expansion of indicators is needed while, at the same time, recognizing the need for flexibility to ensure relevance to the country situation. This can be undertaken by systematically bringing together the relevant stakeholders within a country at national level to harmonize their efforts.

6.5 International platforms

In this review, MDG monitoring has been described and analysed as it exists at present. However, the scene is shifting quickly with considerable attention being given to:

- Developing clear and common definitions and working on definitions that move beyond access to improved technology, to encompass sustained access to safe water and sanitation,

- Harmonizing survey instruments. A sub-group of the JMP Technical Advisory Group has compared the main survey instruments used so far and has prepared recommendations for standardized survey questions and response categories as well as definitions for the main survey instruments (MICS, DHS),
- Improving certain aspects of the analysis,
- Making information from the JMP readily available and expanding this through thematic papers, annual reports, descriptions of procedures.

Any further development of MDG monitoring will need to involve the international platforms as core actors:

- The Joint Monitoring Programme and its JMP Technical Advisory Group,
- MDG Task Force for water and sanitation and its monitoring sub-group, both of which will hopefully continue beyond their current expiration date of mid-2005,
- WSSCC Monitoring Task Force.

The robustness of these groups is undoubtedly in part a function their joint membership of professionals from UN agencies together with specialists from academic institutions and international NGOs.

A "panel of eminent persons" on water and sanitation has been recently established by the United Nation's Secretary General. Given the large number of actors and institutions relating to the MDGs, the Panel will need to develop its strategy and work plans judiciously. Hopefully they will include consistent support for the current monitoring initiatives of the JMP and its Technical Advisory Group. There is a need for such a Panel to assess policies and actions at the national and international levels to enable change to poverty-oriented MDGs, beyond merely using financial resources for 'business as usual'. Lastly, the focus of such a group should be to strengthen actions, including monitoring, at the national level.

Other institutions and groups may also deserve to be involved. These include: the PARIS21 consortium and the Trust Fund for Statistical Capacity Building, the Data Quality Assessment Framework (DQAF) and the General Data Dissemination System (GDDS). The MDG-NET provides an opportunity for global level actors to join forces with their partners at the country level.

Recommendation: A logical step would be to continue the current set of meetings between the relevant platform(s) and the concerned researchers for further discussions of the range of methods, definitions and studies, to investigate the value and functions of different data collection approaches, to ensure the validity (by triangulation) of current tools. The focus should be to seek workable strategies to create real change, rather than the needs and interests of particular institutions. This may include, among other things, testing value and functions in the field.

The JMP was initiated to provide the first systematic information about global water and sanitation coverage. Now it is being called upon to monitor the achievement toward specific, yet broader international goals. Much of the work at the global level has fallen on the shoulders of the small JMP team. It has recently been augmented by one person. Given its current size and resources, it is not obvious that the JMP can properly address all the recommendations provided by its own Advisory Group, by the MDG Task Force for water and sanitation or in reports such as this.

Recommendation: Further support for the existing Joint Monitoring Programme mechanism is needed. At present the JMP operates on the basis of limited financial input and manpower compared to the task at hand. Financial resources from international or bilateral institutions would be well used to support the JMP. Strengthening JMP resources may be a necessary condition to:

- Focus on measuring sustainable access to safe services,
- Provide high quality data that is disaggregated by socio-economic level, gender, and geography,
- Collaborate with other organizations and institutions to collect, analyze and disseminate crucial information which is not available through the standard survey mechanisms currently used,
- Continue to promote comparability of data, harmonizing key definition among surveys and within the UN system,
- Promote participation of governments and civil society institutions in providing and effectively using information from its monitoring,
- Act as an intermediary to link national statistical offices to resources for capacity building (see chapter 4 and section 5.4).

A useful caveat was stated by the MDG Task Force for water and sanitation. There is a need to strike a workable balance between what is desirable to measure and what is possible to measure, and cost is an important variable in this exercise[46]. However, even to achieve its potential within the category of "what is possible to measure" the JMP deserves further support and resources.

46 Lenton, Roberto and Write, Albert (coordinators) Interim Report of Task Force 7 on water and sanitation. Millennium Project, New York, p.40

Annexes

Annex 1: References to MDGs on the Internet

Country MDG Reports

Overall web page: http://www.undp.org/mdg/countryreports.html
Guidance note: http://www.undg.org/documents/3053-NEW_Guidance_Note_for_MDG_Reports.pdf
Albania: http://www.undp.org/mdg/AlbanianResponsetoMDGs2002.pdf
Armenia: http://www.undp.org/mdg/MillenniumgoalsARMENIA2001.doc
Benin: http://www.gouv.bj/textes_rapports/rapports/index_top.php
Bhutan: http://www.undp.org.bt/Millenium%20Development%20Report%20PDF%20files/MDGR%20complete.pdf
Bolivia: http://www.nu.org.bo/Metas2-Esp.pdf
Bosnia Herzegovina: http://www.undp.org.bt/Millenium%20Development%20Report%20PDF%20files/MDGR%20complete.pdf
Bulgaria: http://www.undp.bg/en/homepage_files/mdg/report.php
Cambodia: http://www.undp.org/mdg/Cambodia.pdf
Cameroon: http://www.undp.org/mdg/Cameroon2ndMDGEnglish.pdf
Chad: http://www.undp.org/mdg/Chad.doc
Egypt: http://www.undp.org/mdg/egypt.pdf
Guatemala: http://www.undp.org/mdg/guatemala.pdf
Guinea: http://www.undp.org/french/mdg/mdgguinea.doc
Kazakhstan: http://www.undp.kg/english/publications.phtml?l=0&id=68
Kenya: http://www.undp.org/mdg/kenya.pdf
Lithuania: http://www.undp.org/mdg/lithuania.pdf
Mauritius: http://www.undp.org/mdg/mauritius/mauritius.pdf
Mozambique: http://www.undp.org/mdg/MozambiqueMDGreport.pdf
Nepal: http://www.undp.org/mdg/nepal/goal7.pdf
Palestine territory: http://intranet.papp.undp.org/public/files/content/mdgr%20final%20version.pdf
Philippines: http://www.undp.org/mdg/phil.pdf
Saudi Arabia: http://www.undp.org/mdg/saudi.pdf
Senegal: http://www.undp.org/french/mdg/MDGsenegal-f.doc
Tanzania: http://www.undp.org/mdg/Tanzania.pdf
Vietnam: http://www.undp.org/mdg/VietNam.pdf

Millennium Declaration: http://www.un.org/millennium/declaration/ares552e.htm

Related links:
http://www.paris21.org/betterworld/
http://www.adb.org/Documents/Books/Key_Indicators/2003/mdg_xls/Goal07.xls
http://www.un.org/millenniumgoals/MDGs-FACTSHEET1.pdf
http://www.un.org/millenniumgoals/MDGs-FACTSHEET2.pdf
http://www.unmillenniumproject.org/documents/tf07apr18.pdf
http://www.wsscc.org/load.cfm?edit_id=297
http://www.undp.org/hdr2003/pdf/hdr03_overview.pdf
http://www.undp.org/hdr2003/pdf/hdr03_backmatter_1.pdf
http://www.undp.org/hdr2003/pdf/presskit/HDR03_PKE_MDGstat.pdf
http://www.undp.org/hdr2003/pdf/presskit/HDR03_PR1E.pdf
http://www.undp.org/hdr2003/pdf/hdr03_MDG_tables.pdf
http://www4.worldbank.org/afr/poverty/databank/survnav/help_en.cfm
http://www4.worldbank.org/afr/stats/pdf/cwiqloop.pdf
http://www4.worldbank.org/afr/stats/pdf/annex2.pdf
http://www.measuredhs.com/methodology/methodology.cfm
http://unstats.un.org/unsd/mi/mi_goals.asp
http://unstats.un.org/unsd/mi/mi_series_results.asp?rowID=670
http://www.developmentgoals.org/
http://www.developmentgoals.org/Achieving_the_Goals.htm
http://www.adb.org/MDGs/default.asp
http://www.adb.org/Documents/Books/Key_Indicators/2003/mdg_pdf/goal07.pdf
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Annex 2: References for Participatory Monitoring

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Johnson, Hazel, & Mayoux, Linda (1998). 'Investigation as empowerment: Using participatory methods'. In: *Alan Thomas, Joanna Chataway, & Marc Wuytz (Eds.), Finding out fast: Investigative skills for policy and development* (pp. 147-171). London: Sage Publications & The Open University.

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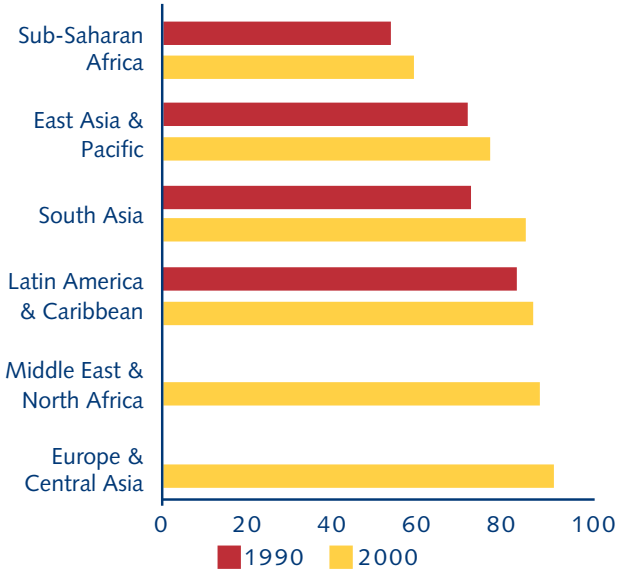
Annex 3: Global data showing evolution for water and sanitation

Clean water contributes to better health

Lack of clean water and basic sanitation is the main reason diseases transmitted by faeces are so common in developing countries. In 1990 diarrhoea led to 3 million deaths, 85 percent of them among children. Between 1990 and 2000 about 900 million people obtained access to improved water sources, gains just sufficient to keep pace with population growth. An improved water source is any form of water collection or piping used to make water regularly available. It is not the same as "safe water," but there is no practical measure of whether water supplies are safe. Connecting all households to a reliable source of water that is reasonably protected from contamination would be an important step toward improving health and reducing the time spent collecting water.

Change in the proportion of people with access to safe water

Population with access to an improved water source (%)



Source: World Health Organization, UNICEF, and World Bank staff estimates

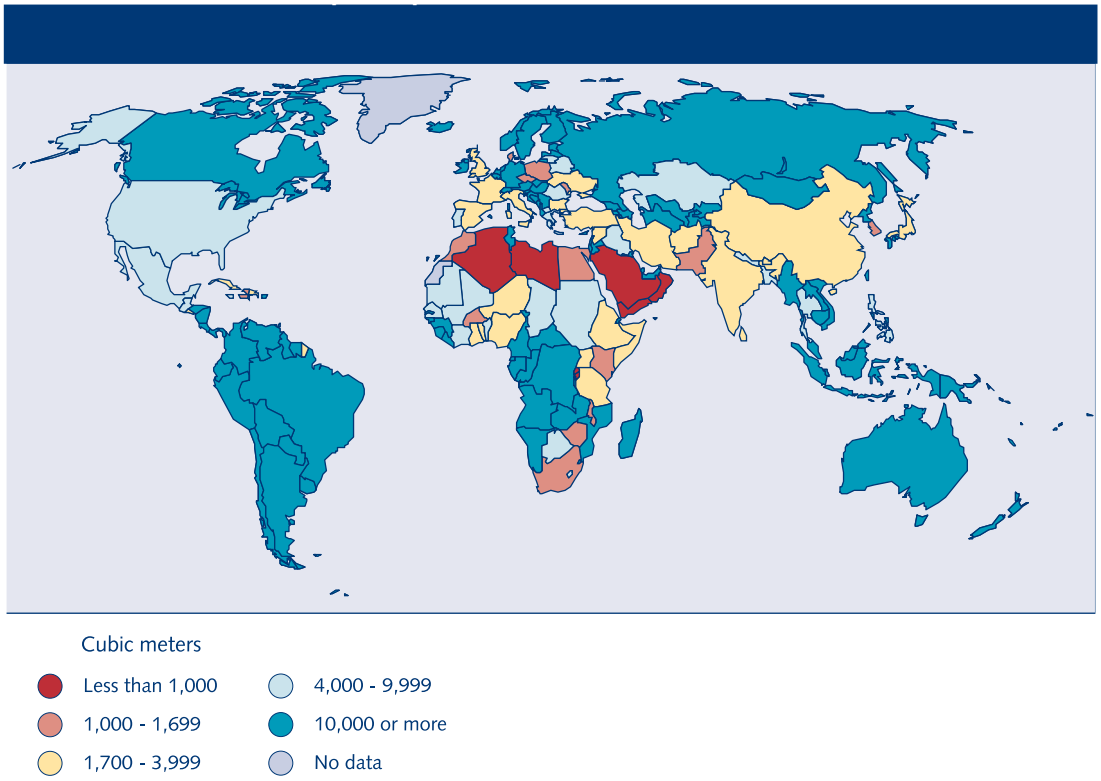
More people have access to safe water compared to 10 years ago. But, in 2000, 1.2 billion people still lacked access to an improved water source, 40 percent of them in East Asia and Pacific and 25 percent in Sub-Saharan Africa. Meeting the Millennium Development Goals will require providing about 1.5 billion people with access to safe water and 2 billion with access to basic sanitation facilities between 2000 and 2015.

Water in higher demand

Each year 80 million additional people will tap the earth's water. In the past century, global water withdrawals have increased almost tenfold. Some countries have abundant, untapped stores of water to support growth well into the future. But

others are already using most of their water, and major increases in supplies will be expensive. Far from plentiful, rural water has to be shared by the growing cities, the burgeoning rural areas, and a thirsty environment.

Many in the Middle East and North Africa suffer from lack of freshwater

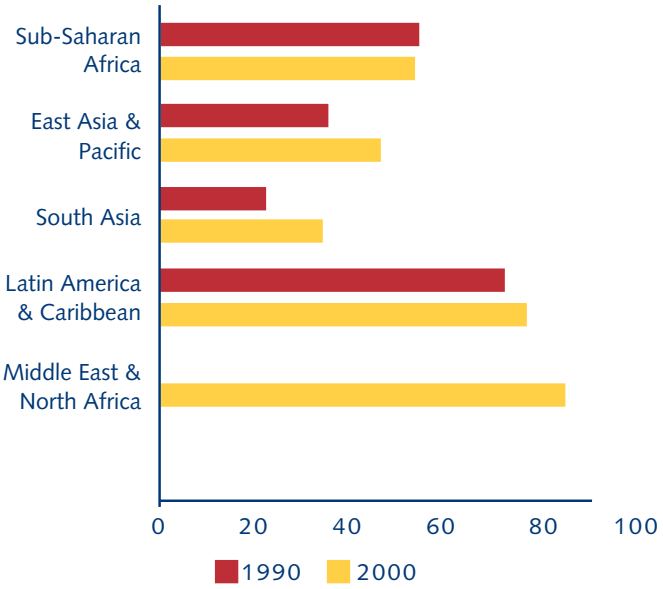


This diagram, Freshwater resources per capita, 2000, refers to total renewable resources, which include internal flows of rivers and groundwater from rainfall in the country, and river flows from other countries. Freshwater resources per capita is calculated using the World Bank's population estimates.

Improved sanitation reduces health risks

As well as safe water, improved sanitation services and good hygiene practices are needed to reduce the risk of disease. Access to basic sanitation system provides disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Such systems do not, however, ensure that effluents are treated to remove harmful substance before they are released into environment.

Share of population with acces to improved sanitation facilities



Source: World Health Organization

Change in the proportion of people with access to improved sanitation

Over the period 1990-2000, access to improved sanitation increased globally from 51% to 61%, resulting in 1 billion additional people with access to sanitation. Despite these gains, about 2.4 billion people, 80% of them in Asia, still lacked access in 2000. The gap between rural and urban areas remains extremely wide, especially in Eastern and South-central Asia. Here, coverage in rural areas is only about one quarter of the population, while urban coverage is 70%. Halving the proportion of the world's population without improved sanitation by 2015 will require reaching an additional 1.7 billion people, a challenge for greater financing and more effective sanitation programs.

Slum dwellers exposed to high risks and deprivation

Slums are the sites of the most acute urban poverty, and of physical and environmental deprivation. Approximately one-third of the urban population globally currently live in such conditions. Typically, slums grow up in developing countries as unplanned informal settlements where access to services is minimal to non-existent and where overcrowding is the norm. Slum conditions place residents at a higher risk of disease, mortality and misfortune. 94% of the world's slum dwellers live in developing regions; the regions experiencing the most rapid growth in urban populations and with the least capacity to accommodate this growth. Where available, trend data indicate that this problem is worsening. UN-HABITAT estimates that there are currently 924 million slum dwellers in the world and that, without significant intervention to improve access to water and sanitation and to create secure tenure and adequate housing, this number could grow to 1.5 billion by 2020.

Annex 4: Demographic and Health Surveys (DHS) [48]

Demographic and Health Surveys (DHS) are funded by USAID and implemented by a private corporation known as Macro International. The DHS are nationally comprehensive household surveys with large sample sizes that are typically between 5,000 and 30,000 households. They provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health and nutrition. Their household surveys include questionnaires on sources of drinking water and toilet facilities. Typically, DHS surveys are conducted every 5 years, to allow comparisons over time. Survey results from 67 countries are available on the DHS website http://www.measuredhs.com/.

The core DHS questionnaire emphasizes basic indicators and flexibility. Use of a standardized core questionnaire allows for comparisons across different countries. Special modules can also be added to questionnaires in order to meet host-country and USAID data needs. The standard DHS+ survey consists of a household questionnaire and a women's questionnaire. A nationally representative sample of women age 15–49 is interviewed.

The household questionnaire contains information on the following topics:

- Household listing: For every usual member of the household and visitor, information is collected about age, sex, relationship to the head of the household, education, and parental survivorship and residence.
- Household characteristics: Questions ask about the source of drinking water, toilet facilities, cooking fuel, and assets of the household. In areas with a high prevalence of malaria, questions about the use of bed nets in the household are added.
- Nutritional status and anaemia: The height and weight of women age 15–49 and young children are measured to assess nutritional status. For the same individuals, the level of haemoglobin in the blood is measured to assess the level of anaemia.

The women's questionnaire contains information on several topics, and the following are linked directly or indirectly to water, sanitation and health:

- Background characteristics: Questions on age, marital status, education, employment, and place of residence provide information on characteristics likely to influence demographic and health behaviour.
- Children's health: Questions examine immunization coverage, vitamin A supplementation, and recent occurrences of diarrhoea, fever and cough for young children and treatment of childhood diseases.
- Status of women: The questionnaire asks about various aspects of women's empowerment, including decision making and autonomy, and about attitudes to domestic violence.

48 http://www.measuredhs.com/aboutsurveys/dhs_surveys.cfm

Items from Demographic Health Survey about water and sanitation			
21	What is the main source of drinking water for members of your household?	Piped water Piped into dwelling 11 Piped into yard/plot 12 Public tab 13 Water from open well Open well in dwelling 21 Open well in yard/plot 22 Open public well 23 Water from covered well or borehole Protected well from welling 31 Protected well in yard/plot 32 Protected public well 33 Surface water Spring 41 River/Stream 42 Pond/Lake 43 Dam 44 Rainwater 51 Tanker truck 61 Bottled water 71 Other 96 (SPECIFY)	> 23 > 23 > 23 > 23 > 23 > 23 > 23 > 23
22	How long does it take you to go there, get water, and come back?	_____ Minutes _____ _____ On premises 996	
23	What kind of toilet facilities does your household have?	Flush toilet 11 Pit toilet/Latrine Traditional Pit toilet 21 Ventilated improved pit (VIP) Latrine 22 No facility/Bush/Field 31 Other 96 (SPECIFY)	> 25

Annex 5: Multiple Indicator Cluster Surveys (MICS)[49]

In 1998, UNICEF embarked on a process of helping countries assess progress for children at end of the decade in relation to the **World Summit for Children** goals (New York, 1990). The mid-decade assessment led to 100 countries collecting data using the Multiple Indicator Cluster Surveys (MICS), household surveys developed to obtain specific mid-decade data, or via MICS questionnaire modules carried by other surveys. By 1996, 60 developing countries had carried out stand-alone MICS, and another 40 had incorporated some of the MICS modules into other surveys. There are numerous other sources of data for measuring progress at country level, but many either do not function well enough to give current and quality data, or do not provide the data required for assessing progress. Household surveys are capable of filling many of these data gaps.

The list of global indicators being used to assess progress at the decade end was developed through extensive consultation, both within UNICEF, particularly with Programme Division and the Regional Offices, and with WHO, UNESCO and the ILO.

The development of the end-decade MICS questionnaire and manual has drawn on an even wider spread of organizations than the mid-decade MICS. They include WHO, UNESCO, ILO, UNAIDS, the United Nations Statistical Division, CDC Atlanta, MEASURE (USAID), Johns Hopkins University, Columbia University, the London School of Hygiene and Tropical Medicine, and others. To access the current versions of the questionnaire and manual, click on the links.

The following indicators are used for water and sanitation:

- **Use of safe drinking water:** proportion of population who use any of the following types of water supply for drinking: (1) piped water; (2) public tap; (3) borehole/pump; (4) well (protected/covered); (5) protected spring.
- **Use of sanitary means of excreta disposal:** proportion of population who have, within their dwelling or compound: (1) toilet connected to sewage system; (2) any other flush toilet (private and public); (3) improved pit latrine; (4) traditional pit latrine.

There are three questionnaires in the MICS. The household questionnaire has six modules, one of which is for water and sanitation. Five questions out of 51 are devoted to water and sanitation in the household questionnaire.

In summary: both the DHS and MICS are national cluster sample surveys, covering

49 http://www.childinfo.org/MICS2/Gj99306m.htm

several thousand households in each country. The samples are stratified to ensure that they are representative of urban and rural areas in each country. They collect information at household level on the main source of drinking water, as well as on sanitation. In most cases each household is asked to identify the type of water source or sanitation facility they use. These surveys collect data from consumers on the facilities that they actually use. Household surveys therefore provide an important step forward in obtaining more accurate coverage information in the sector.

Water and sanitation module

This module is to be administered once for each household visited.
Record only one response for each question.
If more than one response is given, record the most usual source or facility

1. What is the main source of drinking water for members of your household?	Piped into dwelling ____ 01 Piped into yard or plot ____ 02 Public tap ____ 03 Tubewell/borehole with pump ____ 04 Protected dug well ____ 05 Protected spring ____ 06 Rainwater collection ____ 07 Bottled water ____ 08 Unprotected dug well ____ 09 Unprotected spring ____ 10 Pond, river or stream ____ 11 Tanker-truck, vendor ____ 12 Other (specify) ____ 13 No answer or DK ____ 99	
2. How long does it take to go there, get water, and come back?	No. of minutes __ __ __ Water on premises ____ 888 DK ____ 999	
3. What kind of toilet facility does your household use?	Flush to sewage system or septic tank ____ 01 Pour flush latrine (water seal type) ____ 02 Improved pit latrine (e.g., VIP) ____ 03 Traditional pit latrine ____ 04 Open pit ____ 05 Bucket ____ 06 Other (specify) ____ 07 No facilities or bush or field ____ 08	8 ➔ Q.5

>

4. Is this facility located within your dwelling, or yard or compound?**	Yes, in dwelling/yard/compound ____ 01 No, outside dwelling/yard/compound ____ 02 DK ____ 09	
5. What happens with the stools of young children (0-3 years) when they do not use the latrine or toilet facility?	Children always use toilet or latrine ____ 01 Thrown into toilet or latrine ____ 02 Thrown outside the yard ____ 03 Buried in the yard ____ 04 Not disposed of or left on the ground ____ 05 Other (specify) ____ 06 No young children in household ____ 08	

Annex 6: World Health Surveys (WHS) [50]

To compile comprehensive baseline information on the health of populations and the outcomes associated with the investment in health systems, WHO has developed and implemented a Survey Programme and a World Health Survey (WHS). The surveys also provide baseline evidence on the way health systems are currently functioning and build capacity to monitor inputs, functions, and outcomes.

The objectives of the WHS are to:

- Develop a means of providing low-cost, valid, reliable and comparable information,
- Build the evidence base to monitor whether health systems are achieving the desired goals,
- Provide policy-makers with the evidence they need to adjust their policies, strategies and programmes as necessary.

WHO offers a menu[51] of choices of modules for various components. Each country can choose from the following modules:

- Health status of populations, measuring health in multiple domains,
- Risk factors (e.g. tobacco, alcohol, pollution) and their association with health status,
- Responsiveness of health systems; whether health systems meet the legitimate expectations of people,
- Coverage, access and utilization of key health services,
- Health care expenditure.

Different methods of survey are available: a) house to house, face to face surveys; b) computer assisted telephone interview; c) computer assisted personal interview. Depending on the needs of each country, sample size may vary between 1,000 and 10,000 per survey. Respondents are randomly selected. The following questions specifically related to water and sanitation[52] :

Q4042: What is the main source of drinking water for members of this household?
(1) Piped water through house connection or yard tap; (2) Public standpipe; (3) Protected tube well or borehole; (4) Protected dug well or protected spring; (5) unprotected dig well or spring; (6) rainwater (into protected tank or cistern); (7) Tanker–truck–vendor; (8) Water taken directly from pond-water, stream, and unprotected rainwater.

50 http://www3.who.int/whs/

51 http://www3.who.int/whs/P/WHSbrochure2.pdf

52 http://www3.who.int/whs/P/appendices.pdf

Q4045: What type of toilet facilities does your household use?
(1) Flush to piped sewage system (household connection); (2) Flush to specific tank; (3) Pour flush latrine; (4) Covered dry latrine (with privacy); (5) Uncovered dry latrine (without privacy); (6) Bucket latrine (where fresh excreta are manually removed); (7) No facilities (open defecation).

Q8101 to Q8105: the questions try to assess how the lack of drinking water is being addressed by: a) the government; b) local politicians; c) local voting system; d) petitions; e) local leaders.

Annex 7: Questionnaire to monitor Vision 21 indicators

The WSSCC questionnaire for monitoring water, sanitation and health indicators for Vision 21 is shown below. It includes MDG indicators, but goes beyond these to include hygiene behaviour issues (hand washing), use of sanitary facilities, school sanitation and functioning of water supply systems. This analysis of the sector goes beyond quantitative aspects and tries to monitor behavioural change, as described below:

Appropriate hygiene practices

The Vision 21 target for 2015 is universal public awareness of hygiene. The target for 2025 is good hygiene practices universally applied (defined as the day-to-day application of practices and habits that reduce risk of faecal-oral transmission of pathogens). In order to measure these, several questions/points of observation are proposed. It is suggested that a minimum of 2/3 (67%) achievement should be considered "good" behaviour. The questions / observations are:

- Where do you usually wash your hands? (Ask to see and observe if attributes for proper hand washing are available in the household.)
- When do you usually wash your hands in order to keep healthy? (Key answers: after defecation and after handling children's faeces. Washing hands before handling food or feeding children will also have health benefits, but are a secondary barrier.)
- Are children's faeces or child-like faeces around the household area, or not? (If they are not, that is considered a sign of good hygiene practice by the household.)
- What was done to dispose of your (youngest) child's stools (diapers) the last time he or she did not use any toilet facility? (Good practices: disposed of in the toilet, buried, or in covered bin.)
- What does the household use as a drawing mechanism for drinking water? (Ask to see the stored drinking water, and the way water is drawn from the container.)

Access to and use of improved sanitation

The Vision 21 target for 2015 is to halve the percentage of people who lack adequate sanitation. The target for 2025 is that everyone should have adequate sanitation. The LSHTM stipulates that the JMP is no longer reporting on 'safe' drinking water and sanitation, instead it proposes to report on 'improved' water and sanitation. LSHTM argues that this change in terminology reflects past misrepresentation and future uncertainty in judging and defining services as 'safe' in terms of human health. The following questions are proposed:

- What kind of toilet facilities does your household use? (If the answers are

bucket, overhung, open pit or no latrine, there is no access to improved sanitation. If the answer is a pit latrine with floor, a VIP, or a flush latrine then the type of latrine is categorized as improved (so long as non-drinking water is also available for flush latrines, and the contents of latrines are disposed of properly).

- Do you share these facilities with other households? (If no, this is considered a private facility, if yes, public. Toilets and latrines that are private are considered improved. Shared latrines can also be considered improved under certain conditions, such as the facility is located within your dwelling, yard or compound.)
- Do you share these facilities with other people you don't know? (If yes, the latrine used is public, if no it is shared.)
- Do you have to pay to use the toilet each time you go? (Optional question.)
- Does the toilet show signs of regular use and good access? (If the toilet is not used, causes have to be analysed, but fall under the scope of the survey.)
- Is the drop-hole / closet free from visible excreta? (If no, the way the latrine is used and or maintained does not allow it to be considered as 'improved'.)

Use and access of improved water sources

Vision 21 targets for 2015 suggest that the percentage of people who lack safe water should be halved. The target for 2025, is safe water for everyone. For LSHTM, 'improved' water means: to obtain enough drinking water with a potentially reduced pathogenic load and enough non-drinking water for basic hygiene. The following questions are proposed:

- What is the main source of drinking water for members of your family? (Water from open wells as well as river, stream, pond and dam is classified as an unimproved source of drinking water. All other sources need additional information for classification. There are three concepts covered in this question: the type of source, its location/ownership, and its protection.)
- What is the main source of water for personal hygiene for the members of your family? (Most sources of fresh water are suitable for hygiene purpose, the question is therefore optional.)
- How long does it take you to go there, get drinking water, and come back (including queuing time)? (If between 3 to 30 minutes is needed, the amount of drinking water collected varies little with the distance; if more than 30 minutes, than there is no access to drinking water.)
- Was there a day last week when drinking water was not available? (If yes, this source will be considered as an intermittent source.)
- Can this drinking water be used during the whole year, or not? (Optional question.)
- Do you use a different source of water for personal hygiene such as washing?

Monitoring Millenium Development Goals for Water and Sanitation

In September 2000, 147 heads of state and governments, and 189 nations in total, committed themselves to the Millennium Development Goals (MDGs). The MDGs stand for a renewed commitment to overcome persistent poverty and address many of the most enduring failures of human development. Halving 'by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation' is one of the targets defined for achieving these MDGs.

In the water supply and sanitation sector, monitoring progress towards achieving the MDG targets is essential for maintaining and putting into practice the political commitment both of national governments and the international community. However, background information on the water supply and sanitation sector remains unsatisfactory; and the reliability of existing statistics is uneven.

The 'IENA Group', an informal donor group which was convened at the invitation of the World Bank, has expressed the need to review existing global monitoring with a view to developing simple, practical and accepted systems that provide key actors with core information needed to take informed decisions. As a contribution, this review of existing MDG monitoring efforts has been commissioned by German development cooperation and carried out by the IRC International Water and Sanitation Centre. This volume provides useful insight into how the MDGs are monitored for water and sanitation. It identifies challenges that need to be addressed and then formulates recommendations for further action.

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