

Drinking Water and Sanitation

Access to drinking water and sanitation are two of the key indicators of human well-being.

At the Millennium Summit at New York in 2000 and the World Summit on Sustainable Development at Johannesburg in 2002, governments explicitly recognized the importance of increasing access to safe drinking water and basic sanitation as essential prerequisites for development and the reduction of poverty and set goals, called the Millennium Development Goals (MDGs) to be achieved for the provision of these amenities. To reach these goals at a national and global scale, governments, the private sector, and civil society must raise the priority attached to them in their work. Experience in developed countries and results from innumerable studies in the developing ones have shown that the cost of delivering safe drinking water and basic sanitation is far lower than the cost of treating the diseases that occur in their absence. There are few actions that national governments, international agencies, and donors can take that are of higher social, economic, or environmental value.

The efforts made by governments, industry, civil society, and others worldwide during the years since these meetings took place were assessed in a recent survey undertaken by Development Alternatives for the Global Governance Initiative of the World Economic Forum and the Swiss Agency for Development Cooperation. The assessment, which is based on inputs from experts in the field, a review of recent surveys, current publications, and relevant websites, clearly shows that if global efforts continue at present levels, it is unlikely the global community will reach even half way towards meeting the MDGs for safe drinking water and sanitation.

The Goals

The primary goal for safe drinking water was established in the Millennium Declaration (of the Millennium Summit, New York, 2000) as part of the Millennium Development Goals (MDG): ***to halve the proportion of the world's population that does not have safe access to drinking water by 2015***. This was reiterated in the WSSD Action Plan (Johannesburg, 2002) and expanded to include basic sanitation: ***to halve the proportion of the world's population that does not have access to basic sanitation amenities by 2015***. The baseline year for drinking water was specified as 1990 and it is assumed here that the same baseline year applies for sanitation.

Both Goals are expressed as “proportions”, i.e., in percentage terms.

According to the United Nations, the world's population in 1990 was 5.26 billion. For 2015, its best ("medium") projections expect it to be 7.3 billion. [*The United Nations Population Information Network, 2002*].

The World Health Organization states that in 1990 there were approximately 1.126 billion (21% of the world's population) without safe drinking water and an estimated 2.361 billion (45% of the world's population) without sanitation. [*The Global Water Supply and Sanitation Assessment 2000 Report of WHO*]

It should be noted that at various times, UNICEF, the World Bank, and other agencies have presented somewhat different numbers and percentages for 1990, presumably because they based their findings upon alternative definitions and/or different methodologies for collecting the data. [*UNICEF, Progress of Nations, 1997 Water and Sanitation*]. However, the WHO estimates appear to have gained general acceptance, and much of the recent literature is converging on them, and so these figures are used here.

The Table below shows the numbers and percentages of people without safe drinking water and basic sanitation in the baseline year and projected for the target year.

Basic Need/Amenity	Drinking Water	Basic Sanitation
Population in 1990 [UN, Actual, Millions]	5,260	5,260
Millions without Amenity in 1990 [WHO]	1,126	2,361
	▼	▼
% of People without Amenity in 1990	21%	45%
	▼	▼
% of People without Amenity in 2015 [MDG]	10.5%	22.5%
	x	x
Population in 2015 [UN, Med. Proj., Millions]	7,300	7,300
	▼	▼
Millions without Amenity in 2015 [MDG]	770	1,640

If the two goals *are* fully met, the number of people without safe drinking water would, over the 25 year time horizon, decrease from 1.13 billion to just under 0.8 billion; and the number of people without sanitation would decrease from 2.36 billion to 1.64 billion. According to this projection, in 2015, there would still be more than one and a half billion people without one or both of these basic amenities, a situation which could hardly be called satisfactory – especially from the point of view of those who have to live in these conditions. ***Despite the modesty of these goals, at the current rate of progress even they will not be met.***

There are many other fundamental problems associated with the statement of these goals and the means of measuring progress towards meeting them. There are wide definitional variations of what constitutes “safe drinking water” and “basic sanitation”. And each has widely different cost and effort implications.

A further complication arises from different views of what the terms “access to” and “sustainable” mean for these amenities and what the term “safe” means for water and “basic” means for sanitation. Access is often taken to be a facility such as a standpipe, well, or public toilet within reasonable distance. In India, for example, a household is considered to have access if there is a water source within one mile (1.6 km). In many cases, it is not the individual or the household access that is measured but the village as a whole. Where there is a water source, it is not necessarily accessible to all, for whatever reason – physical, economic or social. In practical terms, it is not clear what providing “basic” amenities will actually mean, and this will most likely vary in difference contexts and countries. The need to replace old, dysfunctional infrastructure during the period will further add to the amount of effort needed to meet the goals.

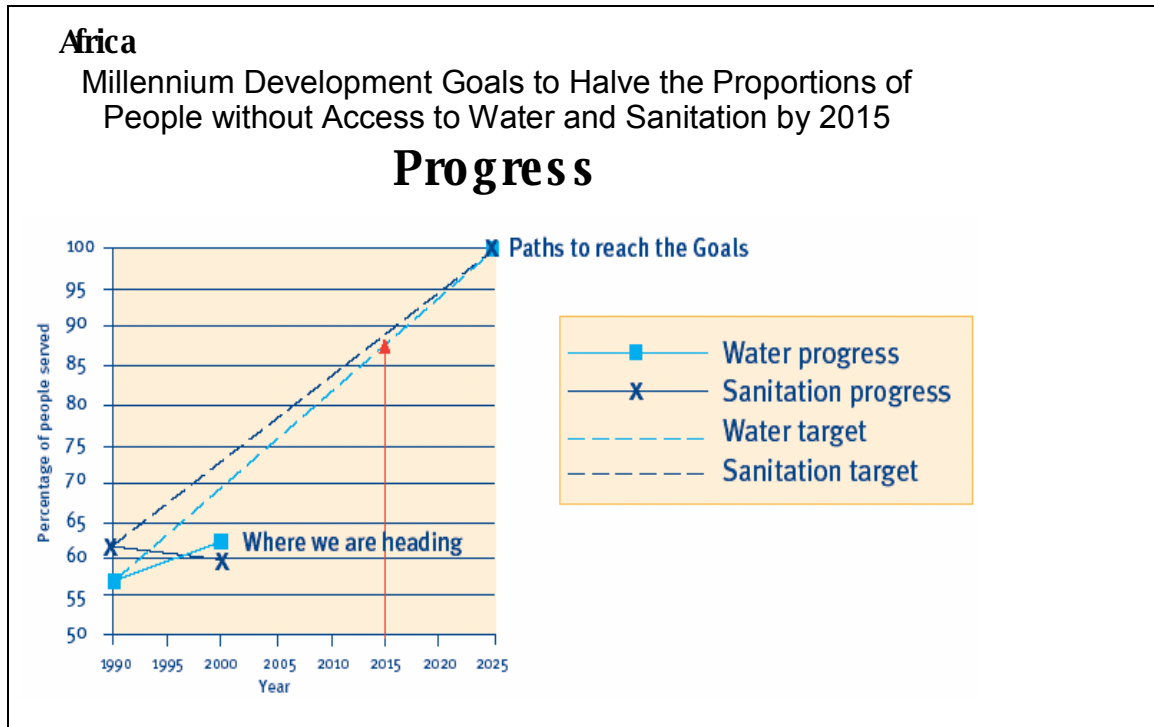
The statement of the Goals, in terms of highly aggregated variables (% of the world’s population, etc.) belies strong variations among and within regions and countries between those who have access to these amenities and those who do not. While the drop in percentages of people without access is defined precisely, it is quite difficult to determine what this means in actual numbers, which is after all what the plans and actions are aiming to achieve. None of the MDG websites provides such numbers. For example: how many people were without drinking water and/or sanitation in 1990 and how many will there be in 2015 if the Goals are met. This imposes a considerable challenge to identify *what* needs to be done, *where* and by *whom*.

The Goals are, therefore, not particularly ambitious nor defined precisely enough to enable actors at various levels or in different sectors to formulate specific methods to operationalize strategies to meet them and monitor progress towards them. *But* they are the goals we have, hammered out through difficult negotiations and committed to at the highest levels of national government. It is therefore important to find ways to work with governments, the international community, as well as the private sector and civil society, to accelerate the process of attaining these goals, however unambitious they might be.

Water and Sanitation – Today and Tomorrow

Inputs from experts, in this survey, and from recent publications and assessments indicate a broad consensus that not enough effort is being made to achieve the MDGs for water and sanitation. According to the World Bank, “at present rates of service expansion, about 37% of the developing world is on track to reach the water supply target and about 16% to reach the sanitation target. When viewed on a country basis, the picture is more dire ... no more than 20% of countries are “on track”. One of the

expert respondents provided a graph prepared by WaterAid, UK, reflecting the progress made towards meeting these goals in Africa.



In other regions of the world, including several countries in Latin America and Asia (eg, China, India, and the Philippines) the trend is somewhat more positive but still probably not sufficient to meet the goals, particularly the one for sanitation. For example, since 1985, the Chinese government, supported by the World Bank, has developed its Rural Water Supply and Sanitation Program. Under this program, approximately six million households have benefited from improved services.

To meet the goals for safe drinking water and basic sanitation, a wide variety of initiatives are needed. These include information and research generation and dissemination, creating incentives, establishing appropriate institutions, formulating relevant policies and legislation, and effective and equitable allocation of resources.

In the area of **Information**, respondents felt that the effort in creating public awareness was somewhat higher than the average for other interventions, particularly in the organization of water-related events and introduction of new publications. A few respondents suggested that currently water could be said to be the “flavor of the month”, given the numbers of international and national conferences being held on the subject, the media attention being given to this issue, and active promotion by the United Nations in 2003 as the international year of freshwater. However, little seems to have been done to inject these

concerns into school curricula. This reflects the overwhelming international dimension of this issue, which has seen limited implementation at the local level. Research, both in the form of surveys and mapping of these issues and in the development of new technologies was also considered far short of that needed to meet the goals.

Information has the potential at the community level to be an effective means to improve sanitation practices. Small gains can be made, although 'bigger' issues such as improving long term availability of water are harder to address at this level. In terms of better hygiene practices, water users at the community level benefit from information on how to draw and consume water safely, and about safe habits of hygiene and sanitation. For example, in the 1990s, an initiative in Central America documented results from a study of four private soap companies which launched hand washing campaigns in Guatemala, Costa Rica, and El Salvador in collaboration with the public sector. The result in Guatemala was a recorded 30% increase in correct hand washing behavior in mothers, and 320,00 fewer cases of diarrhea per year in poor children under 5.

Introduction of specific **incentive systems**, primarily by governments and for corporations in the form of pricing, tax measures and subsidies were found to be generally inadequate. Programs to promote water and sanitation infrastructure in rural areas, such as the Swajal program in India financed by the World Bank have yet to be evaluated, let alone replicated on a wide scale. Although official programs are becoming more participatory in their design and implementation, they still suffer from being driven by top-down, technology, and target imperatives, rather than bottom-up measures which are inclusive of those who most need it. Official programs also suffer from short-term outlook, and many of these incentives have been seen to accelerate delivery of water and sanitation services at the expense of longer term sustainability.

Much of the debate on accelerating the provision of safe drinking water, particularly in urban areas of the Third World has revolved around such issues as pricing, cost recovery based systems, and privatization of delivery services. These are certainly important for reasons of both scalability and sustainability, However, there seems to be a broad consensus that equity considerations demand that other factors such as stakeholder participation, community control and empowerment and, ultimately, public sector responsibility must be central to the design of any viable improvement to the provision of water and sanitation.

Privatization of water is often suggested as a means of improving the efficiency of delivering this vital resource, particularly in urban areas and to industry. However, in the absence of strong institutions of governance to enforce universal service provision, this strategy rarely leads to equitable access to water for all. Even without the establishment of formal mechanisms, it was pointed out by a researcher that de facto privatization of drinking water is already taking place – on a large (but relatively invisible) scale. For example, the expenditure on bottled

drinking water in India in 2002 was \$ 370 Million, growing at some 80% per year. At this rate, the expenditure on bottled drinking water will exceed the entire national budget for municipal drinking water supply within the next three or four years. Unfortunately, the implications of this trajectory for solving the drinking water problem of the country are quite stark: some ten to twenty million people, those who most influence policies and budget allocations, will have insulated themselves from the drinking water problems of the remaining one billion. It is not difficult to imagine how this would affect the setting of national priorities and what the impact could be, both on the vast majority and on the attainment of the MDGs. This goes to the heart of the equity issue. Those groups most at risk of getting inadequate water supply and sanitation have the least capacity to bring about policy changes that could redress the problem. As a result, the poor and other under-represented groups including indigenous populations and women, are ultimately the first to suffer – they end up by having to pay more for their drinking water; sometimes a lot more. According to a recent article in *The Economist* (July 2003), the poor in Bangkok pay local vendors 14 times the price of piped water. The equivalent markup is 40 times in Manila and an even more exorbitant 489 times in Delhi.

Measures to promote cost recovery should be designed to promote efficiency and sustainability, but must also account for wide variations in payment capacity. China's Rural Water Supply and Sanitation program is referred to as an example of high payment compliance, with households metered and a strong incentive system whereby the salaries of the operations staff are tied to monthly bill collection. Payment compliance is high, usually over 90 percent. When existing tariffs do not cover operating costs, they are raised. Although the focus, and indeed the success of this approach is overwhelmingly economic, there is some provision for fairness in the pricing structure. For example, households with individual piped water connections pay more than households receiving lower levels of service. And, legitimate regulation is practiced by the County Price Bureaus, which play a watchdog role that protects the interests of consumers, the rural poor, and providers.

The development of **institutional mechanisms** is given a rating of 4. Research, capacity building, program evaluation systems, and systems of accountability each were rated at about 4. Inter-sector co-ordination, particularly that between social sectors (which are described in the official language as Type 2 partnerships) was seen by experts to be taking off but still had a long way to go. The influence of NGOs, both international and national, appears to be growing and in some countries, such as South Africa and India, they play an increasing role in the design and delivery of water and sanitation systems. In general, NGOs have the unique potential to enhance capacity, in a largely apolitical context. Nascent "Type 2" partnerships can be expected to expand, although not many examples can be found yet in the literature.

There appears to be a sense that in the adoption of more general **policies**, governments have done slightly better than for some of the other actions needed, for example because of the policy papers prepared by governments and for specific commitments made and legislation enacted. Partially as a result of the MDGs and the Johannesburg Plan of Action, national policies and programs for water and sanitation are being accorded higher priority than before by governments such as those of the Bolivia, Philippines, and Senegal. But much remains to be done before national policies and legislation on water and sanitation can be said to reflect international goals and objectives, which include a stronger emphasis on the alleviation of poverty. It is not enough that policies reflect the technical challenges. Policies need to shift from building infrastructure and standpipes and toilets, to ensuring that existing capacity is optimally used to meet consumer demand. And although better policy and legislation can be enacted, the implementation of these national level initiatives, even if they reflect international MDGs, remains a challenge.

Actual **resources allocated** for both safe drinking water and sanitation were seen to be entirely inadequate. Few respondents believed that new sources of funding were being developed at the magnitude needed. The importance of spending on water and sanitation infrastructure is gaining ground in the views of both international development agencies and governments, but the amounts allocated are still well below what is needed – and the amounts spent are even less. According to the March 2003 Report of the World Bank, the current annual expenditure of \$15 Billion on water and sanitation globally is half of what is needed to meet the goals.

The overall conclusion was that there would be a substantial shortfall in meeting the MDGs, modest though they were.

Having said this, it must be noted that the provision of both drinking water and sanitation is not necessarily very difficult, nor inordinately expensive. Technologies exist and so do the resources. It is now principally a matter of focusing the energies of the respective sectors of society to deliver these amenities as a matter of priority.

An example which demonstrates this point is the low-income city of El Alto in Bolivia. The city has 600,000 inhabitants. With government and bilateral support from SIDA, a private concessionaire has improved water and sanitation. With the aim of connecting the greatest number of households, “condominial” low-cost technology was used. Investment costs were reduced by laying small-diameter pipe at shallow depths within sidewalks and yards rather than under streets and drawing communities themselves into all phases of planning and execution. Using this approach all households in El Alto were connected to the water supply. Further, with cooperation from the government, sewerage standards have been modified to allow condominial technology that is affordable for low-income households. Condominial systems, have proven to be cost-effective

compared to conventional water supply and sewerage technology as well as affordable by poorer households. In terms of the resources allocated, more efficient and innovative use of available funds and technology can, with an adequate level of political will and consumer demand, have impressive results.

The actions assessed in this survey complement each other. Concentrating on a single action alone will weaken the mutually reinforcing benefits of these various approaches. The MDGs are becoming well known, but the challenge remains to implement actions to achieve these goals in the given time frame. The focus must now shift to bottom-up measures, with greater inclusiveness of local communities, and a greater focus on institutions and of equity. Policies and legislation need to reflect these overall goals and their targets and avoid being a simple restatement of aspirational goals.