

THE FOURTH WORLD WATER FORUM (WWF-4)
Framework Theme No. 3 – Water Supply and Sanitation for All
Thematic Document

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INTRODUCTION

The 4th World Water Forum is scheduled for Mexico in March 2006. The theme for the Forum is “Local Actions for a Global Challenge.” The guiding principles of the Forum include privileging the value of local knowledge and experience as a key factor in the success of water policy-making; producing concrete, policy-oriented outputs aimed at supporting local action on a worldwide scale; promoting dialogue among policy sectors; and addressing regional challenges to yield regional and global commitments through a regionally-based preparatory process.

The Forum and its preparatory process were organized around five themes:

1. Water for development;
2. Implementing integrated water resources management (IWRM);
3. Water supply and sanitation for all;
4. Water management for food and the environment; and
5. Water security.

Different UN agencies, international networks, and national organizations are taking the lead in various themes; they are referred to as “beacons.” UNDP, UN-HABITAT, UNICEF, the Comisión Nacional Del Agua and a coordinating group (formerly the Secretariat of the United Nations Millennium Project Task Force on Water and Sanitation) are working together as the "Beacon Team on Water and Sanitation For All for the 4th World Water Forum" (Theme 3).

The Beacon Team on Water and Sanitation for All was responsible for preparing this document. The purpose of this document is to help trigger a productive debate at the Forum, serve as a reference for all participants, encourage pre-Forum dialogue, and steer other preparatory activities.

This document draws directly from “*Health, Dignity, and Development: What Will It Take*,” the final report of the UN Millennium Project Task Force on Water and Sanitation. Three of the four organizations of the Beacon Team (UNDP, UN-HABITAT, and UNICEF) were intimately involved in the work of the Task Force; UNDP was the host of the Millennium Project; and the Beacon Team coordinating group were the lead authors of the report.

“*Health, Dignity and Development: What Will It Take*,” published in January 2005, was the culmination of more than two years of research and analysis by a group of experts and practitioners in the sector. It outlines actions required for meeting the water and sanitation target. Rather than “reinventing the wheel,” the Beacon Team used the analysis and recommendations contained in “*Health, Dignity and Development*” in all its activities related to the Forum. Using this report as a framework allowed for more focused, strategic, practical, and solution-oriented discussions of what is being done, and what more must be done, at the local level to ensure that the Millennium Development target on water and sanitation is met. (The full Task Force report is available at http://unmp.forumone.com/eng_html_02.html, and the Millennium Project is described briefly in Box 1.)

Box 1. About the Millennium Project and the Task Force on Water and Sanitation

The UN Millennium Project, an independent advisory body to the UN Secretary-General, was established to focus on the question “what will it take to achieve the Millennium Development Goals?” Commissioned by the UN Secretary-General and the UNDP Administrator (in his capacity as Chair of the UN Development Group), the Millennium Project was a three-year effort to identify the best strategies for meeting the MDGs. Ten Task Forces, each one focused on a specific substantive area and made up of independent experts from the relevant disciplines and sectors, performed the bulk of the Millennium Project’s work; each Task Force was responsible for making recommendations for achieving one or more of the MDG targets.

The Task Force on Water and Sanitation focused primarily on how the world can join together to meet MDG Target 10, “*to cut in half, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.*”

EXECUTIVE SUMMARY AND KEY MESSAGES

Box 2. Millennium Development Goal Target 10

To cut in half, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Expanding water supply and sanitation coverage is not rocket-science; it requires neither colossal sums of money nor breakthrough scientific discoveries and dramatic technological advances. Although reaching the water and sanitation target will by no means be easy, particularly in the very poorest parts of the world, and worldwide the sanitation challenge is indeed daunting, *achieving Target 10 is possible.*

The critical question is how. Based on two years of analysis and consensus-building, what did the United Nations Millennium Project Task Force on Water and Sanitation believe it will take to meet the water and sanitation target? More specifically, what are the key actions in water supply and sanitation that are essential to meeting the MDGs?

A call to action

If the water and sanitation target of the Millennium Development Goals is to be met, poor people and poor countries must get priority, and resources and policies must be focused on spurring and supporting community-led action. More specifically, meeting the target requires that:

1. ***Donors*** increase and refocus their development assistance and target sufficient aid to the ***least developed countries.***
2. ***Governments of low/middle-income countries*** that are not aid-dependent reallocate their resources such that they target funding to the ***unserved poor.***
3. ***All relevant actors*** support activities to create real ownership for water supply and sanitation initiatives among both women and men ***in poor communities.***
4. ***All relevant actors*** recognize that basic sanitation in particular requires ***an approach that centers on community mobilization and actions that support and encourage that mobilization.***

Without these four preconditions, the poorest countries will miss Target 10; the poorest people in on-target middle-income countries will be left behind; many of the gains that are made will not be sustained; the sanitation crisis will continue unabated; and, in many countries, water scarcity, variability, and contamination will hamstring progress toward all the goals.

Our starting points are thus clear: ***poor people and poor countries must get priority, and resources and policies must be focused on spurring and supporting community-led action.*** The key to reaching the targets will be to mobilize and support people themselves, country by country, particularly in slums, rural areas, and other marginalized communities where access to services is lowest.

Consistent with this focus on ground-level action, local, sub-national, and national governments have the primary responsibility for expanding access to water supply and sanitation services. National governments must stand by their commitments to the MDGs by making them priority national development goals, preparing strategies and action plans for their achievement, opening doors for community action, and mobilizing public awareness and support, especially for sanitation and hygiene. Though governments need not engage directly in service delivery, they do need to set standards for service providers (including public utilities and the private sector), and they must intervene, if necessary, to make things happen.

To make the MDGs a reality for everyone, countries must focus their efforts and resources where needs and challenges are greatest, particularly among concentrations of very poor people in urban slum areas, peri-urban areas, and rural areas. They must ensure that the financial burden of serving the poor is not borne by the poor alone. For upper low- and middle-income countries, this commitment principally means that existing resources must be used more effectively. In order to make subsidies for the poorest possible, governments must end subsidies for the non-poor. This reallocation of resources will require significant political will and commitment, since ensuring basic services for all rather than subsidizing “luxury” service for some will challenge powerful interests and create a new set of winners.

That said, there is clearly a critical supporting role for international agencies, international NGOs, and, most importantly, donor countries, which have also committed to the MDGs. Most of the countries with the lowest levels of human development and that have made the least progress over the past ten years are stuck in poverty traps, bypassed by economic development because of structural impediments like geography, climate, the burden of disease, rapid population growth, heavy debt burdens, dependence upon primary commodity exports, and the inequities of the global current trade regime. For these countries, all the governance reforms, enabling policy environments, and social mobilization efforts in the world will not address the fact that domestic resources are simply inadequate to support a meaningful expansion of services. Without more official development assistance (ODA), these countries simply cannot meet the water and sanitation target; they do not have and cannot generate sufficient resources from any other source. To meet the goals, donor countries must fulfill their side of the Monterrey compact to provide more ODA, as well as increase the efficiency of aid through better coordination.

To ensure inclusion of and priority for the poor, the vulnerable and the remote in improved services, ODA should be targeted within countries to programs that benefit the poorest. Subsidies should focus on access rather than consumption, and should help to attract rather than take the place of community and private resources. Grant-based ODA should never go to projects that will primarily benefit the middle and upper income groups. For low/middle income countries, actors at the international level can play a pivotal role as advocates, catalysts, mobilizers of international support, and sources of additional resources. The framework for this support must be national development planning and budgeting processes that focus on achieving the MDGs. There is also a particular need for financial instruments that protect countries from risks, such as adverse currency movements.

Actions

Meeting the water and sanitation target and optimizing water resources for the MDGs by 2015 will require a dramatic scaling-up of efforts—dramatic in terms of both the extent of action required and the speed with which these actions must be undertaken. The financial, governance, and capacity constraints low-income countries face will make this a complicated challenge. Scaling-up service delivery in the poorest countries will require unprecedented short-term action as well as a focus on building the management systems needed to implement large-scale programs over the medium-term and sustain the gains made over the long-term. It will also require a departure from “business as usual” on the part of all key actors and new approaches that center on decentralization, transparency in budgetary allocations, and massive capacity-building efforts right down to the village level. This dramatic scaling-up of efforts that meeting the ambitious Millennium Development goals and targets entails will require very significant investments, both in infrastructure and in institutional strengthening and reform, as well as at least ten complementary actions necessary to underpin them. These actions can be crystallized as follows:

Action 1: Governments and other stakeholders need to move the sanitation crisis to the top of the agenda.

“Water supply and sanitation,” occasionally joined by “hygiene,” are words that often appear together in speeches and pronouncements, and indeed this trio belongs together as a cornerstone of public health as well as social and economic well-being. Sanitation and hygiene, however, somehow disappear during the planning, policy-making, budgeting, and implementation phases, while the lion’s share of effort and resources are allocated to water supply. This needs to change: sanitation and hygiene promotion need to move “front and centre” rather than continuing as add-ons to water supply. They are key to development with dignity.

Fundamentally, advocates and sector professionals must not be afraid to tell the plain, ugly truth about what really happens – namely, open defecation. That 42 percent of the world’s people lack what virtually all readers of this report take for granted—a toilet —is a travesty with devastating impacts on peoples’ daily lives, health, and self-respect; we should not be afraid to say so. Here, lessons from the successes in galvanizing global support for the HIV/AIDS epidemic are important; only once policy-makers, civil society groups, and the woman and man on the street started speaking openly about how HIV spreads (mainly sexual contact) and how to stop it (condoms, monogamy) did rates of new infection start to decline.

In many cases, countries must approach the challenge of improving sanitation service with different strategies than those employed to expand access to water supply. Expanding sanitation depends not just on building latrines, but also on understanding what motivates people to act in certain ways, and then finding ways to capitalize on those motivations. Mobilization, education, communication, and social marketing, aimed at households, communities, schools, and public authorities are key. The focus needs to be on decisions taken and investments made at the household and community levels, rather than on installation of hardware. More and different types of people need to be pulled into this effort, including NGOs, women’s groups, religious organizations, schools, youth groups, small-scale service providers, and local entrepreneurs;

indeed, many “traditional” sanitation service providers will need to create space for more actors to enter, influence, and support the market.

Innovation, pragmatism, and, above all, community solidarity and mobilization must be brought to bear to find local solutions that respond to local needs in an affordable and effective manner. Design of sanitation facilities must respond to user preferences, beliefs and practices; demand for different technical options; motivations for change; and capacity to maintain facilities in the long term. As in all sound marketing practice, sanitation promotion should take into account the distinct needs and preferences of different consumer groups, such as women and children.

Given the enormous ground to be covered to meet the sanitation target, the hallmarks of sanitation strategies should be maximum scalability, minimum transactions costs, full financial accountability and closed revenue cycles, along with technical feasibility and operational and environmental sustainability.

Action 2: Countries must ensure that policies and institutions for water supply and sanitation service delivery respond equally to the different roles, needs, and priorities of women and men.

Gender differences and inequalities are fundamental to all efforts aimed at improving water supply, sanitation, and water resources management. Because they shoulder the lion’s share of domestic responsibilities, women and girls suffer disproportionately when water supply and sanitation services are deficient. Across virtually all cultures, women have a greater need than men for facilities that are safe, private, and near their homes. In water resources management and development, women and men often have different priorities; women, for instance, often prioritize water for domestic use and household gardens, while men want water for irrigating cash crops. Women’s relative access to and control over water (and other key resources linked to water, such as land, credit, and extension services) as well as gender biases within public institutions greatly affect the degree to which women can take part in and benefit from water management and development schemes.

Addressing this reality is critical for the effectiveness and sustainability of water and sanitation interventions. In addition, community action and social mobilization around the provision of basic social services like water have been shown to be a valuable entry point for promoting women’s empowerment. Having a leadership role in community management of water supplies, for instance, can increase women’s social capital as well as their bargaining power within the household. Priority should be given to policies that capitalize on the potential synergy between the water and sanitation target and the gender equality goal.

Action 3: Governments and donor agencies must simultaneously pursue investment and reforms for improved water supply and sanitation.

Meeting the water and sanitation target by 2015 will require a dramatic scaling up of efforts—dramatic in terms of both the extent of action required and the speed with which these actions must be undertaken. Waiting for reforms to be implemented before making the necessary investments will make it impossible to meet the 2015 deadline. Over the past decade, donors have often made funding for infrastructure and service delivery contingent upon capacity

building and institutional reform. However, in a number of cases, the acquired skills atrophied before the investments materialized, or the “reforms” were merely cosmetic. In other cases, expected ODA or funding from private-sector investment in service delivery following institutional reform never appeared. Allowing reforms and investments to take place simultaneously, which some call “learning by doing,” will help address the tension between the desire to have reforms in place before investments *and* meet the MDGs by the deadline of 2015. It will also ensure that reforms are grounded in reality. This parallel approach could be made contingent upon a credible program of investments and a commitment (at the highest level) to simultaneous reforms.

Action 4: A focus on sustainable service delivery, rather than construction of facilities alone, must be at the center of efforts to reach Target 10.

The Millennium Development Goals necessarily focus on measurable targets such as the proportion of people without access to water supply and sanitation. It is important to remember, however, that water supply and sanitation are services, not simply facilities. The former is a process—requiring the sustained involvement of government, service providers, and households—while the latter is a product that can be delivered in a one-off project. Adopting a service orientation requires attention to financial flows and institutional arrangements for operations and maintenance, as well as incentives for providing safe, reliable services to all customers (including the poor) on a continuing basis. This approach is being contemplated in Brazil, where government has proposed subsidizing service for the poor contingent not on the provision of physical infrastructure, but rather on the supply of reliable service.

This focus on service delivery should also extend to monitoring systems. Monitoring and assessment systems for access to water supply and sanitation services need to be active and adequately resourced from the sub-national to the international level. These systems need to employ valid and reliable measures of access to water supply and sanitation services. More specifically:

- Access to services, rather than to infrastructure, should be at the center of monitoring efforts. The parameters that matter most to users—including the convenience, reliability, sustainability, and adequacy of water supply and sanitation services—should be measured over time, as should equity of access (*e.g.*, by women and the poor).
- Monitoring systems should employ a sample survey approach.
- Collected data should be shared in user-friendly formats with NGOs, civic groups, and the public at large as well as with national and international institutions.

Action 5: Governments and donor agencies must empower local authorities and communities with the authority, resources, and professional capacity required to manage water supply and sanitation service delivery.

Water supply and sanitation service delivery should be managed at the lowest appropriate level; however, this devolution of responsibility must be accompanied by corresponding devolution of

financial resources and authority, as well as the provision of technical and managerial support to build local capacity.

Decentralization of authority and responsibility to local institutions that lack the requisite technical, managerial, or financial capacity and authority for planning and service delivery can hinder, rather than accelerate, the expansion of sustainable services. Partnerships with local businesses, women's organizations, and other NGOs can be used to help build capacity in local governments and move the service-expansion agenda forward. Civic organizations can help promote accountability through facilitation of information dissemination and citizens' exercise of voice and demand for services. Also important is the careful balance of authority between local institutions and the center—for example, with respect to setting standards and subsidy policies—such that the interests of low-income households are protected. Central governments should take explicit measures to ensure that decentralization of service provision is not captured by local elites; it should rather create incentives for local governments to serve the poor.

There are strong links between local government reform and reforms in water supply and sanitation sectors. The provision of water supply and sanitation services can, in some instances, be pivotal for strengthening local governments. It can also provide an effective entry point for women's participation (Recommendation 2) in local political processes, particularly when the equal representation of women in water management is a design feature of programs and policies. An emphasis on service provision (Recommendation 4) implies a greater focus on ongoing management, which depends upon effective local institutions.

***Action 6:* Governments and utilities must ensure that users who can pay do pay in order to fund the maintenance and expansion of services – but they must also ensure that the needs of poor households are met.**

Only service providers that have adequate funds can operate and maintain present systems properly and establish the creditworthiness needed to support service expansion. Closing the revenue gap depends both on reducing costs and increasing revenues. Improving revenue collection can often be achieved simply by charging for what is delivered and collecting bills in a timely manner. Households and communities are capable of making responsible decisions about investments in sustainable water supply and sanitation, and will pay for them if service providers can be held responsible and accountable for the quality of the service they provide. In fact, willingness to charge by governments and service providers is often the limiting factor for adequate revenue generation and resource mobilization. Governments must set an example in their communities by paying their own water bills promptly and in full.

At the same time, governments must recognize that the financial burden of serving the poor cannot be borne by the poor alone. Some poor families and communities simply cannot pay for water supply and sanitation services; carefully targeted subsidies for this group are essential. Where the needs of the poor are not being met because available public resources are being captured by the rich and powerful, appropriate reforms must be implemented. Community-based and/or micro-financing may be a starting point, building a domestic financing system in the process. Governments can also develop financial models for support to non-governmental and community-based organizations, which can often deliver services at lower costs.

In many areas without access to improved services, however, the financial resources for meeting the MDGs must come from outside the communities concerned. Part of the additional funding must come from those already served, using appropriate cross-subsidies; part may come from national income redistribution mechanisms; and part from international donors. In general, subsidizing access (connections in network systems, for example) has proven to be a more transparent way of targeting the poor as compared to subsidizing consumption (*e.g.*, monthly bills). In addition, even in the poorest communities beneficiaries can typically contribute to the costs of improved service through various forms of in-kind contributions. Such contributions engender a sense of ownership necessary for sustainability.

It is also critical to recognize that financial sustainability for water supply and sanitation systems requires discipline within national-level budgeting processes. No system should be built unless it is known how it will be financed—not just the initial capital investment, but also the costs of operation and maintenance. Budgeting processes in general also need to become more transparent. Reduction of corruption at all levels, including in the donor organizations and international agencies, is key

Action 7: Governments and their civil society and private sector partners must support a wide range of water and sanitation technologies and service levels that are technically, socially, environmentally, and financially appropriate, and innovation must be promoted in strategic areas.

Supporting a broad range of technological choices allows communities to install the water supply and sanitation infrastructure that they want, are willing to pay for, and can maintain in the long term; it can also lower per-capita costs, thus permitting limited resources to bring service to more households. Hand pumps, improved wells, rainwater harvesting, locally designed latrines, installations using volunteer labor, community maintenance, and the promotion of small-scale independent service providers are examples of "lower-tech" approaches that may be particularly relevant and cost-effective for many rural and peri-urban areas. In some urban settlements, small, locally operated water supply and sanitation systems may be less expensive to construct and maintain than large, centralized systems.

Encouraging the development and use of a range of technologies and services levels helps to resolve the tension between the need for a swift scaling-up of services to meet the 2015 target and the aim of sustaining the gains made over the long-term. One-size-fits-all approaches necessarily mean that some households and communities end up getting the "wrong" services, *i.e.*, those that are not technically feasible, socio-culturally appropriate, or affordable for users, or that are simply not the types of services that users want. A failure to respond to user preferences and circumstances all but guarantees an eventual failure of the services themselves.

To meet the water supply and sanitation targets, innovation is particularly needed in the financial, policy and institutional arenas -- such as service delivery systems that help service providers to ensure effective relationships with households and communities, to work with communities, households, local civil society and/or private sector partners, and to build capacity to innovate and adapt solutions. While most experts agree that a full complement of technologies

is now available for safe, reliable water supply in almost any setting, progress towards the sanitation target is still constrained by the lack of technologies that are reliable and affordable enough to implement on a wide scale without having negative impacts on the environmental sustainability target. Technical advances in such areas as effective, affordable and simple-to-operate sewage treatment plants that can be located close to residential areas; drainage and solid waste disposal; and urban wastewater treatment and management in large urban agglomerations should therefore be promoted and accelerated.

WHY FOCUS ON WATER SUPPLY AND SANITATION?

Given the myriad development challenges facing the world's poorest countries and communities – from the HIV/AIDS pandemic to pervasive gender inequality to grinding poverty – why has halving the proportion of people without sustainable access to safe drinking water and basic sanitation services been singled out as critical? The imperative of dramatically expanding coverage of water supply and sanitation services and improving water management overall deserves the vigorous response of the international community because of the relationship between water supply and sanitation and questions of human health, overall economic development, and equity; and because of humankind's shared understanding of our responsibilities to one another, a common understanding enshrined in many international human rights instruments. Not everyone will find the various rationales for investment in water supply and sanitation listed below equally persuasive; what matters is that water supply and sanitation advocates, policy-makers and practitioners are able to articulate to a range of key constituencies a compelling case for action and that governments and other important actors respond with the necessary measures.

Human values and human rights

Expanding access to water and sanitation is a moral and ethical imperative rooted in the cultural and religious traditions of societies around the world and enshrined in international human rights instruments.

Success in bringing water and sanitation to poor communities in the most difficult circumstances is due as much to the qualities and personal motivations of the people concerned as it is to the technical ingenuity and the financial resources available, important as those may be. Many services run on a shoe-string of hope by volunteers, religious groups or dedicated, poorly paid officials succeed because they mobilize the enthusiasm and engagement of their communities, while other projects backed by extravagant budgets and massive expertise turn to dust in a bureaucratic desert that stifles individual and community spirit. Many of the most effective interventions at the community level meld economic and social development with spiritual growth and bonds of communal solidarity. They also clearly balance rights on the one hand with responsibilities on the other; indeed, experience has shown that the most sustainable community-level interventions are characterized by significant community investment of labor, other in-kind resources, and user fees in the design, construction,

Box 3. Lack of sustainable access to basic sanitation – a polite way to say “open defecation”

Early in the morning Vidya slips out of his shack on the banks of the Sabermati River and, carrying a precious lota of water, hurries down to the dry river bed. Weaving between the excrement and rubbish he finds an “open” space and, in company with hundreds of other men from his community, he defecates. It is a bit smelly and not very private but he is one of the lucky ones. For a start his walk is short and safe, and his destination at least has the advantage of a freshening breeze even at the height of summer. Others are far less fortunate. As day breaks across the world precious hours are being wasted as men, women and children search for that elusive safe and secluded spot. Women, walking furthest and often running the risk of attack, ridicule and shame, pass young boys and girls who will miss school today because there are no toilets. In the cities, working women are gearing up for a day with no chance of a “toilet break” while men will have to find any available open space to the disgust of passing observers. All of them face repeated cases of diarrhea, schistosomiasis, trachoma and other water-related diseases. This is what it means to have no “sustainable access to basic sanitation.”

From UN-HABITAT's *Unheard Voices of Women in Water and Sanitation* project

maintenance and operation of facilities. The Millennium Development Goals themselves are built around a shared understanding of what we as human beings owe to one another and are informed by principles of fairness, justice and the obligation of the individual to pursue the mutual good that characterizes religious and ethical systems the world over.

These shared principles are echoed in the recent affirmation by the United Nations of the Right to Water (26 November 2002) – a right that is “indispensable for leading a life in human dignity” and “a prerequisite for the realization of other human rights.” Through its General Comment 15, the Committee on Economic, Social and Cultural Rights of the United Nations Economic and Social Council stated that “the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.” While the right to water has been implicit in the rights to health, housing, food, life, and dignity already enshrined in other international conventions, General Comment 15 is the first to focus explicitly on the right to water and the responsibilities that governments have in delivering clean water and adequate sanitation services to all¹.

The contribution of domestic water supply and sanitation to the Millennium Development Goals as a whole²

Expanding access to domestic water supply and sanitation services, as called for in Target 10, will bring the international community closer to meeting a number of other Millennium Development targets; in fact, for many of the targets, it is difficult to imagine how significant progress can be made without first ensuring that poor households have a safe, reliable water supply and adequate sanitation facilities. Meeting Target 10 is particularly vital in terms of the poverty, gender and health MDGs, and also has a significant impact on other goals. For instance, as illustrated in Table 1, in terms of the hunger goal, healthy people are better able to absorb the nutrients in food than those suffering from excreta-related diseases, particularly intestinal worms; in terms of the education goal, reducing the incidence of water and excreta-borne disease among children improves school attendance.

¹ ECOSOC General Comment No. 15, E/C.12/2002/11, 26 November 2002. The full text of this General Comment is available at <http://www.unhcr.ch/html/menu2/6/cescr.htm>

² This section draws extensively on *Water Governance for Poverty Reduction*: UNDP, Water Governance Program, Bureau for Policy Development. January 2004. *Water Governance for Poverty Reduction*. [Retrieved 12 November 2004 from: www.undp.org/water/pdfs/241456%20UNDP_Guide_Pages.pdf].

Table 1. Contribution of access to domestic water supply and sanitation to the other MDGs

Millennium Goal by 2015	Contributions of Domestic Water Supply and Sanitation
<p>Poverty To halve the proportion of the world's people whose income is less than \$1/day</p>	<ul style="list-style-type: none"> • Household livelihood security rests on the health of its members; adults who are ill themselves or who must care for sick children are less productive. • Illnesses caused by unsafe drinking water and inadequate sanitation generate health costs that can claim a large share of poor households' income. • Time spend collecting water cannot be used for other livelihood activities
<p>Hunger To halve the proportion of the world's people who suffer from hunger</p>	<ul style="list-style-type: none"> • Healthy people are better able to absorb the nutrients in food than those suffering from water-related diseases, particularly worms, which rob their hosts of calories.
<p>Primary Education To ensure that children everywhere complete a full course of primary schooling</p>	<ul style="list-style-type: none"> • Improved WSS services relieve girls from water fetching duties, allowing them to attend school. • Reduced WSS-related illness, including injuries from water-carrying, improve school attendance, especially for girls. • Having separate sanitation facilities for girls in schools increases their school attendance, especially after menarche
<p>Gender Equality To ensure girls and boys have equal access to primary and secondary education</p>	<ul style="list-style-type: none"> • Community-based organizations for water supply and sanitation can improve social capital of women. • Reduced time, health, and care-giving burdens from improved water services give women more time for productive endeavors, adult education, empowerment activities, leisure • Water sources and sanitation facilities closer to home put women and girls at less risk for sexual harassment and assault while gathering water and searching for privacy • Higher rates of child survival are a precursor to the demographic transition to lower fertility rates; having fewer children reduces women's domestic responsibilities.
<p>Child Mortality To reduce by two-thirds the death rate for children under five</p>	<ul style="list-style-type: none"> • Improved sanitation, safe drinking water sources, and greater quantities of domestic water for washing reduce infant and child morbidity and mortality. • Sanitation and safe water in health-care facilities help ensure clean delivery and reduce neonatal deaths. • Mothers with improved WSS services are better able to care for their children, both because they have fewer illnesses and because they devote less time to water fetching and seeking privacy for defecation.
<p>Maternal Mortality To reduce by three-fourths the rate of maternal mortality</p>	<ul style="list-style-type: none"> • Accessible sources of water reduce labor burdens and health problems resulting from water portage, reducing maternal mortality risks. • Improved health and nutrition reduce susceptibility to anemia and other conditions that affect maternal mortality. • Safe drinking water and basic sanitation are needed in health-care facilities to ensure basic hygiene practices following delivery. • Higher rates of child survival are a precursor to the demographic transition toward lower fertility rates, and fewer pregnancies per woman reduce maternal mortality
<p>Major Disease To halve, halt and begun to reverse the spread of HIV, malaria, other major diseases</p>	<ul style="list-style-type: none"> • Safe drinking water and basic sanitation help prevent water-related diseases, including diarrheal diseases, schistosomiasis, filariasis, trachoma, and helminthes. 1.6 million deaths per year are attributed to unsafe water, poor sanitation, and lack of hygiene. • Improved water supply reduces diarrhea morbidity by 21%; improved sanitation reduces diarrhea morbidity by 37.5%; hand washing can reduce the number of diarrheal cases by up to 35%; additional improvements in drinking water quality, such as point-of-use disinfection, would reduce diarrheal episodes by 45%.
<p>Environmental sustainability To stop the unsustainable exploitation of natural resources; to halve the proportion of people without water/sanitation; to improve the lives of 100 million slum dwellers</p>	<ul style="list-style-type: none"> • Adequate treatment and disposal of excreta and wastewater contributes to better ecosystem management and less pressure on freshwater resources. • Improved sanitation reduces flows of human excreta into waterways, helping to protect human and environmental health • Inadequate access to safe water and inadequate access to sanitation and other infrastructure are two of the five defining characteristics of a slum

Poverty Goal. At both the national and international levels, it is difficult to find a definition of poverty that is not based at least in part on access to safe drinking water supply and basic sanitation services. For instance, the United Nations Development Programme's Human Poverty Index³ is a composite of indicators of basic dimensions of deprivation: a short life (measured by the percentage of people expected to die before 40), lack of basic education (measured by literacy rates), and lack of access to public and private resources (measured by access to health services, clean water and sanitation, and percentage of malnourished children under five). Vulnerability is a critical dimension of poverty, and households with access to safe, reliable domestic water supply and sanitation services are less vulnerable than those who must figure out on a daily basis how to meet their needs.

Improved access to domestic water supply and sanitation brings with it considerable economic benefits at the household level. There is a strong link between health and household livelihood security; the inadequate water supply and sanitation services upon which the poor are forced to rely damage their health, causing relatively high health costs relative to income, an increase in morbidity, and a decreased ability to work. In addition, sufficient water supply is critical to the success of many household-based micro enterprises. Other links include the following:

- Poor women and men spend a significantly greater proportion of their income on water than do the rich, and the absolute price they pay to water vendors is often ten times or more the tap price.
- Reducing the ill health and disease of children through improved water supply and sanitation services frees the time of the adults who care for them (particularly women) for more productive activities; it also keeps the children themselves from missing school, which has long-term economic consequences. Less illness (among both children and adults) means that adults miss fewer days of work, be it as employees, entrepreneurs or farmers, with positive impacts on overall income and livelihood security. Seventy-three million working days are lost each year in India to water-borne diseases at a cost of \$600 million in terms of medical treatment and lost production⁴. Lower health costs mean more disposable income.
- Access to water near the home can save significant amounts of time for women and girls – time that can be spent on productive activities and education, which lay the groundwork for economic growth. Forty billion working hours are lost each year in Africa to the need to carry water⁵, and improving domestic water supply services reduces female “time poverty.”
- Having healthier children is, of course, a hoped-for end in itself, but higher rates of child survival are also a precursor to the demographic transition toward lower fertility rates, which in turn improves quality of life and spurs development.

³ See www.undp.org/hdr2003/indicator/indic_27_1_1.html

⁴ UNDP "International Drinking Water Supply And Sanitation Decade 1981-1990: Decade Dossier"

⁵ Cosgrove WJ & FR Rijsberman. 1998. "Creating A Vision For Water, Life And The Environment." *Water Policy*. 1(1): 115-22

Box 4. Improving water supply and sanitation services yields economic benefits*

A recent cost-benefit analysis by WHO found that achieving the global MDG target in water and sanitation would bring substantial economic gains: each \$1 invested would yield an economic return of between \$3 and \$34, depending on the region. The benefits would include an average global reduction of diarrheal episodes of around 10%.

If the global water and sanitation target is met, the health-related costs avoided would reach US\$7.3 billion per year; and the annual global value of adult working days gained due to less illness would rise to almost US\$750 million. Better services resulting from the relocation of a well or borehole to a site closer to user communities, the installation of piped water supply in house, and latrines closer to home yield significant time savings. The annual value of these time savings would amount to US\$64 billion if the MDG target is met.

The total benefits of such service improvements will vary across regions, as they depend on the existing levels of water supply and sanitation coverage and the region-specific levels of morbidity and mortality due to diarrheal diseases; regions where the number of unserved is high and the diarrheal disease burden significant would realize the greatest benefits from improved services.

* http://www.who.int/water_sanitation_health/en/execsummary.pdf - "Evaluation of the costs and benefits of water and sanitation improvements at the global level."

Box 5. UNICEF's water, sanitation and hygiene programmes

UNICEF believes that the Millennium Development Goals are attainable with concentrated action toward grassroots capacity building and education of women and children in rural areas in Africa and Asia. Investment in infrastructure combined with water, sanitation and hygiene education for schools will pave the way to good health and well-being. With a finger on the pulse of the community, UNICEF is able to work towards capacity building by linking all important stakeholders to water and sanitation projects. UNICEF fosters community ownership by honouring the expertise of the local population. There is a far greater chance of long-time sustainability of water and sanitation services when the people are behind the design, implementation and maintenance of projects.

UNICEF has supported interventions in the sector for almost 40 years, early programmes focused on direct implementation to increase service coverage in specific geographic areas which leading global development efforts with the innovation of appropriate and low-cost technologies, such as the India Mark II hand pump. Current strategies focus on the development of enabling policy environments, institutional capacity building, the development and demonstration of new programme approaches, and technical support to governments and implementing agencies. Additional priority is given to UNICEF's leading role in the coordination of the interagency standing committee (IASC) on emergency relief efforts.

Experience over time has proven that culturally appropriate hygiene education, such as the simple act of hand-washing, can reduce child mortality by up to one third. Today's primary school student can become a healthy, productive adult who is empowered to break the perpetual cycle of poverty and illness in 2015.

UNICEF continues to expand its water, sanitation and hygiene programmes, supporting activities in more than 90 countries ranging from national policy development to direct support for improved service delivery in focus areas, with interventions focusing on expanding programmes that support rural water, sanitation and hygiene.

Health Goals. The importance of safe drinking water and basic sanitation to the preservation of human health, particularly among children, cannot be overstated. Water-related diseases are the most common cause of illness and death among the poor of developing countries. According to the World Health Organization, 1.6 million deaths per year can be attributed to unsafe water, poor sanitation, and lack of hygiene⁶. Realizing the health-related MDGs goals, particularly those targeting child mortality and major diseases, will require a dramatic increase in the number of poor women, men and children in developing countries with access to safe drinking water and basic sanitation services. It will also require behavioral and attitudinal shifts as well as greater focus on hygiene, a critical but often overlooked element in discussions usually dominated by questions of access and service provision.

The health impact of poor quality water supply and sanitation services and water-related diseases on developing countries is devastating⁷:

- At any given time, close to half the people in the developing world are suffering from one or more of the main diseases associated with inadequate provision of water supply and sanitation services: diarrhea, ascariasis, dracunculiasis (guinea worm), hookworm, schistosomiasis (bilharzias, or snail fever) and trachoma.
- More than half the hospital beds in the world are filled with people suffering from water-related diseases. In China, India, and Indonesia – three of the world’s most populous nations.
- Billions of cases of diarrhea each year cause 1.6 million deaths, the vast majority among children under five, mostly in developing countries. 88 percent of diarrheal disease is attributed to unsafe water supply, inadequate sanitation and hygiene. Improved water supply reduces diarrhea morbidity by 21 percent; improved sanitation reduces diarrhea morbidity by 37.5 percent; and the simple act of washing hands at critical times can reduce the number of diarrhoeal cases by up to 35 percent. Additional improvement of drinking-water quality, such as point of use disinfection, would lead to a reduction of diarrhea episodes of 45 percent.
- Though not well documented, watching a much loved young child die from a preventable, water-related disease like diarrhea, as do one in five in the poorest pockets of the world, no doubt has serious and lasting impacts on the psychological and emotional health of surviving parents and siblings.
- Some six million people worldwide are blind due to trachoma; and more than 150 million people are in need of treatment. It is the leading cause of preventable blindness. The disease is strongly related overcrowding and the absence of

⁶ See: www.who.int/water_sanitation_health/diseases/en/

⁷ These statistics are drawn from two sources: 1) UN/WWAP (United Nations/World Water Assessment Programme). 2003. *UN World Water Development Report: Water for People, Water for Life*. Paris, New York and Oxford, UNESCO (United Nations Educational, Scientific and Cultural Organization) and Berghahn Books and 2) WHO Facts and Figures: Water, Sanitation and Hygiene Links to Health. Retrieved on November 12 2004 from: www.who.int/water_sanitation_health/publications/factsfigures04/en/

- nearby sources of safe water for washing the face and hands. Improving access to safe water sources and better hygiene practices can reduce trachoma morbidity by 27 percent.
- Intestinal helminths (ascariasis, trichuriasis, hookworm disease) affect hundreds of millions of people; 133 million suffer from high intensity intestinal helminth infections, which often leads to severe consequences such as cognitive impairment, massive dysentery, or anaemia. These diseases cause around 9,400 deaths every year. Access to safe water supply and basic sanitation facilities combined with better hygiene practice can reduce morbidity from ascariasis by 29 percent. Overall, healthy people – as opposed to those sickened by worms – are better able to derive the maximum nutritional benefits from food; much of the caloric intake of people suffering from worms is captured by the parasites.
 - Worldwide, over an estimated 160 million people are infected with schistosomiasis. The disease causes tens of thousands of deaths every year, mainly in sub-Saharan Africa. It is strongly related to unsanitary excreta disposal and absence of nearby sources of safe water. Basic sanitation reduces the disease by up to 77 percent.
 - Arsenic in drinking water is a major public health threat. In Bangladesh, between 28 and 35 million people consume drinking water with elevated levels of arsenic; the number of cases of skin lesions related to arsenic in drinking water is estimated at 1.5 million. Arsenic contamination of ground water has been found in many countries, including Argentina, Chile, China, India, Mexico, Thailand and the United States.
 - Over 26 million people in China suffer from dental fluorosis due to elevated fluoride in their drinking water, and over one million cases of skeletal fluorosis are thought to be attributable to drinking-water.
 - Cholera epidemics are a major risk where there are large concentrations of people and hygiene is poor (as in refugee camps and urban slums); an epidemic that began in Peru in 1990 spread to 16 other countries in Latin America, and ten years later cholera remains endemic following its absence from the continent for nearly a century.
 - Water containers typically hold 20 liters of water and weigh 20 kgs. Carrying such heavy loads, commonly on the head or back, for long distances each day, can result in headaches, fatigue, and pain or even serious injury to the head, neck, spine and pelvis. Women are responsible for carrying water, and spinal and pelvic injuries can cause problems during pregnancy and childbirth; reducing water portage burdens can reduce maternal mortality risks. Children who carry water can also suffer serious and lasting injury.
 - Improved health overall from clean water, sanitation and better nutrition reduces susceptibility to anemia and other conditions that affect maternal mortality.

Box 6. Maximizing the health benefits from water supply, sanitation and hygiene interventions*

Experience suggests that to maximize the health benefits from water supply and sanitation interventions, it is critical to:

Think about health from the start

A common difficulty in multidisciplinary activities is that experts from one sector often develop most of the project, only involving experts from other sectors after fundamental decisions about the level of service and the types of intervention have already been made. If health benefits are a project aim, then public health specialists should be involved from the outset.

Focus on quantity as well as quality of water supply

Schemes that increase the number of public taps, in either rural or urban settings, but only move residents “along the plateau” of the consumption vs. travel time graph, will not increase household water consumption – regardless of how much water is available at the tap. Such interventions thus cannot be expected to reduce water-washed transmission of disease, and therefore can claim relatively few direct health benefits. By contrast, schemes that permit more household connections or reduce long travel times to below half an hour can be expected to lead to increased water use and a resulting reduction in disease.

Focus on changes at the household level

Programmes intended to improve environmental health must be driven by the impact they have at the household level. This is where most people (especially children) spend most of their time and are most vulnerable to contamination. Unless improvements can be shown to have an impact at the household level, they are unlikely to improve health.

Seek improved health indicators, rather than improved health statistics

Health impacts from WS&S interventions are notoriously difficult to assess. There are too many random variables to gain reliable information from statistics-based surveys. Better results come from observing practical outcomes, such as the use and maintenance status of facilities or improvements in hygiene practice like hand-washing.

*Source: Gouri Ghosh, personal communication, 2004

Overall, the inadequate water supply and sanitation services upon which the poor are forced to rely damage their health, causing relatively high health costs relative to income, an increase in morbidity, and a decreased ability to work. The vicious circle of poverty and ill-health is endemic among the poorest: poverty renders women and men ill-equipped to protect themselves and their children from biological pathogens and chemical hazards or seek treatment for illness; and their poor health, impaired ability to work, and high health costs further mire them in poverty.

Adequate water supply and sanitation, coupled with hygienic behaviors (especially hand washing, safe water handling and storage, and the safe disposal of feces) are fundamental to health because the main culprit in the transmission of water-related disease is the

“fecal-oral” cycle. Water and sanitation practitioners have a mnemonic device to describe the factors that fuel this destructive cycle – they refer to the “Five F’s”⁸:

- Fluid (drinking contaminated water and having too little water to wash) – Drinking contaminated water transmits waterborne fecal-oral diseases like cholera, typhoid, diarrhea, viral hepatitis A, dysentery and dracunculiasis (guinea worm disease). Insufficient quantities of water for washing and personal hygiene leads to water-washed disease; when people cannot keep their hands, bodies and domestic environments clean, bacteria and parasites thrive, causing skin and eye infections, including trachoma, and fecal-oral diseases are more easily spread.
- Feces (the contamination of water, soil and food with human fecal matter) – Sanitation facilities interrupt the transmission of much fecal-oral disease by preventing human fecal contamination of water and soil. It is particularly important in controlling worm infections. Because children are the main victims of diarrheal diseases (which can be either waterborne or water-washed), they are also the mostly likely source of infection; the safe disposal of children’s feces is thus critical. To balance human as well as environmental health, fecal matter should be treated as close to the point of defecation as possible.
- Fingers (unwashed hands preparing food or going into the mouth) – Recent research shows that hand washing does more for reducing child mortality and the incidence of infectious intestinal diseases than the provision of safe water or even latrines. Yet hygiene gets surprisingly little focus.
- Food (eating contaminated food) – Eating contaminated food presents the same health risks as drinking contaminated water, and careful food handling is key to combating gastro-intestinal illnesses.
- Flies (spreading disease from feces to food and water or directly to people) – Flies are particularly problematic where open-air defecation is the norm.

Breaking the oral-fecal cycle depends upon the adoption of healthful practices (like hand-washing) and use of technologies that contain and sanitize fecal matter.

⁸ United Nations Development Programme. 2004. *Water Governance for Poverty Reduction: Key Issues and the UNDP Response to the Millennium Development Goals*. New York. [Retrieved on 12 November 2004 from www.undp.org/water/pdfs/241456%20UNDP_Guide_Pages.pdf]

Box 7. Where does hygiene fit in?

Hardware alone cannot improve health very much: what matters is the way in which it is used, and the extent to which it is accompanied by efforts to promote changes in hygiene-related behavior. In some cases, this change is fairly automatic; people across the world need little encouragement to increase the amount of water they use for washing once it is readily available at the household level. In other cases, however, a significant amount of time and effort is required to alter hazardous practices which are considered “safe”, or are simply not thought about.

Even after substantial investments have been made in water supply and sanitation hardware, hygiene behavior in these areas often remains a substantial risk to health. In many cultures, for example, the excreta of young children are considered safe, and are thus not treated with the same hygienic concern as the excreta of adults. In fact, children are a significant reservoir of infection. This means that the feces of children can be just as infectious as those of adults. The practice of washing hands with soap after defecation is another example of a behavior that does not follow “automatically” from the provision of hardware, and yet which has major health implications.

According to the World Health Organization, improved water supply reduces diarrhea morbidity by 21%; but the simple act of washing hands at critical times can reduce the number of diarrheal cases by up to 35%, and additional improvements of drinking-water quality, such as point-of-use disinfection and safe storage, would lead to a reduction of diarrhea episodes of 45%. According to the Water Supply & Sanitation Collaborative Council, safe disposal of children’s feces leads to a reduction of diarrheal disease of nearly 40 percent.

Addressing water and sanitation problems in developing countries is critical to reducing morbidity and mortality. Health is often viewed from a curative perspective; it is easy to forget how effective and affordable preventative approaches can be. Improving the quantity and quality of water that households receive, improving the management of human excreta, and promoting hygienic practices, such as hand-washing and safe water storage in the home, are arguably the most effective health interventions that can be made in the world’s poorest countries. For children in particular, improving access to water supply and sanitation is one of the most effective ways of improving health and quality of life.

Box 8. Household water treatment and safe storage

Helping households improve and maintain water quality at home has proven health benefits, is cost-effective, and contributes directly to meeting the MDGs, and household water treatment and safe storage can serve as an immediate mechanism to reduce illness among the unserved. A recent study conducted among 400 households in a Malawian refugee camp indicated that point-of-use interventions resulted in 31% fewer cases of diarrheal disease in children under five. Moreover, other recent evidence demonstrates that household water treatment reduces diarrhoeal disease at levels comparable to sanitation and hygiene measures.

Promising treatment technologies include chlorination, combined chlorination/flocculation, solar disinfection, and filtration. Treatment needs to be accompanied by safe storage, which can be accomplished by using containers with narrow opening and a dispensing device such as a tap or spigot to protect collected water. These measures are particularly important because the bacteriological quality of drinking water frequently declines after collection.

Although there are challenges, particularly with regard to achieving widespread uptake and sustainability of the interventions, household water treatment offers a rapid and affordable way of reducing the global burden of waterborne disease. More information is available from the WHO International Network to Promote Household Water Treatment and Safe Storage at www.who.int/household_water.

Gender Goal. The iconic image of a woman carrying water on her head is emblematic of a lifelong burden that keeps girls from attending school, prevents women from engaging in productive work, and fetters progress toward the MDGs on universal primary education and gender equality.

Throughout the developing world, in urban as well as rural areas, the gender division of labor typically assigns to women a series of roles and responsibilities that, for the most part, men do not share. They include securing water for household needs like drinking and washing; cooking and ensuring overall household food security; and caring for children, the elderly and the ill.

These traditional roles and tasks mean that poor women are hit hardest by the inadequate services available in informal urban settlements. It is they who must spend much of the day waiting in line for water, thus forestalling their ability to engage in productive activities, adult education, or other domestic responsibilities, not to mention rest and recreation. They are in greatest physical contact with contaminated water and human waste, exposing them to a host of biological pathogens and chemical hazards, and are saddled with the unenviable task of finding a way to dispose of the family's wastewater and feces (no small challenge in areas where diarrheal diseases are endemic and sanitation facilities nonexistent). Having no safe, private sanitation facilities in areas where people are living cheek by jowl means going the whole day without relieving oneself and then risking exposure at night – a humiliating, stressful, and uncomfortable daily routine that can damage health.

In rural areas, the gender division of labor means that the impact of resource degradation is felt most keenly by women and girls, who must walk further distances to fetch water,

often of poor quality. In some countries, spending six hours per day collecting water to meet the family's needs is not unusual. In rural Africa, for instance, women commonly walk 10 km. each day to the nearest water source to fetch water for their household needs, often twice that during the dry season.⁹ The need to travel further from home to secure the family's water can expose women and girls to sexual harassment and rape – this can also happen when women who lack safe, nearby sanitation facilities move about at night in search of privacy. Women often combine their water-carrying tasks with other domestic responsibilities like gathering fuel or food, but even when that is the case, the burdens of water portage remain many, serious and disproportionately borne by women.

Box 9. Modest dreams

“At least my daughter’s education will ensure that she will get a groom who comes from a home with a toilet.”

Manjulaben, aged 38, a daily wage laborer from Nagalpur village (Kachchh district, Gujarat state)

“I do wish that I get married in a family which has the facility of toilet and separate water tap. It is a dream for me.” Barkha, aged 12, Sanjay Amar Colony, Delhi, India

From UN-HABITAT’s *Unheard Voices of Women in Water and Sanitation* project

For both rural and urban women, caring for children and other family members who fall sick with water-related illnesses, an all-too frequent occurrence, falls on their shoulders as well. Higher rates of child survival are a precursor to the demographic transition toward lower fertility rates, and having fewer children reduces women’s domestic responsibilities as well as their maternal mortality and morbidity risks.

The impact of poor water supply and sanitation services on poor women’s physical security, opportunities for adult education, overall productivity, income-generating capacity, nutritional status, time and overall health and well-being is severe. The accumulation of these negative impacts starts in girlhood. Girls rather than boys generally help their mothers collect water, and in some parts of the world this task becomes a girl’s responsibility when she is nine or ten. Collecting water is physically taxing as well as time-consuming, and when water is scarce or far from home, girls need to spend more time on this task, reducing their time in school.

The lack of adequate sanitation facilities also prevents girls from attending school, particularly when they are menstruating. Many parents simply will not allow their daughters to attend schools that do not have separate sanitation facilities for boys and girls after menarche – and few schools in poor areas do. The Millennium Project Education Task Force has concluded that schooling does not provide significant benefits until a minimum threshold of competencies is reached; the greatest gains to girls, their future children, and their societies come when girls are able to complete secondary school. If girls’ schooling comes to an end as they enter adolescence, this minimum threshold cannot be reached. Studies show that girls’ attendance at school is increased through improved sanitation. For example, in Bangladesh, a school sanitation programme has increased the enrollment of girls by 11% every year since it began in 1990.¹⁰

⁹ From WaterAid’s website at <http://www.wateraid.org.uk/>

¹⁰ From WaterAid’s website at <http://www.wateraid.org.uk/>

The disparities in girls' and boys' ability to attend school have life-long impacts, for women as well as for their future families and communities. This is why the MDG targets related to women's empowerment track educational attainment from the primary grades upward. Even women who have had just a few years of basic education have smaller, healthier families, are more likely to be literate, and are more likely to view educating their own children as a priority, even if income is held constant. According to

Box 10. How long are we going to live this way?

“There is no water to wash our hands when we use the nearby bushes, plastic bags or the only public toilet available some distance from our homes. There is always fighting on who will be next although there is a queue. Everyone watches there are no doors for privacy. How long are we going to live this way? It is affecting our pride and dignity.

Sometimes we have to go to the back of our house to defecate in a plastic bag and throw it in nearby bushes or in the gully – this is called “kitting.” The problem get worst during menstruation both for us and our daughters – they too can't attend school as there is nowhere at school for them to clean themselves, and we the mothers don't have enough water to wash our bodies and to feel clean.

We don't want our children to continue growing up this way – it is too distressing. Life like this will make it hard for our children to fit into society. My daughter would like to be a classy lady one day – she would love to marry someone who has their own sanitary convenience in their homes.”

Charlene, aged 42, Caribbean urban slum

From UN-HABITAT's *Unheard Voices of Women in Water and Sanitation* project

DfID, each additional year of female education reduces childhood mortality by five-to-ten percent¹¹.

Thus the water and gender goals interact in several ways:

- Women and girls are most seriously affected by inadequate water supply and sanitation services, as described above.
- Community action and social mobilization around the provision of basic social services like water have been shown to be a valuable entry point for promoting women's empowerment. Having a leadership role in community management of water supplies, for instance, can increase women's social capital as well as their bargaining power within the household.
- Because of differences in production, labor, responsibilities and resources, women and men have different interests in, and derive different benefits from, the availability, use and management of water. Women, for instance, generally prioritize water for domestic uses like drinking and washing, whereas men may focus on irrigation. As a result, they often have different criteria to evaluate the adequacy, equity, timeliness, convenience and quality of various interventions. Also, women and men often have different perceptions about the costs and benefits related to participation in the various types of water users' groups

¹¹ See www.wateraid.org.uk/what_we_do/the_need/241.asp

through which water use and management are organized. In addition, they differ in their ability to participate in such schemes. Young women may simply not be able to participate in community management efforts if they have small children to care for; if meetings are held at night, safety concerns or cultural norms may keep them home. All these factors can be discovered and addressed by taking a gender-sensitive approach.

THE SPECIAL CHALLENGE OF MEETING THE SANITATION TARGET

Sanitation and hygiene receive substantially less attention, funding, and priority than water supply in virtually every country the world over. It should thus not be surprising that the WHO/UNICEF Joint Monitoring Program has recently warned that, “[w]ithout a sharp acceleration in the rate of progress, the world will miss the sanitation target by half a billion people.” The international community is dangerously off track from its goal of halving the proportion of people lacking even basic sanitation services by the year 2015.

Perhaps the most daunting aspect of the sanitation target is simply the scale of the problem. Today more than twice as many people lack access to basic sanitation services as lack access to improved water supply. Meeting the Millennium Development Target for sanitation requires bringing improved sanitation to 1.4 billion people over the next ten years, or more than 383,000 people *every day*. The cost of meeting this challenge is much higher than the cost of meeting the challenge for water supply not only because so many more people must be served, but also because of the higher unit cost of sanitation infrastructure, especially for urban areas. Moreover, the socioeconomic and public health costs of failure to meet the target are much higher and much widespread for sanitation.

Recognizing the magnitude of the sanitation crisis in turn raises questions about how the global community allowed the problem to grow to such immense proportions. That at least 2.6 billion people around the world are forced to defecate in plastic bags, buckets, open pits, agricultural fields, and public areas in their communities should generate a collective outcry for immediate, concerted efforts to expand access to improved sanitation facilities. Yet coverage rates in the developing world are barely keeping pace with population growth; indeed, in some parts of Africa the percentage of households with access to sanitation is actually declining. Why does sanitation command so little attention from local and national governments, and from the international community?

A collective or an individual service?

The absence of sanitation from planning and policy dialogues can be traced in part to the lack of a national-level institution with responsibility for sanitation in the majority of countries in the developing world. This institutional vacuum, however, is itself symptomatic of a broader tension that exists regarding the allocation of responsibilities for improving and managing sanitation services. Many of the public health benefits stemming from improved sanitation are shared by the community at large, rather than accruing principally to individual households (which, it could be argued, is the case for improved water supply).¹² As such, it has been argued by some that community institutions such as local, regional and national governments have an interest in—and an

¹² For example, improved sanitation services are far more effective than improved water supply in reducing the incidence of diarrheal diseases such as cholera, thereby reducing public health costs, improving the productivity of workers, and underpinning higher academic attainment for children. While beneficial to individuals and households, these effects also have substantial macroeconomic impacts on the economies of their countries as well. See, for example, Evans, B., G. Hutton, and L. Haller, “Closing the Sanitation Gap- the Case for Better public Funding of Sanitation and Hygiene,” paper prepared for the Round Table on Sustainable Development, OECD, Paris, 10 March 2004.

obligation toward—allocating resources for sanitation improvements. At the same time, households do benefit from the increased convenience, safety, privacy, and dignity of improved sanitation facilities in their homes or neighborhoods. Some governments and development organizations, viewing sanitation in a restricted sense as simply a household amenity, have thus argued that it should be considered a household responsibility, thereby discounting the public components and public benefits of sanitation. These different perspectives on the nature of responsibility for sanitation have quite different implications for an “appropriate” institutional arrangement to support service improvements.

Perceptions about the locus of responsibility for sanitation services have also been shaped by the nature of the public and private components of water versus sewer networks. In the case of urban water supply, for example, service provision typically begins with installation of public infrastructure such as water intake and treatment facilities, transmission lines, and main distribution lines. Only once these assets are in place can households install connections to the distribution network and make use of private internal plumbing systems. Because all public components of the water system have been installed prior to these individual private connections, the costs of the entire system are known and can be allocated among consumers when setting service prices.

Historically, urban sewerage systems have been installed in a fashion similar to that of urban water supply. Infrastructure development starts with the trunk sewerage system and sewage treatment facilities, followed by the sewer network in each community. Once these public components have been installed, residents can connect their homes to the sewer network. In many developing countries, this approach has been markedly less successful for sanitation than for water supply. Sewer systems installed using this approach have often been highly under-utilized (*e.g.*, Accra, Ghana) or have not been used at all (*e.g.*, Bombay, India). In other cases, plans to install citywide sewer systems are simply never implemented because of their prohibitive cost. An alternative approach for expanding sanitation services in developing countries is clearly required.

The nature of demand for improved sanitation

Underlying these very different experiences with improved water supply *versus* sanitation are differences in the nature of demand for the two services. Considerable research has documented, even among very poor households, higher-than-expected effective demand for improved water supply (defined as willingness *and* ability to pay for a service at a particular price). Effective demand for improved sanitation, by contrast, is regularly found to be less than the cost of its provision. This is so both for private demand and for public demand for the public component of sanitation.

Many observers have suggested that low demand for sanitation is simply the result of communities’ poor understanding of the links between sanitation, hygiene, and health. In some cases this is true; often, however, households with limited resources have simply pursued other investments in a rational priority-setting process. In situations where both water supply and sanitation services are scarce or of poor quality, demand for improved access to water almost always outstrips demand for sanitation. The benefits of the former are immediate and perceptible, and they accrue to a household irrespective of whether other households also invest in improved services. By contrast, the benefits of sanitation

are generally less immediate and obvious to the household; have significant public-goods characteristics (improved health for the community as a whole); and may not materialize unless other households also act—a factor over which a given household may have little influence.

Another explanation for the low effective demand for sanitation is gender inequality. Women tend to place a higher value on household toilets than men do for a number of reasons, among them privacy, cultural norms, care-giving responsibilities, and the risk of sexual harassment and assault. Yet the limited political and personal power of women in many developing countries means that some of sanitation's strongest advocates are virtually absent from decision-making and priority-setting processes. When women have little control over household expenditures, for instance, demand as gauged by willingness to pay will not capture the true extent of household or community demand for sanitation. In addition, the unique sanitation needs of women and girls (e.g., during menstruation and during and after pregnancy) receive little recognition when discussions about sanitation and hygiene occur.

Box 11. Voices of women from Sanjay Amar slum

I gave birth to my children while I was living in the same jhuggi (slum). After giving birth to the child I do not eat food for two days and so there is no need to go to a latrine. But after two days I go to the same place in open to defecate. When I go out to defecate my elder children do baby sitting for the younger ones but there are times when the babies are left alone in the jhuggis with no one to take care of them.

Miradevi, 35, Sanjay Amar Colony, an urban slum in Delhi, India

I go out in open to defecate. Due to the continuous stare of men, I have to get up again and again in between the process of defecation.

Babita, 27 years, Sanjay Amar Colony

From UN-HABITAT's *Unheard Voices of Women in Water and Sanitation* project

A mismatch between demand for improved sanitation and the type of services provided is often implicated in cases of un- or under-utilized sanitation infrastructure, such as in Accra and Bombay. At the heart of strategies to achieve the Millennium Development Target for sanitation, then, is the recognition that institutional, financial, and technical supports must be focused principally on understanding and responding to the felt needs, preferences, beliefs, priorities, and constraints of households and communities regarding improved services – as well as being sensitive to the gender dimension of expressed demand. It is increasingly becoming evident that people are willing to pay for things that matter to them, including sanitation.

Unfortunately, little is known about the best means of promoting demand for improved sanitation facilities. One important insight from research into sanitation preferences is that, among the reasons that people invest in improved services, health does not figure particularly prominently. More frequently, households cite the convenience, privacy, dignity, safety, community status, or reduction of odors and insects that improved facilities afford them. It is thus critical to understand and exploit the right “levers” to

motivate individuals and communities to act. Treating access to basic sanitation as both a right and a shared responsibility of all households in a given community may have greater impact on attitudes and behaviors as compared to traditional appeals only to individual-level concerns about health.¹³

It is also instructive to consider how industrialized countries have approached this challenge of low effective demand for improved sanitation among households that they, too, once faced. In general, public infrastructure components have been highly subsidized by governments of industrialized countries, reflecting an understanding that the public health benefits of sanitation generate substantial positive externalities that merit public investment. In Britain, for example, urban authorities borrowed more than UK£7.7 million for sewage works during the period 1880-1891. Eventually the public provision of sanitation became “uncontroversial and just a part of every day life.”¹⁴

Similarly, for many municipalities in the US, public financing of sanitation infrastructure was seen as the only option for ensuring investment adequate to protect public health. In 19th century Boston, for example, lower-than-expected connection rates among households to the city’s new water and sewer network prompted the city to cover the cost of service pipes for all unconnected households. In 1850, an influential state Sanitary Survey concluded that government must accept responsibility for financing public sanitation infrastructure because, left to their own devices, “a large proportion” of Massachusetts residents would be “unable or unwilling to take on personal responsibility to conduct their lives in accord with recommended sanitary principles.”¹⁵ Until recently, grants of up to 70% or more were provided for innovative sanitation technologies in the United States of America.

Today, of course, scientific evidence and public awareness of the links between improved sanitation, hygiene, and health is much stronger than in 19th century Britain and America. Nevertheless, households lacking access to improved services often still need support to appreciate fully the health and economic benefits of sanitation and hygiene. Governments can sponsor public education campaigns that identify the central role that sanitation and hygiene play in controlling cholera and other diarrheal diseases, thereby encouraging safer personal habits like hand washing as well as increased household investment in sanitation. At the same time, governments must accept responsibility for ensuring the provision of the public components of sanitation infrastructure and services, investments which underpin public health and environmental objectives and for which effective demand among households will invariably be low.

¹³ Of course, along with consumer demand for sanitation, it is important to recognize several other factors that can influence the likelihood that improved facilities will be constructed. These include access to water supply; security of land tenure; awareness of various technological options; availability of materials and personnel (e.g., masons) needed for construction; and technical considerations such as availability of sufficient space to construct a latrine or bathroom, or proximity to a feeder sewer.

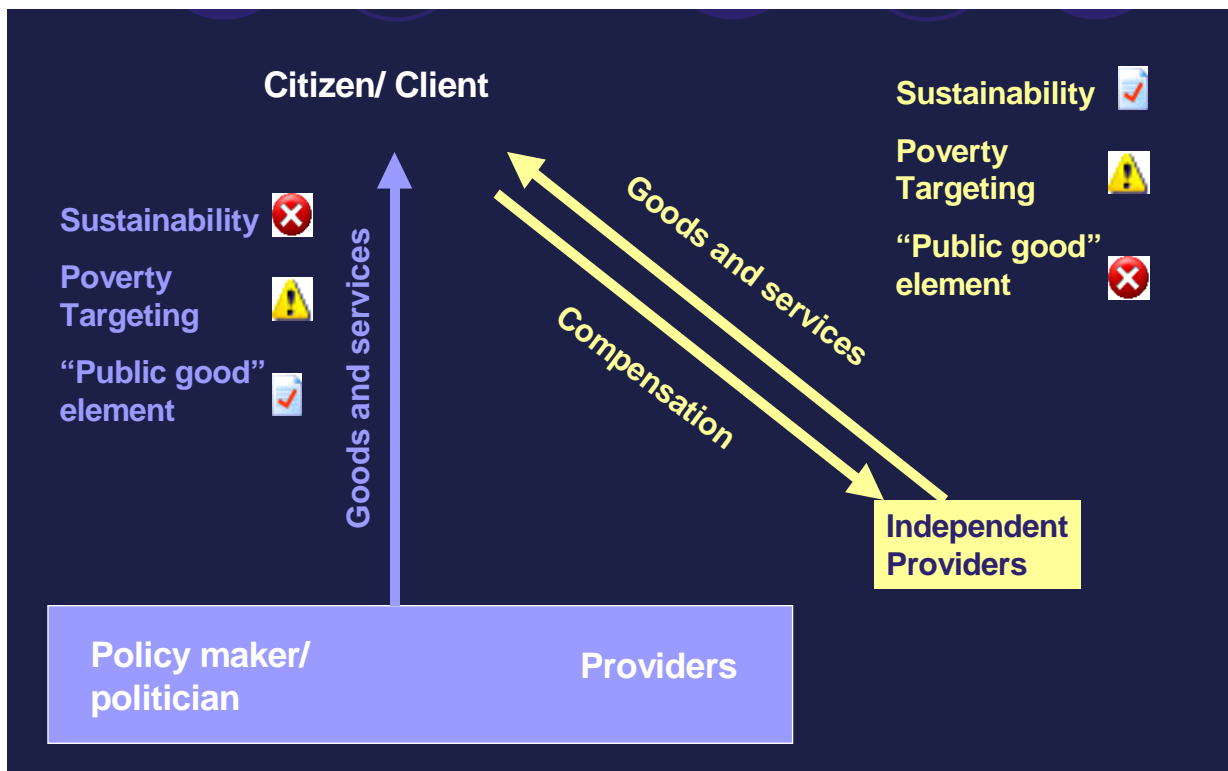
¹⁴ From Chaplin, S.E. 1999. “Cities, Sewers and Poverty: India’s Politics of Sanitation” *Environment and Urbanisation* vol 11 No 1, April 1999.

¹⁵ From Rosenkrantz, 1972, as quoted in Bartlett, S.J., *Who pays for water? Cost recovery and user fees in Boston’s public water infrastructure, 1849-1895*. Master of City Planning thesis, Massachusetts Institute of Technology.

Reorienting public institutions for sanitation service delivery

As the emphasis in strategies to expand access to sanitation shifts toward influencing household- and collective action at the neighborhood level, governments at all levels are confronted with new challenges. Progress in sanitation requires that public agencies broaden their traditional service-provision role to include encouraging and supporting desired household and community actions. Most public agencies are unfamiliar with or ill-suited for this role. Water and sanitation service agencies are typically modeled after utilities in industrialized countries, and as such are organized around the goals of maximizing operational efficiency for public sanitation components (*e.g.*, trunk sewers and treatment plants). Indeed, most water supply and sanitation agencies in industrialized nations have very little direct interaction with hygienic behavior of households at all. Hygienic household behaviors are entrenched or are promoted through other channels, and the infrastructure that underpins them (*e.g.*, reliable, abundant piped water and household toilet facilities) is universally available. In many developing countries, of course, these conditions do not apply. Institutional arrangements are thus needed, over and above those needed for normal utility functions, to target household behaviors and collective decision-making in communities, promoting solidarity, social capital, and the kind of hygienic culture that affords value to improved sanitation facilities.

Figure 1. Prevailing sanitation service delivery models



Source: World Bank World Development Report, 2003

The World Development Report (WDR) 2003 notes that in “conventional” service delivery arrangements, the same agency is often responsible for both service delivery and oversight while the “citizen/consumer” is a passive recipient rather than an active participant (Figure 7.1). As discussed above, the WDR notes that the prevailing “supply-driven” approach to sanitation has led to the installation of infrastructure that communities did not want and/or could not afford. Over time, households that were never reached with services, or who obtained services that failed or did not meet their needs, have been forced to turn to self-provision or to unregulated third-party providers.

Recent research in India indicates that as many as 8% of rural households across the country invested their own money and used small private providers to construct latrines.¹⁶ Self-provision accounts for about one million privately installed septic tanks in Manila and in Jakarta. Research in Africa confirms that the role of the small scale private sector in sanitation provision is significant.¹⁷ These findings are further supported by data from the JMP; between 1990 and 2000, the increased number of people served with sanitation reported by the JMP was much larger than the expected impacts of the public investment that occurred during this period

Reorienting public institutions to broaden their focus toward an emphasis on influencing citizen/consumer behavior, as well as toward engaging community-level institutions in planning appropriate interventions, should be at the center of efforts to expand household access to private sanitation. For many countries, such a shift in strategy has major implications for institutions both within and outside the sector. For example, the prevailing custom of linking sanitation exclusively with water supply in policy and planning should be reconsidered. Greater progress in expanding access to basic sanitation may result from forging strong linkages also with other services that engage households in a more direct and continuous manner, such as health, education, agricultural extension, and rural development. The role of local government, community organizations, and small-scale private providers should grow for household and community level services in parallel with the growth of centralized service delivery agencies to provide public sanitation services to complement private services.¹⁸

Where all three aspects of sanitation (the household level, community/neighborhood level, and the public level) remain confined within a traditional “utility” organization, partnerships with other services that engage households in a more direct and continuous manner can help infuse the agency with the new skills needed to target household and community decision-making more effectively. A forthcoming publication from the

¹⁶ From Kolsky, P., E Bauman, R Bhatia, J. Chilton, C. van Wijk (2000) Learning from Experience: Evaluation of UNICEF’s Water and Environmental Sanitation Programme in India 1966-1998 Swedish International Development Cooperation Agency, Stockholm

¹⁷ From Collignon, B. and M. Vezina (2000) Independent Water and Sanitation Providers in African Cities: Full Report of a Ten-Country Study Water and Sanitation Program

¹⁸ While many countries have already achieved this type of decentralization, others have not; many centralized water and sanitation agencies still take full responsibility for all aspects of sanitation service delivery.

WSSCC notes that the needed human resources can be found in a wide variety of locations, including:¹⁹

- government agencies: health, education, environmental, rural development, and urban planning departments, as well as local government;
- civil society: NGOs, community based groups, self-help groups, micro-finance organizations, households themselves; and
- private sector: small-scale private providers, personal hygiene product companies, building contractors, advertising agencies, and the media.

Where the number of unserved in a given area is considerable, agencies might consider employing a “franchising” approach to partnership arrangements in sanitation. In such arrangements, agencies contract with one or more large civic or private organizations that, in turn, sub-contract other smaller organizations that operate at the community level. The principal organizations are responsible for training their subcontractors, as well as for ensuring that performance is uniform and of high quality. For the public agency, the need for only a small number of contracts in the franchising model reduces administration and monitoring costs. For unserved communities, this arrangement offers a dramatic increase in locally based, accountable organizations providing improved sanitation services.

Clearly the types of changes needed to effect change in the prevailing sanitation paradigm require considerable resources and energy. Equally important is the recognition that powerful stakeholders have vested interests in seeing that the *status quo* for sanitation service provision is maintained. This observation is certainly not unique to developing countries. More than 140 years ago, middle-class Victorians in Britain failed to grasp the urgent need to increase access to basic sanitation for everyone; they felt that public expenditure on such services would be wasted and, worse, would divert scarce public resources from more important needs. The same concerns exist today in countries seeking to meet the MDGs, and are compounded by the institutional barriers of dismantling organizations which are structured to deliver the wrong sorts of services. The costs of such radical institutional change may simply be too high for some politicians. As a result, some countries may prefer to take a gradual approach to changing the way services are offered, perhaps by experimenting in geographically defined pilot areas or by shifting staff on temporary reassignments. The ultimate goal should be having the right skills and mix of staff working at the right locations.

Changing roles for government

Public water supply and sanitation agencies are thus being asked to pull back from many of the service-provision activities they are comfortable with, as well as to develop new capacities or partnerships for activities that promote and respond to demand for improved sanitation at the household and community levels. For their part, national governments should assume responsibility for the broad overall strategic planning for sanitation

¹⁹ WSSCC, USAID, UNICEF etc (forthcoming) *Sanitation and Hygiene Promotion: Programming Guidance* WSSCC Geneva

services, and must also strengthen and recommit to their role as a regulator of services, promoting innovation and expansion of access while also protecting both citizens and the environment.

Shifts in the way public resources are used for sanitation are also in order. The case can clearly be made for public investment in collective assets such as trunk sewers and wastewater treatment plants, as well as sanitary facilities in schools; as noted earlier, however, at the household and community levels evidence suggests that the most effective use of public funds may be in powerful marketing and promotion of sanitation and hygiene. Supporting ancillary services such as microfinance may also help households and communities to express latent demand for service improvements, as well as support an emerging market of small-scale service providers who can respond to varied and changing demand at the community and household levels.²⁰

This is not to say that there is no role for targeted subsidies to increase access to sanitation by poor households. As noted previously, sanitation and hygienic behaviors have significant positive public health impacts, which justify public investment. At the same time, the implementation of subsidy programs for sanitation—particularly latrine construction programs in rural areas—have focused largely on funding of hardware with little or no attention paid to the critical issues of community members’ felt needs, priorities, and beliefs. As a result, many of these programs fail because they do not address a principal constraint for sanitation improvement; low expressed demand, not affordability, was at the heart of the problem. In other programs, households (particularly the poorest) are unable to make up the funding gap between the subsidy provided and the cost of the standard facility offered. In addition, problems with technology choices, including too few options, inappropriate designs, or poor construction, undermine households’ confidence in the program and their willingness to risk investing scarce family resources.

It is not surprising that a discussion of government’s role in improving access comes back to the same themes that underpin the discussion of traditional sanitation providers. Without an emphasis on policies and planning strategies that embrace and respond to local knowledge and priorities, progress in expanding improved sanitation services in the developing world will continue to be slow. Governments can encourage these shifts in the sanitation sector by:

- commissioning (and funding) research into communities’ priorities, needs, preferences, and practices, as well as into factors that motivate behavior change;
- funding an effective national hygiene promotion program;
- funding an effective national sanitation marketing program;

²⁰ There is a pressing need for more analysis of the most effective ways of utilizing public funds to leverage increased access. The success of approaches such as that adopted by ZimAHEAD in Zimbabwe, and the total sanitation campaign in Bangladesh certainly point to the need to focus on and support local decision making. A recent evaluation of hygiene promotion programmes also suggested that their impacts are robust and long lasting (Bolt, Eveline (2004) *Are changes in hygiene behavior sustained?* and Cairncross, S. and K. Schordt *It does last! Some findings from a multi-country study of hygiene sustainability* in *Waterlines* Vol 22, No 3 Jan 2004.) Further work is however needed to evaluate the conditions under which different approaches work best.

- supporting policies that spur expansion of services, such as the provision of microcredit and support for small-scale independent service providers;
- promoting and financing innovations in low-cost sanitation technologies, especially those appropriate for congested settlements;
- requiring and financing separate sanitary facilities for girls and boys in schools as well as hygiene curricula;
- targeting public funds toward elements of sanitation systems whose public benefit is greater than the private benefit (*e.g.*, trunk infrastructure, shared facilities, environmental infrastructure, and household facilities for the small proportion of households whose effective demand is not high enough to obtain hygienic sanitary facilities);²¹ and
- supporting the development of community-based “franchising” approaches that are flexible, sustainable, and replicable on a large scale.

New technologies or better use of existing technologies?

Clearly innovation is needed in the institutional, policy and financial arenas in order to meet the Millennium Development Goal for sanitation. With respect to technical innovation, most experts agree that a full complement of technologies is now available for the provision of safe and reliable sanitation services in almost any setting.²² For many countries, however, sanitation planners are unable to take advantage of many of these technical options. They are constrained by policies, planning regulations, technical norms and standards, and conventions that limit the range of sanitation options.

Technical conventions and standards are usually developed for good reasons, and often when they are promulgated they embody the technological “state-of-the-art.” Often, however, standards constrain innovation and eventually hinder progress toward access targets. This is particularly true for sanitation norms that have been adopted from other countries or regions without sufficient adaptation for local conditions. Furthermore, written norms tend to reflect an idealized solution in which a uniformly high level of service is provided. While desirable in the longer term, such standards may be prohibitively costly for immediate use, may no longer be necessary as a result of technological advances, and/or may be irrelevant for local circumstances (*e.g.*, norms that do not apply to highly congested urban areas or dispersed rural districts).

Innovation and flexibility with technical standards will allow developing countries to expand sustainable access to sanitation more rapidly and cost-effectively. Technical designs should also reflect the new emphasis on local decision-making that is

²¹ The role of public funding in urban sanitation is crucial. In congested urban areas, shared infrastructure or systems of waste disposal are essential if household actions are to result in a cleaner and healthier living environment.

²² It is important to note, however, that progress towards the environmental sustainability goal is still constrained by the lack of sanitation technologies that address waste management adequately. Technical advances in such areas as effective, affordable and simple-to-operate sewage treatment plants that can be located close to residential areas; drainage and solid waste disposal; and urban wastewater treatment and management in large urban agglomerations should therefore be promoted and accelerated.

increasingly infusing planning and policy work in the sector. For example, allowing households, neighborhoods, and communities to choose from among a range of technological options based on their preferences and willingness to pay—rather than requiring a uniform standard across an entire city or region— would result in a self-selected technological mix, accelerate progress, and bring improved services to more households in the short term. Decentralizing urban sanitation planning allows phased implementation of affordable investments within different zones of a city, thereby overcoming the constraint of the lumpiness of investments, especially in large urban areas. Connecting public sanitation infrastructure to neighborhood-level infrastructure—rather than to household-level infrastructure, as is done in the developed countries— allows for more rapid and cost-effective progress, and also helps create pressure for households to join in collective action to improve sanitation within their communities.

Changing technical norms and standards for sanitation services can, however, be very challenging. Entrenched resistance may arise from technocrats who have a stake in preserving the *status quo* and whose training is rooted in accepted practices. Organizations whose culture does not encourage or value innovation may also resist such changes. Elected officials may be reluctant to champion the relaxing of norms, lest they be perceived as advocating for “sub-standard” sanitation services to the public. It is clear, however, that many governments cannot afford water-borne sewerage sanitation for all, and that “top shelf” technologies are not a cost-effective option for many of the communities and households that currently lack access. This is an area in which the international community clearly has an important role to play. Not only can international organizations support (preferably indigenous) research, development, and piloting of appropriate sanitation technologies; they should also undertake parallel policy advice and efforts to encourage the adoption of appropriate standards in countries seeking to expand sanitation coverage to the unserved.

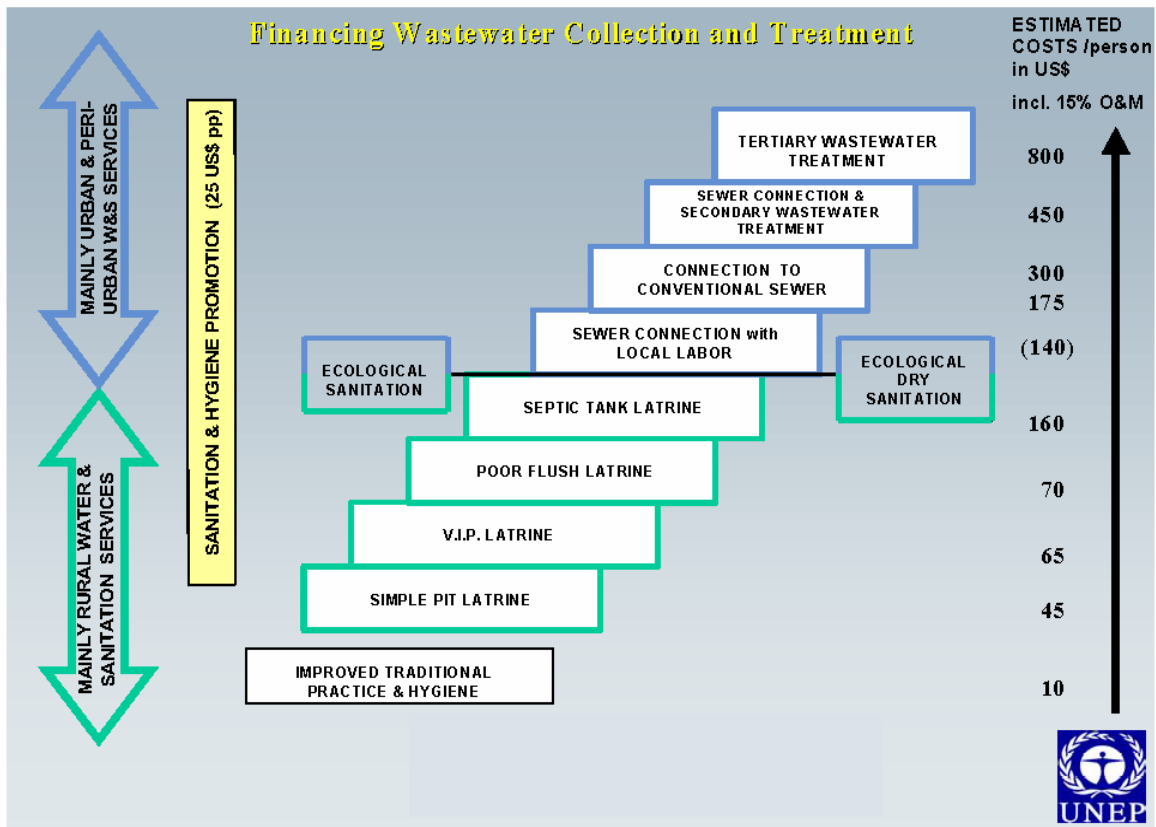
Alternative planning approaches for urban sanitation

Considering the difficulty that planners have had with traditional “supply-oriented” approaches to sanitation infrastructure installation, a number of innovative alternatives have emerged that deserve attention in the Millennium Development context. As one example, experiments with reversing the service provision chain for urban sewerage have occurred in several developing countries. Instead of investing first in wastewater treatment facilities and trunk sewers, priority was given to providing an initial minimal level of sanitation services to households, as well as some mechanism for removing wastes from the community. For network systems, initial investments thus include some form of hygienic private or shared toilet facility for households, along with a feeder sewerage system that carries wastes safely away from the neighborhood. For on-site systems such as those using septic tanks, emphasis should be put on the installation two parallel systems of soil absorption systems that should be used one at a time and interchanged on an annual basis. They should also be supported by a fleet of septic-tank-emptying trucks together with public facilities for septage treatment. Similarly, facilities should be provided for pit-emptying services for on-site facilities like ventilated improved pit latrines and pour-flush latrines.

Because these household- and community-level sanitation services are those whose benefits are most readily perceived by households, they are also the services for which households tend to be most willing to pay. Hence it should be possible to treat household and neighborhood sanitation infrastructure and services as private facilities exclusive to the communities concerned. Many cities in the developing world, such as Manila and Jakarta, have achieved this minimal level of sanitation service at household level for millions of people. In most cases, however, such investments have not been followed by the development of community or public level sanitation infrastructure, such as feeder and trunk sewerage systems, to convey the household level wastes away from the community for treatment and safe disposal. As a result, septic tank and feeder network effluents regularly flow into open streams and drainage channels, creating public health risks, environmental damage, and unpleasant living conditions. Even in the many cities of Latin America where relatively complete feeder and trunk sewerage systems have been constructed, only about one third of them have sewage treatment plants. Public health concerns are thus generally addressed in the immediate neighborhoods, but environmental damage from untreated waste continues unabated, often affecting the poor who live downstream.

The term “sanitation ladder” is often used to describe these types of planning approaches that seek to make progress in a gradual way (Figure 7.2). Starting with immediate, household-level access to sanitation facilities (the “first rung”), then moving gradually toward collective infrastructure components such as feeder sewerage at the community or neighborhood levels and eventually to trunk sewers and treatment plants. This approach has clearly helped to make progress in cities that would otherwise have taken much longer to move toward the top of the sanitation ladder. At the same time, achieving localized sanitation improvements can actually generate environmental pollution and, at times, health risks for downstream neighboring communities. How should such tradeoffs - between short- and long-term, and between access to basic sanitation services, (on the one hand) and health- and environment-related benefits (on the other) - be managed? How long a transitional period, *i.e.*, between the attainment of basic sanitation for households and concomitant production of negative environmental externalities, should be tolerated? These are difficult policy questions with which countries and their international development partners will continue to grapple.

Figure 2. Costs of various services on the “sanitation ladder”



Source: *Financing wastewater collection and treatment in relation to the Millennium Development Goals and World Summit on Sustainable Development targets on water and sanitation*, Governing Council of the United Nations Environment Programme, Eighth Special Session/Global Ministerial Environment Forum, Follow-up to the World Summit on Sustainable Development: contribution of the United Nations Environment Programme to the forthcoming session of the Commission on Sustainable Development

Breaking the full set of sanitation objectives into manageable steps—from the safe collection, storage, and disposal or re-use of human excreta, to the treatment and disposal/re-use/recycling of sewage effluents and hazardous waste—can help create opportunities for progress where the entire challenge seems overwhelming. In many cases, more progress can be made by first focusing on a few solvable problems rather than by waiting until adequate resources and support are available for a full-scale intervention. Indeed, this phased approach was pursued in many of the countries that now enjoy universal access to sanitation services. This is not to say that the approaches of 100 years ago should be followed blindly; much more is known today about, for example, environmental protection; this should generate more effective and sustainable solutions. Yet while it may be desirable to develop a holistic strategic plan for improving sanitation, practicality and resources may dictate that a phased or stepped approach must be taken for implementation of such strategic plans. An important first step to addressing this problem is to clearly define responsibilities for household, community and public level sanitation service provision.

Alternative planning approaches for rural sanitation

The scale problems in sanitation are even greater in rural areas, where the absolute poor in low-income countries most off-track in reaching the sanitation targets tend to be concentrated. The majority of the rural population live in sometimes remote, dispersed settlements; others, in countries like Egypt, live in very high density settlements. The number of such communities and the wide areas over which they tend to be distributed makes reaching them a formidable task. What is required is a significantly scaled up approach that can be applied simultaneously over a wide area - an approach that centers on community mobilization and actions that support and encourage such mobilization; and that supports community members in their efforts to discuss sanitation practices with households that are within their boundaries and devise locally appropriate and affordable strategies for improving services. Where necessary, government, civic, and external organizations may support these community planning processes by providing information, technical support, or even financial support or loans for facility construction.

One such approach is the “franchise” approach described earlier. It is being tried in community-based sanitation programs in Indonesia, where parent NGOs are establishing “daughter” NGOs at the local level to mobilize communities to plan and provide themselves with sustainable access to basic sanitation. Depending upon local circumstances and preferences, services may be provided at the household, neighborhood, and community-wide level.

Key to this approach is the “rights and responsibilities principle,” which provides that *all people in a village community have both the right to a clean and healthful living environment and a shared responsibility to avoid disposing of their wastes in ways that adversely affect the cleanliness and healthfulness of their living environment*. This principle of rights and responsibilities is central to efforts that focus on total sanitation coverage or “no open defecation” within project communities. Examples of total sanitation coverage include the Orangi Pilot Project in Pakistan, the condominal and simplified sewerage system in Brazil, and community-led total sanitation (CLTS).

CLTS has been implemented in a number of countries such as Bangladesh, India, Cambodia, Indonesia, Mongolia, and Zambia. It has also been implemented for over 20 years in rural sanitation programs in Tanzania (in the Wang’ombe rural sanitation project financed by UNICEF) and in Zimbabwe. As practiced in Bangladesh, it starts with strict proscriptions against capital subsidies.²³ It begins with a community-organized appraisal of current sanitation practices (typically open defecation). Residents undertake a mapping exercise in which their households and places where defecation occurs are identified. Facilitators accompany residents on a tour of the community. The group visits defecation areas; calculates the amounts of feces produced; analyzes routes of contamination (*e.g.*,

²³ Whereas the CLTS approach explicitly prohibits subsidies for the construction of sanitary facilities, there may be cases in which cross-subsidies among households, and/or direct subsidies to poor households, are justified. Given the wide range of socioeconomic characteristics, technical challenges, and costs of providing improved service found across unserved communities, blanket principles regarding subsidies are inappropriate.

through dirt, flies, and animals); and estimates how much excreta each person in the community ingests each day. The resulting combination of disgust, shame, religious precepts for cleanliness, and self-respect typically trigger a collective decision to end open defecation in the community.

Alternatives to open defecation are pursued by households as per their preferences and ability to finance the improvements; simple pits and various types of latrines are typically installed. Emphasis is placed on local designs and affordable materials. Communities that have undergone the CLTS process often erect signs at the entrances to their villages proclaiming that they are totally sanitized. The resulting social solidarity can provide a base for further collective action.

Moving forward: Galvanizing support for sanitation and hygiene

The absence of sanitation and hygiene from much of the discussion about water, health, and development has found various explanations over the years. What is clear is that excreta and its disposal have been, and continue to be, unpopular subjects from the local to the international level. Without strong champions to raise public awareness and generate concern, the sanitation crisis has not been met with anything like the kind of response necessary to make substantial and sustainable gains. It is instructive to consider how another “difficult” topic—HIV/AIDS—was freed from its own cultural taboos and transformed into a leading global health concern.

It is true, of course, that HIV/AIDS has affected both wealthy and low-income families in both rich and poor countries around the world, providing a foundation for solidarity that is broader than that in the case of sanitation. At the same time, the way in which that solidarity was cultivated—through simple, consistent messages and a single, coherent call for action—has much to do with the successful marshalling of support and resources to combat HIV/AIDS. For sanitation, the impact of a similar coordinated campaign of awareness raising has already been felt, as evidenced by the addition of the sanitation target to the original Millennium Development Goals in Johannesburg.

The Water Supply and Sanitation Collaborative Council deserves much of the credit for leading this international call to action for sanitation. The Council’s advocacy campaign “Water, Sanitation and Hygiene for All (WASH)” has had considerable impact at the international level. The Council’s effectiveness arises from its structure as a coalition of key sector players, whose efforts and messages have been effectively coordinated to reinforce one another. The WASH campaign has also highlighted the importance of simple and accurate information for shaping opinion and raising awareness. Several key information gaps still remain which, if pursued, could help identify the most effective and appropriate ways to increase access to sanitation.

At the national level there is also a need for coherence of action, and for information. Focused efforts to document the ground reality of sanitation practices can help initiate dialogue among decision-makers, professionals, communities, and households about ways to address deficits in service. Simply studying what people are doing, and exploring how they have changed their hygiene habits over time, can also prompt

discussion and debate.²⁴ Eventually, however, decisions regarding public funds and/or institutional restructuring to advance the sanitation agenda will require the cooperation of elected officials. Again taking a lesson from global experience with HIV/AIDS, it must be recognized that politicians have a stake in significant development issues; they should be drawn in, rather than excluded, from the debate.

Finally, the strengths of the WASH campaign can and should be replicated at local level. By drawing more people into the process of promoting sanitation, both the strength and the coherence of the message will grow until it is undeniable. Developing a critical mass of concerned, vocal advocates for improved sanitation within communities is not only helpful for propelling change at all levels; it is essential for sustaining the service improvements effected far beyond the Millennium Development process.

²⁴ Various tools exist for promoting dialogue on sanitation. The construction of simple latrine acquisition curves, for example, can force professionals into a discussion with households about what has changed over time, and the reasons why some households have made investment and behavior decisions about sanitation and hygiene while others have not.

RELEVANCE OF CROSS-CUTTING THEMES

The cross-cutting themes of the Forum are:

1. New models for financing local water initiatives;
2. Institutional development and political processes;
3. Capacity-building and social learning;
4. Application of science, technology, knowledge; and
5. Targeting, monitoring, and implementation assessment.

Each of these areas is critical to dramatically expanding water supply and sanitation coverage. This chapter will address each area in turn.

1. NEW MODELS FOR FINANCING LOCAL WATER INITIATIVES

Poverty is a principal impediment to increasing access to services, from the household to the national level. Within communities, some households simply cannot afford the costs of improved services without assistance from other families or from the state. Many poor countries simply do not have the financial resources either to provide water services to all or to sustain their operation.

Compared with wealthy households that use network services, many poor households pay a much higher proportion of their income for water and sanitation services delivered by informal vendors and service providers. The poor also regularly pay much higher rates for these informal services than the better-off do for network services, despite the fact that the informal services provide poorer quality water, significantly smaller quantities of water, and considerably inferior sanitation services. Perversely, the very fact that the poor pay more for water than do the rich is sometimes cited as proof that even the poorest can “afford” to pay for water. This line of reasoning is specious at best. For people whose poverty forces them to make a choice between spending money on water and spending money on other very basic needs, like sufficient food or adequate shelter, water is plainly *not* affordable.

Furthermore, often the only way the poor are able to pay so much for their water supply and sanitation is by making small, but frequent, payments. Hence, when improved services become available (for instance, through a utility) and the poor are required to pay their tariffs at less frequent intervals (for instance, monthly), experience shows that they are often unable to cope, given the numerous demands on their limited incomes and the resulting inability to save. This suggests that mechanisms that allow prepayment or pay-per-use could be a factor in improving access.

Thus, while institutional reform is often necessary for the expansion of access to water supply and sanitation, it is often not sufficient. Financial investment is also required, whether from national or subnational government tax revenues; user charges; cross-subsidies from users who can afford to pay; private-sector investment; or official development assistance.

A variety of obstacles limit access to these sources of finance in low-income countries, however. Water and sanitation utilities in the poorest countries, for example, often have weak managerial and financial capacities. They are unable, for a variety of reasons, to generate sufficient cash flows to meet recurrent expenditures, much less to make the investments necessary to expand coverage to unserved communities. Towns and municipalities in developing countries typically have limited access to loan financing facilities. Combined with limited tax revenues and unreliable transfers from central government, these local administrations are often unable to provide much support to public service providers.

In some countries, governments have been reducing investment in water supply and sanitation with the hope that private-sector investments will fill the gap. Recent evidence suggests that this expectation is often overly optimistic; annual private-sector investment in water supply and sanitation for developing countries has continued to decline each year since its peak in 1997.²⁵ The features of investment in water and sanitation facilities—including the “lumpiness” of major infrastructure costs, the long payback periods of 20 years or more, and the political difficulty of charging cost-recovering tariffs—make it difficult to attract private investment. The frequency with which water and sanitation concessions in both developing and industrial countries have been postponed or cancelled over the past several years (often due to currency shocks) is evidence of how difficult it is to design and implement successful private-sector involvement in water and sanitation services.

This decline in private-sector investment in water supply and sanitation for developing countries has taken place against the backdrop of an ongoing and heated debate about the appropriate roles for the private sector in this area—a debate that has been polarized around conflicting ideological positions and has led to major conflicts, especially around large-scale projects involving multinational companies. The cost of conflict generated a stalemate of sorts amongst stakeholders on how best to move forward with improving access to water supply and sanitation, with obvious consequences for the attainment of target 10, especially in middle-income countries. While there are signs that dialogue around private sector involvement has recently become less polarized and more productive, still greater constructive engagement around this issue is needed; such engagement could be enhanced, for example, through an independent, balanced multi-stakeholder assessment of the impacts of public and private sector participation that would glean lessons from past experiences and enhance decision-making on service delivery options.

Trends in official development assistance indicate that support for water supply and sanitation infrastructure is very modest, both in relation to support provided to other infrastructure sectors and in terms of what is necessary to meet the Millennium Development Goals for water and sanitation. Nor is support directed to those countries that need it most: A recent report by the Development Co-operation Directorate of the

²⁵ In nominal terms, official development assistance for water and sanitation have declined since 1995, fluctuating between \$18 billion in 1996 and a low of \$13.5 billion in 1999. These commitments were about \$16 billion in 2002.

Organisation for Economic Co-operation and Development shows that less than 60 percent of population has access to an improved water source. Moreover, aid to water and sanitation is concentrated in certain countries, with the ten largest recipients receiving 53 percent of the total. In addition, the prerequisite condition normally prescribed for official development assistance—that for effective and accountable use of such aid, certain reforms must be in place—has been a constraint to the countries most in need for help in meeting target 10. At the same time, few developing countries give priority to investments in infrastructure, including water and sanitation infrastructure, in their investment programs.

In discussing financial constraints, a distinction should be made between the absolute lack of resources for expanding water and sanitation coverage and the need to redistribute potentially sufficient existing resources, so that target 10 can be met. Among the poorest low-income countries, pervasive poverty creates binding financial constraints to the expansion of coverage. There, no progress can be made in achieving the Millennium targets for water and sanitation unless external aid is increased and refocused. In some countries with higher levels of income, sufficient financial resources exist to provide universal coverage, but their concentration among wealthier households leaves a substantial proportion of the population unserved. For these countries, emphasis must be placed on enacting the policy and institutional reforms necessary to redirect internal resources to benefit the poor.

Box 12. Targeting financing for women in South Africa and India

In Mabule village in *South Africa*, the Mabule Sanitation Project was developed to respond to serious problems of inadequate sanitation facilities and a high prevalence of diseases such as cholera. For many women and girls, visiting the sanitation facilities had become very difficult because of the poor construction and hygiene. The project is a joint initiative of the Department of Water Affairs and Forestry (DWAFF) and the community, with funding from Mvula Trust. The DWAFF agreed to provide funding for sanitation projects in communities where there was gender-balanced decision-making. The project established a brick-making project for latrine construction and to generate cash, and provided promoted hygiene education for women. Because of these, the community now has safe, hygienic and attractive toilets and improved health and hygiene. There is increased acceptance of women's leadership roles by community members, local government and NGOs, as well as an increased collaboration between women and men. The brick-making project employs up to 10 people, six of whom are women, and the community has access to affordable bricks.

From Jabu, M. (forthcoming). South Africa: Women in Sanitation and Brick Making Project, Mabule Village. In: Office of the Special Adviser on Gender Issues and Advancement of Women, *Gender, water and sanitation: case studies on best practices*. New York, United Nations (in press)

The Self-Employed Women's Association in *India* (SEWA) focused on gaining access to water for productive enterprises, which are often part of the so-called self-employed workers segment. Today more than 93% of all workers in India are considered self-employed workers, more than half of whom are women. SEWA has helped selected areas in India to develop plastic-lined ponds for water conservation, with technical support and training provided by the Foundation for Public Interest (FPI). Local women are now managing their own village ponds, including all book-keeping and accounts. In eight villages of Banaskantha district of Gujarat, women have formed their own water committees. Through these they undertake contour binding, building checkdams, repair of village ponds and other water conservation related construction.

Makiko, W. (2004). *SEWA The Self Employed Women's Association of India: Self Employed Women's Workers*. See: <http://www.gdrc.org/icm/makiko/makiko.html>; and <http://www.sewa.org>

Across all countries, meeting the Millennium Development Goals for water and sanitation requires adequate resources for extension, rehabilitation, and operation of water supply, sanitation, and wastewater treatment infrastructure, as well as for hygiene promotion and public education programs (Box 11). The financing strategy to be adopted by each country to meet the costs of achieving an often dramatic expansion of water supply and sanitation coverage—including who will foot the bill and how—depends principally on a country’s income level and whether the majority of the unserved is above or below the poverty line.

Box 13. Meeting target 10: what will it cost?

Estimating the resources required to meet the Millennium Development target for water and sanitation requires analyses at two levels: the global level and the national level.

Global-level estimates are helpful in giving a sense of the magnitude of the financing required. Global financing cost estimates range from \$51 billion to \$102 billion for water supply and from \$24 billion to \$42 billion for sanitation for 2001–15. There is no “absolute” cost figure, as much will depend upon the technologies adopted and country-specific preferences and conditions. Taking an average would yield \$68 billion for water and \$33 billion for sanitation, for a total of \$101 billion. That amounts to \$6.7 billion per year -- less than half what Europe and the United States spend annually on pet food (\$17 billion).

At the national level, however, the critical question for developing countries is, How much it will cost to meet the target in their own country? The UN Millennium Project has developed a methodology for carrying out national-level needs assessments. This methodology is discussed in detail in the Task Force on Water and Sanitation report, *Health, Dignity and Development: What Will it Take?* A needs assessment starts by identifying needs and the necessary “interventions”—broadly defined as goods, services and infrastructure—required to meet those needs. Then coverage targets to be achieved by 2015 are defined for each set of interventions. Using detailed investment models, countries can then project the human resource, infrastructure, and financial needs for meeting the water and sanitation target. Additional information on these needs assessments is available at www.unmillenniumproject.org.

The methodology allows countries to determine the cost of the following set of interventions required to meet target 10:

- Extension, rehabilitation, and operation of the water supply and treatment infrastructure, as well as sanitation and wastewater treatment infrastructure.
- Hygiene education, community mobilization, and behavior change programs.
- The extension of infrastructure for water storage and transport coupled with Integrated Water Resources Management (IWRM) to ensure adequate supply of water for domestic, agricultural and industrial use, as well as ecosystem functioning.

Compare, for example, the situation in Indonesia with that in Mali. Indonesia is a middle-income country, home to roughly 62 million people without access to sanitation and 44 million without access to water. Approximately 14 million Indonesians live below the poverty line. Mali, a low-income country, has roughly 1 million people without access to sanitation, 4 million without access to water, and 8 million below the poverty line. Assuming that all those without access to improved services are living below the poverty, then the unserved population would be distributed as in Table 2.

Table 2. Distribution of the population without access to basic sanitation in Mali and Indonesia

	Mali	Indonesia
Living below poverty line	1 million unserved living in poverty	14 million unserved living in poverty
Living above poverty line	0 unserved living above the poverty line	48 million unserved living above the poverty line

For the world's poorest countries, such as Mali, a viable financing strategy for meeting the Millennium Development Goals for water and sanitation requires substantial external finance. Improved mechanisms for mobilizing domestic resources and financing are, of course, important, but alone they cannot solve the financing problem that these countries need to overcome to meet the Millennium Development Goals. For this reason, it will be imperative that:

- All official development assistance to the poorest countries that are significantly behind schedule for meeting the Millennium Development Goals be provided in the form of grant or grant-like support.
- Low-income countries develop poverty reduction strategies, together with medium-term expenditure frameworks, that include explicit provisions for meeting the water and sanitation targets. Donor methodologies must be changed to allow countries to develop strategies that realistically address the challenges of meeting the Millennium Development Goals; those countries whose strategies are technically, socially, and environmentally sound and focused on attaining target 10 should be afforded grant or grant-like financing to support their efforts in expanding access to services.
- Subsidies for capital expenses (and, where necessary, for operating costs) be established to ensure equitable access to basic infrastructure services. Capital costs for water supply and sanitation programs in rural areas, some small towns, and urban slums may need to be partially or wholly subsidized. Care must be taken to ensure that the particular strategies adopted (for example, capital grants or lifeline tariffs) are targeted to poor households and are not merely benefiting wealthier consumers with network connections. Subsidies should focus on expanding access to service rather than reducing the cost of consumption.

The financing strategy for water and sanitation in middle-income countries—such as Indonesia, as discussed in the example above—must rely much more on strong national action. Many, if not most, of these countries do not require external grant-based financing to meet the water and sanitation targets; they can typically access private capital markets for any incremental resources needed, provided they can show that the loans will be repaid. To do this, they may need assistance to avoid some of the financial risks inherent in the current international financial architecture, or even international technical support in designing appropriate measures to attract and manage financing effectively. At the

household level, increased access to credit or small loans can often unleash latent demand for improved services as well. Where significant regional and community disparities exist, governments in middle-income countries have a critical role to play in facilitating

Box 14. Financing the Missing Middle to Meet the MDG's

The purpose of UNDP's Local Entrepreneurship Facility (LEF) is to develop markets of Small and Medium-Size Enterprises (SMEs) in UNDP's core environmental service areas: water, energy, biodiversity, climate, and drylands. In doing so, UNDP follows the 2004 mandate of the UN Commission on the Private Sector and Development to "unleash entrepreneurship" by a) "developing broader financing for entrepreneurs"; b) "building leadership and business skills training"; c) "brokering partnerships for basic business services".

UNDP's LEF is well positioned to improve the 'missing middle' and its risk-return profile, especially in the spectrum between community-based enterprises and the smaller SME sector (< 100 employees or \$5 million in assets). Through delivery of strategic grant finance and technical assistance in partnership with commercial finance and services by traditional and non-traditional financial intermediaries, the LEF will substantially increase the availability of Capital, Capacity, Customers, and Conducive Policies (the '4Cs' of enterprise development) to the local, environmental SME sector in a selected range of global and national markets for service delivery.

The LEF will help private financiers lower the incremental risk associated with environmental SMEs by providing grant capital for early-stage businesses, guarantee finance, enterprise development services and other technical assistance, as well as social and environmental performance monitoring. The facility will deliver in three areas: 1) Grant and blended Grant-Loan Finance; 2) Enterprise Development Support (EDS) and 3) Monitoring and Evaluation (M&E).

national financial policies that ensure equal access to services among all citizens. Where necessary, they can secure loans from regional and international banks and financing institutions. Finally, it is important to note that in many low- and middle-income countries, merely reallocating existing resources—by reducing subsidies to the better-off sectors and communities in order to prioritize service expansion to the poor—is all that is needed to achieve target 10.

2. INSTITUTIONAL DEVELOPMENT AND POLITICAL PROCESSES

In order to put forward effective recommendations for action to meet the MDGs, it is first necessary to analyze what is holding us back. Understanding why two in every ten people in the developing world lack access to water supply, and five in ten lack access to sanitation services, is fundamental to identifying effective strategies for meeting Target 10. Clearly the explanations vary across communities, countries, and regions, but a common set of *political and institutional* challenges confronts most developing countries in their quest to expand water supply and sanitation services.

Political constraints

One of the chief constraints to expanding water supply and sanitation coverage is the lack of political will, by which we mean an absence of political leadership and government

commitment to allocating sufficient national resources to the sector, and/or to undertaking the reforms necessary to improve performance and attract investment.²⁶

There are many underlying reasons for a lack of political will. For decision-makers in finance ministries, for example, investments in water supply and sanitation are perceived as having lower returns as compared to funds spent in other sectors (e.g., roads, energy). Another reason is the failure of technical specialists, civil society actors, and others to make a compelling case to decision makers concerning the social and economic benefits of access to water supply and sanitation services. It is easier to make the case where political leaders as well as policy and decision makers are themselves aware or convinced of the social, economic, environmental and spiritual benefits from access to water supply and sanitation. Politicians, in particular, tend to respond to public pressures and demands from their constituencies; hence they tend to give higher priority to water supply in response to the higher demand arising from the perception of higher private benefits from access to water supply. Experience shows that where political leadership and commitment have been accompanied by social marketing, significant progress has been made not only in access to water supply, but also to sanitation.

The capture of water and sanitation planning and institutional processes by powerful political interests also acts as a barrier to service expansion. The kinds of changes needed to prioritize improved water supply and sanitation services to poor households often threaten *status quo* arrangements that confer substantial benefits on politically influential groups. The resistance that often emerges can be difficult to overcome, particularly when vested interests exploit the plight of the unserved to argue against policy or institutional reforms. Building broad-based, informed coalitions, ideally led by an influential political “champion,” is critical for mounting initiatives that prioritize the poor and redirect resources toward low-income households.

Indeed, information can be one of the most effective tools for overcoming political resistance. Decision makers often need education about the social and economic benefits of improving water supply and sanitation in order to make a case for prioritizing the sector in policy and planning processes. Public education campaigns, such as the “report card” and public meeting approaches employed in parts of South Asia, can help mobilize broad support and exert pressure for change on elected officials. Equally important, civic organizations and the public need information regarding the ways in which existing subsidies are captured by middle- and upper-income households and prevent expansion of service to the poorest.

Broad policy and institutional reform is also essential for reducing political interference in the day-to-day operations of water and sanitation agencies in many countries. So long as WS&S service providers are reliant upon the state for budgetary transfers, and so long as agency staff are vulnerable to interference by officials in decisions related their

²⁶ For example, most of the world’s poorest countries did not include MDG Target 10 among their priority objectives in their Poverty Reduction Strategy Papers (PRSPs). See: M. Mehta. 2002. *Water supply and sanitation in PRSP initiatives: A desk review of emerging experience in sub-Saharan Africa*. Water & Sanitation Program..

careers, priority setting, pricing, and investment will continue to favor those with political connections—which almost never includes the poor. “Ring fencing”²⁷ of agencies to help make financial and personnel management processes more transparent and less vulnerable to corruption, as well as the enactment of civil service legislation to improve incentive structures for good performance, are two examples of the kinds of reforms that can help reorient planning and decision making toward communities with relatively weak political voice.

Box 15. Bringing women into institutions and political processes in Uganda and Ukraine

Uganda introduced a Water Sector Gender Strategy in 2003, which includes an affirmative action component. This mandates that all administrative levels from cabinet down to village should include at least 30% women. As a result, women raised their voices and have been trained to locate water sources in the village, to decide on the location of facilities and to repair pumps. The incidence of breakdown has decreased considerably. Women have also participated in businesses: in rural areas, setting up shops to store spare parts for boreholes and in urban areas, managing water systems. In water user associations, women are often responsible for the finances. A school sanitation and hygiene programme was shared between the ministries of water and education, both of which were headed by women. Working together, the ministers are devising affirmative action programmes to encourage girls to get a better technical education and professional background.

H.E. Maria Mutagamba statement to CSD-13, April 2005

In *Ukraine*, the cleaning of railway oil tanks combined with an inadequate sewerage system caused overflows of sewage into houses and onto the streets. When women approached the local authority, they were denied funds to solve the problem. With the help of an environmental NGO, women met with residents, launched a political campaign and filed a legal suit against the local authority. As a result, the government allocated resources to finish construction of a sewage pump, financed environmental works, and closed the hazardous oil-tank cleaning facility.

From Khosla, Prabha (2002). *MAMA-86 and the Drinking Water Campaign in the Ukraine*, prepared for the Gender and Water Alliance

It is also worth noting that, in the water and sanitation sector, change is often triggered by crises such as drought, a precipitous drop in service levels, outbreaks of disease, or a financial crisis. Political shifts, such as decentralization or elections, can also be an opportunity for reform. So too can external shocks, threats and opportunities, such as the possibility of privatization, or donor pressure. Indeed, timing is one of the basic challenges of the sector—how to make progress within one political cycle after decades of neglect, or how to interest politicians in measures that are not likely to yield visible results during their terms of office. It is thus important to look for historic opportunities to make large strides, and also to pursue buy-in around a few simple first steps that can yield short-term benefits to the politicians and policy makers. Such “confidence building” measures that build capacity, trust and social capital can help pave the way for deeper, subsequent reforms.

²⁷ Ring-fencing refers to the compulsory reservation of funds for use within a specific limited sector or department, e.g. of a government agency or utility, a specific division of a company, etc. It implies, for instance, that income a utility gains from providing water supply would then remain with that utility to cover operation and maintenance costs, to pay salaries, to fund expansion of services, etc.

Institutional constraints²⁸

Two types of institutional impediments stand in the way of expanding access to water supply and sanitation services: the lack of appropriate institutions at all levels, and chronic dysfunction of existing institutional arrangements. At the community level, potential users of services are often constrained by the absence or underutilization of institutions to facilitate collective and/or individual action. At the national and sub-national level, sanitation often has no institutional ‘home’ at all, creating a policy vacuum and a corresponding lack of prioritization in budgetary decision-making.

Among existing institutions involved in the extension, operation, and maintenance of water supply and sanitation services—including formal organizations such as utilities and local governments, less formal associations such as village committees, and principles or practices such as laws, regulations, and customs—persistent problems related to inappropriate incentives, lack of accountability, and absence of a sound regulatory system are at the heart of constraints to expanding access to service. For women, legal barriers to owning and inheriting land can also serve to limit their access to water.

Incentives

Capacity building can provide individuals and institutions with the tools and skills to improve water supply and sanitation services, but not necessarily with the motivation to do so. From the household to the international level, current incentive structures often work against extension of water supply and sanitation services to the poorest, as well as against the long-term sustainability of installed infrastructure.

In urban areas, for example, service providers may either be prohibited from installing trunk infrastructure, or may be reluctant to do so, in communities with insecure land tenure. Not only are households without a title denied access to network services, but they often cannot obtain titles without evidence of long-term residency—such as bill payment receipts from the WS&S agency. Families without titles are also reluctant to invest in private, individual water supply and sanitation facilities such as wells and latrines, given that they feel vulnerable to clearance actions by government.

From the perspective of service providers, assignments to projects benefiting low-income communities are viewed with disappointment by many agency staff. Not only do they place employees in less attractive work environments (*e.g.*, urban slums or rural areas), but they also tend to emphasize simple technologies that are viewed as posing few interesting technical challenges. Even where improved services are installed, service providers often view low-income communities as having limited revenue potential, which in turn can engender inadequate maintenance and high rates of failure of systems serving poor households.

²⁸ The term “institutional constraints” refers to obstacles developing countries face in a wide range of areas required for effective development policy-making and implementation, such as human resources, managerial skills, monitoring and evaluation systems, work processes, organizational cultures and norms, and legal frameworks.

The ‘ribbon cutting’ culture of water and sanitation agencies the world over—in which rapid progress toward construction objectives is prioritized over virtually all other activities—has also been well documented. This attitude is the consequence of demands placed on agency staff by elected and unelected leaders, who themselves are under pressure to deliver new construction projects to constituents. As a result, human and financial resources are allocated disproportionately to construction rather than operation and maintenance (O&M), thus placing the sustainability of installed infrastructure at great risk. In addition, professional status becomes increasingly associated with large-scale design, the latest technologies, and construction activities. Promotions (and elections) may easily be decided on the basis of extending a new water or sewer line; they are rarely influenced by the fact that an existing WS&S system continues to function well, or by a reduction in unaccounted-for water. It should be noted that this description of professional incentives favoring new, large construction projects is also relevant to donor agencies and multilateral development banks. In most organizations, incentives are largely structured around the number and/or value of new projects, rather than around the performance or sustainability of existing initiatives.

Accountability

Accountability is a special form of incentives. It is needed to impel individuals and institutions in the right direction. Accountability mechanisms are essential to hold government, service providers, and international institutions responsible for their action (or inaction) in improving sustainable access to water supply and sanitation services. Accountability implies both a measurable standard of performance and a consequence for the failure to meet that standard. In a competitive market, for example, a service provider who does not meet his/her obligations to customers will suffer the consequence of losing business to a competitor.

Given the limited scope for competition in water supply and sanitation service delivery, this market approach to accountability has limited applicability for reaching Target 10. One promising alternative strategy for improving accountability in WS&S service delivery is the decentralization of planning and/or budgeting to local institutions. Decentralization offers the potential of increasing the influence of communities and households over decision-making, through elections, social norms, and the use of ‘voice.’ Decentralization can also improve accountability by separating policy-making (*e.g.*, for tariff setting) from service delivery activities. It is important to note, however, that decentralization will have limited (or even negative) effects if implemented in areas with inadequate capacity, and/or if central government does not maintain an active role in oversight by retaining control over certain key functions (*e.g.*, setting standards or redistributing resources to subsidize service for the poor). One method of capturing the gain from decentralization is through benchmarking of performance of service providers.

At the international level, the global institutional structure for supporting water and sanitation issues is still not fully aligned with the Millennium Development Goal initiative. In particular, the accountability of the international community could be substantially enhanced by the development of an effective system to assess and report

regularly (a) what actions have been taken to meet the goals, and (b) the extent to which those actions have advanced progress toward achieving the goals.

Regulatory system

Absence of a sound regulatory system and a strong regulator are generally held to be constraints to good performance by public as well as private sector operators. The overall aim of regulation is to ensure that sector goals like Target 10 are reached, confidence is established in the sector to attract private investor participation in financing and service delivery, and that the interests of both users and service providers are protected. A key complement, especially where private sector participation is involved, is establishment of instruments for arbitration. Good regulation is critical in public sector systems and particularly so in decentralized administrations.

The regulator should have a clearly defined mandate and authority, with an independent source of funding. The primary responsibility of the regulator should be to supervise operators, both public and private. Two types of regulation are necessary, namely, quality regulation and economic regulation.

Quality regulation is used to track the quality and efficiency of service providers. It entails monitoring service operators to determine whether they are meeting their contractual obligations to provide access to service coverage and quality of service within the authorized tariffs rather than merely providing access to dysfunctional infrastructure. To do so effectively, the regulator should define goals and performance standards so that actual service delivery can be compared with them. In addition, he/she should define the tariff policy, provide information on required investment to meet stated goals, and advise on funding sources to meet investment goals.

The minimum standards to be followed should be defined by central government, leaving regional governments to define local standards provided they are not lower than the national standards. Best practice suggests that both public and private service providers should operate under the specified targets, with rewards for exceeding such targets and sanctions for failure to meet them in terms of costs and timeliness. Quality regulation is also needed to monitor the implementation of reform measures and the flow of resources into the sector.

Economic regulation is required for tariff setting on the basis of agreed objective criteria. It seeks to ensure that the interests of both operators and users are protected. A key principle is to ensure that consumers are not made to pay for the inefficiencies of service providers. Competition between operators and benchmarking are considered to be powerful instruments in economic regulation. Competition helps to improve performance and/or reduce costs and, hence reducing charges and improving affordability. Benchmarking yields information that can be used for performance comparison and tariff setting. Its outputs can give signals which can help to determine whether programs are on track to achieve targets. The information it provides can give signals that can be used for making mid-course adjustments to technical strategies in order to improve sector

performance. In view of the importance of such information, central government should provide incentives to local governments and operators for good reporting.

3. CAPACITY-BUILDING AND SOCIAL LEARNING²⁹

Box 16. Separate toilets boost girls' school attendance

In *Bangladesh*, a school sanitation project with separate facilities for boys and girls helped boost girls' school attendance 11 % per year, on average, from 1992 to 1999.

From United Nations Children Fund (UNICEF) (2003). *Sanitation for All*. See: <http://www.unicef.org/wes/sanall.pdf> (accessed on 22 March 2004)

Institutions responsible for service provision—whether village water and sanitation committees or large urban utilities—need technical, financial, managerial, and social intermediation capacity that is lacking in many parts of the developing world. Technical capacity is particularly critical for extending services to low-income communities, where innovative technologies and service-delivery systems can be tailored to meet the needs of poor households. Similarly, considerable research suggests that reaching the poorest of households with WS&S services can be facilitated by the participation of social intermediation professionals.

Capacity building is also essential in the area of gender-sensitive programming and policy-making. Because of differences in production, labor, responsibilities and resources, women and men have different interests in, and derive different benefits from, the availability, use and management of water. Women, for instance, generally prioritize water for domestic uses like drinking and washing, whereas men may focus on irrigation. As a result, they often have different criteria to evaluate the adequacy, equity, timeliness, convenience and quality of various interventions. Without a thorough gender analysis, planners have a distorted picture of communities, natural resource uses, households, and water users. Understanding the differences between women and men (who does what work, who makes which decisions, who uses water for what, who controls which resources, who is responsible for the different family obligations) is part of a good analysis and can contribute to more effective initiatives.

²⁹ We use the term “capacity building” as defined in Agenda 21 (Chapter 37): “...capacity building encompasses the country’s human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environment potentials and limits and of needs perceived by the people of the country concerned” (UNCED, 1992). UN Division for Sustainable Development. 1992. *Agenda 21*. Adopted at the United Nations Conference on Environment and Development on 14 June, 1992. [Retrieved November 10 from www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter37.htm]

Box 17. Building the capacity of women and girls in Togo and India

In the Est-Mono region of *Togo*, where only 10% of the population have access to potable water, a project aimed at improving access to water and sanitation facilities did not meet everyone's needs and the facilities fell into disuse. Given these problems, a new project design encouraged the participation of all villagers, boy and girl students, men and women teachers and administrators. Following the diagnosis of the problem in schools, an action plan for hygiene promotion was approved by the schools and the villages. The project provided water and sanitation facilities, as well as educational resources, to each village school. Addressing gender imbalances among students and ensuring the participation of the entire community has led to impacts far beyond the immediate results. Girls have taken a leadership role and increased their self-esteem. Gender-balanced School Health Committees are responsible for the equipment and oversee hygiene.

From Alouka, S. (forthcoming). Integrating Gender into the Promotion of Hygiene in Schools. In: Office of the Special Adviser on Gender Issues and Advancement of Women, *Gender, water and sanitation: case studies on best practices*. New York, United Nations (in press)

In eight slums in the Tiruchirapalli district of Tamil Nadu State, *India*, latrines constructed by the municipal corporation had all become unserviceable due to poor maintenance. Poor sanitation and contaminated water affected all families with disease, increasing their medical expenses. Male community leaders did not take any steps to provide improved facilities. Requests to the government for better services from the women were of no avail until the people joined forces with Gramalaya, an NGO working on water and sanitation projects. The project design called for the installation of drinking water facilities and individual toilets, as well as community mobilization with a focus on gender mainstreaming. WaterAid covered the equipment and installation costs, while Gramalaya covered the capacity building and community mobilization components. The government provided the land sites, electricity, water supply, and loans to community members. The community is not only benefiting from improved water and sanitation facilities and better health, but the women have also gained self-confidence. Women who were once treated poorly by officials are now given respect when they visit government offices.

From Berna, I. V. (forthcoming). India: From Alienation to an Empowered Community - Applying a Gender Mainstreaming Approach to a Sanitation Project. In: Office of the Special Adviser on Gender Issues and Advancement of Women, *Gender, water and sanitation case studies on best practices*. New York, United Nations (in press)

Box 18. Women and Communities at the Forefront of Water Management: Water Projects under the Community-Based Pro-Poor Initiatives (CBPPI) Programme (1997-2004)

Under CBPPI, the Government of India and UNDP are supporting several water projects in their efforts towards the empowerment of communities for poverty alleviation through a process of social mobilization and people-centered development. In pursuit of these objectives, the key elements are bottom-up planning, replacing dependency with self-reliance, asset creation for sustainable livelihoods and fostering alliances between organizations of the poor, local elected bodies and parastatal agencies. Very importantly, UNDP/CBPPI projects are “pro-poor, pro-nature, pro-jobs, pro-women and pro-children.”

The advantages that accrue when a gender perspective and a decentralized, community-based approach are integrated into water issues in addressing the poverty-environment nexus can be seen in the following example of a UNDP supported project in India:*

The NGO Tarun Bharat Sangh (TBS) has buttressed women-centered activities and constructed nearly 7500 water harvesting structures in 11 districts of Rajasthan, of which nearly 1500 are in the district of Alwar in the form of mud dams, concrete dams and ponds. Communities have made most of these with help from the TBS over a period of 17 years and women have played a major role in these. They have also rid the area of water shortages, started women's banks and revived traditional methods of water harvesting. Women also play a direct role in water management; and harvesting and control over water-producing forest resources.

*Culled from the special issue of the 'UNDP India News' on 'Women, Water and Decentralisation' no. 13, July 2003; and from recent UNDP evaluation reports.

Capacity is enhanced through adherence to the principle of management at the lowest appropriate level, expressed through mechanisms such as devolution of responsibility to local governments and communities, backed by technical assistance for appropriate capacity building and funding. However, lack of financial and managerial authority and capacity can be particularly problematic when responsibility for water supply and sanitation service delivery is decentralized to local administrations. From planning and conflict resolution to revenue management and accounting, local governments often need considerable strengthening before they are able to administer services in an effective and sustainable manner. Devolution of responsibility to local levels that are not accompanied by devolution of financial authority often leads to paralysis of sector performance. Decentralization programs also inherently prejudice households living in areas of weakest administration, which are typically the rural poor. Moreover, the financial difficulties of the water and sanitation sector often make it difficult to attract and retain good engineers, managers, and social intermediation professionals—particularly in locations outside large urban areas. Lastly, when responsibility is decentralized to communities without a sound system of regulation and oversight, communities can sometimes compete among themselves for scarce water supplies in ways that can lead to economic inefficiencies; thus decentralization also needs to be accompanied by effective regulatory and oversight mechanisms, as well as be embedded in an overall system for management of water resources.

With respect to households, capacity building often requires little more than tapping into the skills and endowments that already exist among community members. In some cases, improving access to information can go a long way toward making households aware of their rights and their options for obtaining improved water supply and sanitation services. Alternatively, forming or supporting civic organizations can be a way of developing community capabilities for organizing, planning, and even implementing local water and sanitation projects.³⁰ In other cases, partnership with local and international NGOs would be the feasible option.

Capacity building is often thought to pertain only to emergent institutions, such as local governments receiving authority for water and sanitation planning in a decentralizing country. In such a situation, however, the role of central government is also changing, and national institutions often need strengthening in new and unfamiliar capacities. National and provincial agencies, for example, may need assistance in shifting from design and construction to contracting, procurement, and oversight. It is also important to strengthen capacity for monitoring of sustainable access to water supply and sanitation services at the national level.

Box 19. Social learning starts in childhood

UNICEF's challenge:

".. that every primary school in the world be equipped with separate sanitary facilities for boys and girls – and that every school, without exception, have a source of clean and safe drinking water."

Every girl and boy has the right—and responsibility—to drink safe water, use clean toilets and practice personal hygiene, including washing hands with soap. School-based water, sanitation and hygiene education improves student learning, increases school attendance, particularly of girls and supports outreach out to promote household sanitation and hygiene practices. Water, sanitation and hygiene education (WASH) at School is a critical element to the international effort to achieve the MDGs by 2015, especially for MDG 2 on universal primary education, MDG on gender equality in education, and MDG 7 on environmental sustainability.

More than half of the schools in developing countries are currently without water and sanitation. Scaling up WASH school programmes, while retaining quality, is an urgent priority for the crucial 10 years till 2015. Many countries have developed relatively small-scale initiatives and some countries are making remarkable efforts to take these pilot projects to a larger scale. The challenge is to meet the institutional and capacity requirements for scaling up with quality, country by country and community by community. Quality means that the programme is effective and produces sustained improvements, on a large scale.

4. APPLICATION OF SCIENCE, TECHNOLOGY, AND KNOWLEDGE

One of the important lessons of the past several decades of international collaboration for expanding water supply and sanitation services has been that non-technical issues such as

³⁰ The Orangi Pilot Project in Pakistan is a well-known example of this type of 'bottom up' capacity building that led to a locally planned and implemented sanitation project.

financing and institutions are equally important—and often more important—explanations for the persistent lack of access among developing countries than are technical challenges. At the same time, the pendulum should not swing so far as to neglect entirely the role of technical considerations in expanding services. Indeed, the provision of safe and reliable services is often more technically challenging in poor communities than in rich ones. Extending services to a dispersed rural settlement or dense urban community on marginal land, for example, is one of the tougher design problems that a water and sanitation engineer can face.

Climatic factors can certainly shape a country’s ability to provide and maintain WS&S services for its citizens. Many developing countries in the tropics, for example, suffer alternately from floods that damage infrastructure and droughts during which water sources run dry. Whereas inexpensive solutions are available in some cases (*e.g.*, rainwater harvesting), in others costly infrastructure is required in order to control droughts and store water for the dry periods. Such physical constraints may hinder economic development in general and thus impede progress toward all the Millennium Development Goals.

Although the amounts of water required for increasing access to safe drinking water supply and sanitation are relatively minor in comparison with the amounts required for agricultural uses, there are often situations in which the physical availability of water resources on a sustainable basis (and access to technologies suited to that environment) limits efforts to increase sustainable access to water and sanitation. It is important to note, however, that in other cases what is termed “water scarcity”—at least as regards water for domestic purposes—is often the result of decisions at various levels to prioritize water allocation to other uses, and to expend limited budgetary resources on activities other than accessing, treating, and transporting water for household use. It is also important to recognize that, although water and sanitation are often seen principally as a challenge of capital investment, the provision of water and sanitation services is an ongoing business that has to be understood and managed as such if it is to achieve and sustain its goals. Where a water supply system is poorly planned or “under-managed”, the consequences often include excessive loss of water through leakages and waste as well as loss of the revenue needed to run it effectively through unmanaged consumer connections. Finally, achieving environmentally acceptable sanitation solutions is a major technical challenge, particularly in urban and peri-urban areas—indeed, some approaches may lead to a period of transitional environmental pollution, since increasing access to sanitation under conditions of water stress means that there will be more and more pollutants being disposed into less and less water.

Box 20. TepozEco- Municipal Ecological Sanitation Pilot Project in Mexico

The UNDP supported TepozEco Municipal Ecological Sanitation Pilot Project, seventy kilometers south of Mexico City, addresses critical interrelated problems common to many Latin American municipalities: low sanitation coverage; wastewater-induced pollution which limits access to safe water, threatens public health, and endangers ecosystems and mismanagement of natural resources, including non-renewable nutrients for agricultural production. The project’s integrated closed-loop systems approach, which focuses on sustainable management of separate domestic residue flows (urine, faeces, greywater, organic and non-organic solid waste), radically reduces water consumption,

while safely recycling valuable nutrients into the soil.

A key element of sustainable sanitation is the reuse of sanitized products in agriculture, resulting in improved food security and quality of life. Project activities support a youth group (Impetu Joven) in establishing a community eco-station to provide maintenance for the household systems, including collection, processing and recycling of organic by-products at their composting center and plant nursery.

The Project has generated significant learning in a critical, emerging field and international agencies have responded accordingly. In partnerships with local manufacturers and foreign product developers, TepozEco is researching and testing new technologies and products to make ecosan more available and acceptable. In conjunction with GERALI (Mexico) and Addicom (South Africa), an innovative, low-cost odor trap for urinals and UD seats is now being produced in Mexico. New models with this trap should significantly improve acceptability of and access to ecosan. In collaboration with international specialists, TepozEco is also breaking new ground in the development of greywater treatment systems that are easy to maintain, inexpensive and effective. Mulch beds show great promise for domestic treatment and reuse.

Perhaps the most innovative aspect of the Project is to involve different sectors of the population to ensure quality and sustainability, not just quantity of units built. The use of participatory techniques has been crucial to allow community participation, personal involvement in decision-making processes, appropriation of ecosan systems, and adequate operation and maintenance. Preliminary work involved a gender-oriented evaluation of sanitation facilities and practices, which sparked women's participation in the remainder of the process. Local masons were trained during the construction of dry toilets, so they are now capable of replicating these systems.

In the wider context, TepozEco has facilitated greater consensus between key municipal, state, and national stakeholders regarding adequate W&S regulations, mechanisms towards sustainable use of water resources, and appropriate technologies for treatment of wastewater.

More information about the project is found at <http://www.sarar-t.org/>

5. TARGETING, MONITORING, AND IMPLEMENTATION ASSESSMENT

Targeting: Where are the needs greatest?

Meeting Target 10 requires reducing by half the proportion of the population without safe drinking water and basic sanitation between the baseline year of 1990 and the target year of 2015. It is a huge challenge, particularly for sanitation; according to the 2004 WHO/UNICEF Joint Monitoring Programme (JMP) report, meeting the sanitation target at the global level will require that an additional 1 billion urban dwellers and 900 million people in sometimes remote rural areas gain access.

Important as it is, however, the global target matters less than the national targets set by individual countries. Significant progress in China and India alone, for instance, could increase the global average such that the target is met – without there being any progress at all in sub-Saharan Africa. What matters is reaching the MDGs country-by-country through massive expansions of service into unserved remote rural areas and densely

populated urban slums. Such dramatic and unprecedented service expansion will require the identification of regions, countries, and communities where the needs are greatest; the primary obstacles to expanding access to services in these areas; and the most promising strategies for overcoming these obstacles. This section deals with each of these subjects in turn.

Who are the unserved? Differences among low-income and middle-income countries

Despite the fact that an association between wealth and access to improved water supply and sanitation services exists at virtually any level of analysis, it is not the case that all of the world's unserved live in the world's poorest countries. Some very poor countries are making rapid progress³¹. And a substantial proportion of unserved households are located in middle-income countries. These differences are important, because the strategies for mobilizing resources, developing capacity, and involving actors from the local to the international level will be quite different between these two groups of countries.

Tables 3 and 4 below provide rough initial estimates of the distribution of the global population of unserved people for both water supply and sanitation³².

Table 3. Distribution of global population without access to safe drinking water (in millions)

	Low-income Countries	Middle-income Countries	Total
Below poverty line	320	96	416
Above poverty line	30	259	289
Total	350	355	705

Table 4. Distribution of global population without access to sanitation (in millions)

	Low-income Countries	Middle-income Countries	Total
Below poverty line	540	93	633
Above poverty line	565	730	1295
Total	1,105	823	1,928

³¹ For instance, according to the 2004 WHO/UNICEF JMP report, several low-income countries increased their coverage by over 100 percent between 1990 and 2002, among them Benin, Madagascar, Cameroon, and Nepal.

³² Numbers of extreme poor calculated by multiplying the national poverty headcount ratio by the population. National poverty headcount ratios are taken from the World Development Indicator database. Countries for which no poverty and/or water and sanitation data are available are not included in the calculations, which is why the totals are less than the total number of unserved people, for both water and sanitation. We are grateful to Michael Krouse and Alice Wiemers of the Millennium Project Secretariat, who carried out this analysis.

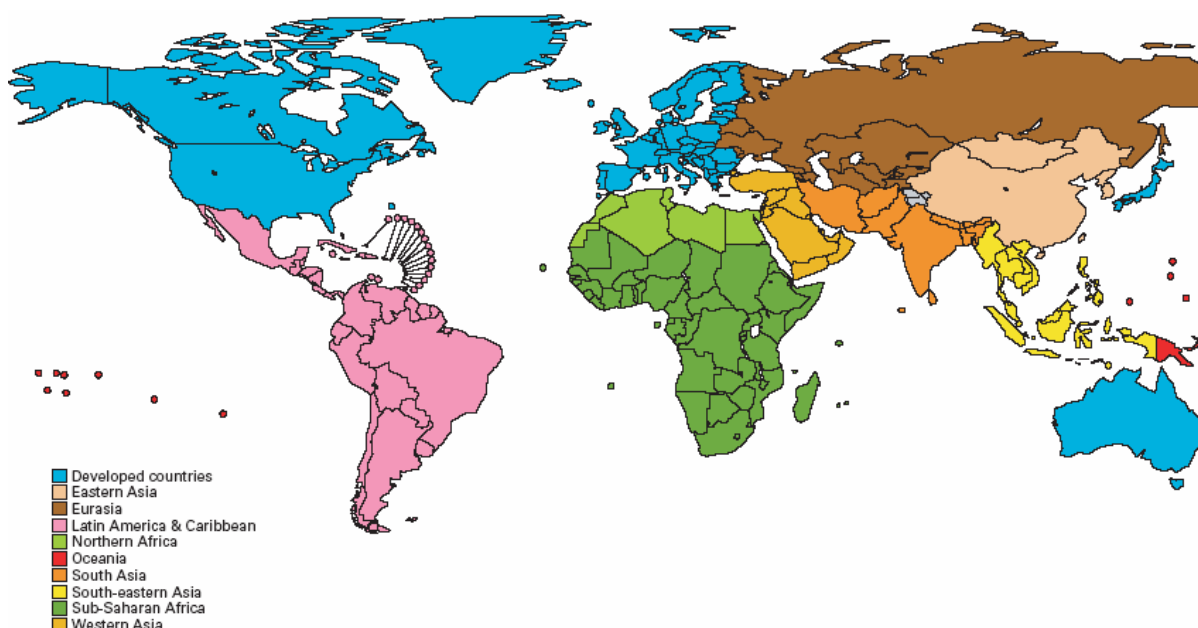
As these tables show, the target group of unserved people living below the poverty line in low-income countries by no means represents the majority of the unserved, especially for sanitation. However, it is the target group most likely to be left behind if appropriate financial strategies are not urgently developed to reach them.

Where are the needs greatest?

Although Target 10 needs to be set, monitored, and achieved on a country-by-country basis, there are clear differences among countries and regions, in terms of both coverage and rates of progress toward meeting the targets. The following sections briefly describe some of these regional and national differences.

Regional differences in water and sanitation coverage rates. The 2004 WHO/UNICEF Joint Monitoring Programme (JMP) report describes regional use of both improved drinking water and improved sanitation in the baseline year of 1990 and in 2002, which is the half-way point for the 2015 targets. The report, which is the most reliable source of official global water supply and sanitation information, indicates that sub-Saharan Africa, Oceania, as well as East and Southeast Asia, are the regions where coverage is lowest for both water supply and sanitation.

Figure 3. WHO/UNICEF Joint Monitoring Program regional groupings



Source: Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress. 2004. UNICEF and World Health Organisation.

At the global level, in the year 2002, about 1.1 billion people of the world's 6.2 billion population (18%) lacked access to improved water supply, and about 2.6 billion people (42%) had no access to even the most basic forms of improved sanitation.

Figure 2.1 shows the regional groupings used for monitoring the MDGs. In 2002 sanitation coverage was lowest in sub-Saharan Africa (36 percent) and in South Asia (37 percent). As shown in Table 2.2, most of those without access to improved sanitation lived in Asia (73 percent), while 17 percent lived in sub-Saharan Africa. Over half of those without access to improved sanitation—nearly one-and-a-half billion people—live in just two countries, China and India.

Table 5. Access to improved sanitation by region, 2002

Region	Number of people in region lacking access (m.)	% of regional population lacking access	% of all unserved living in indicated region
South Asia	938	63%	36%
Eastern Asia	749	55%	29%
Sub-Saharan Africa	437	64%	17%
Southeast Asia	208	39%	8%
Latin America & Caribbean	137	25%	5%
Eurasia	50	17%	2%
Northern Africa	40	27%	2%
Western Asia	38	21%	1%
Developed regions	20	2%	1%

Oceania	3	45%	<1%
TOTAL	2,620	N/A	100%

Source: Adapted from Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress. 2004. UNICEF and World Health Organisation.

Safe drinking water coverage rates were lowest in Oceania (52 percent) and in sub-Saharan Africa (58 percent). However, as shown in Table 2.3, in terms of absolute numbers, most of the 1.1 billion without access to improved drinking water sources lived in Asia (61 percent), and 26 percent lived in sub-Saharan Africa.

Table 6. Access to improved drinking water sources by region, 2002

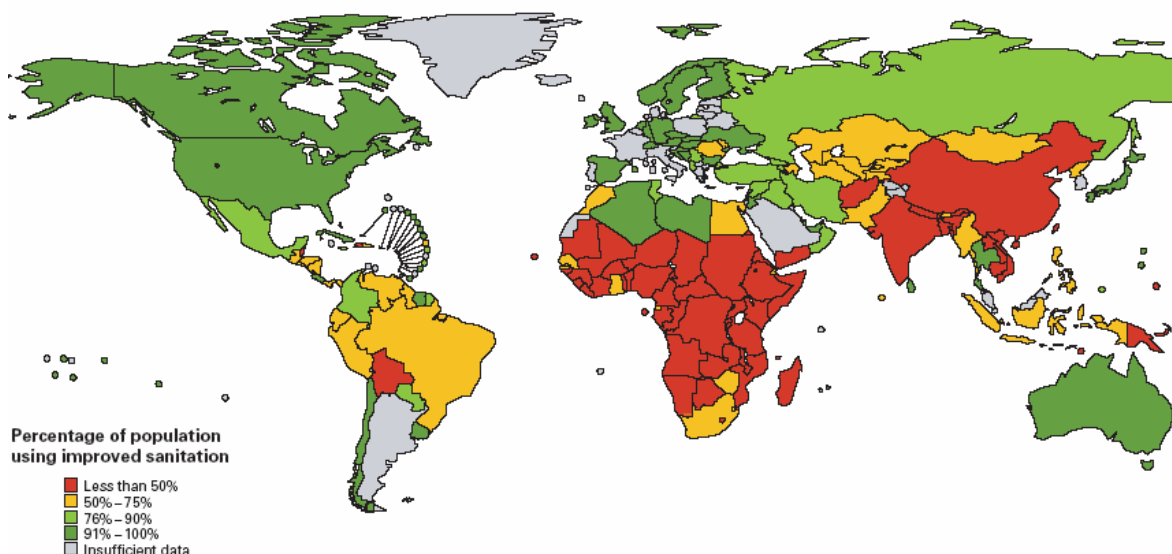
Region	Number of people in region lacking access (m.)	% of regional population lacking access	% of all unserved living in indicated region
Eastern Asia	303	22%	28%
Sub-Saharan Africa	288	42%	27%
South Asia	234	16%	22%
Southeast Asia	115	21%	11%
Latin America & Caribbean	60	11%	6%
Western Asia	23	12%	2%
Eurasia	20	7%	2%
Northern Africa	15	10%	1%
Developed regions	15	2%	1%
Oceania	3	48%	<1%
TOTAL	1,076	N/A	100%

Source: Adapted from Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress. 2004. UNICEF and World Health Organisation.

National differences in water and sanitation coverage rates.

For most developing countries, expanding sanitation coverage presents a far greater challenge than expanding water supply coverage (Figure 2.2). The majority of nations in sub-Saharan Africa, as well as in several Asian sub-regions, have more than half of their populations unserved; in addition, more than one quarter of the citizens in several Latin American and Caribbean nations lack access to improved sanitation as well. Among those 27 countries with the very lowest rates of coverage—those in which no more than one third of residents have access to improved sanitation—the majority (18) are in **sub-Saharan Africa**, followed by Asia (6).

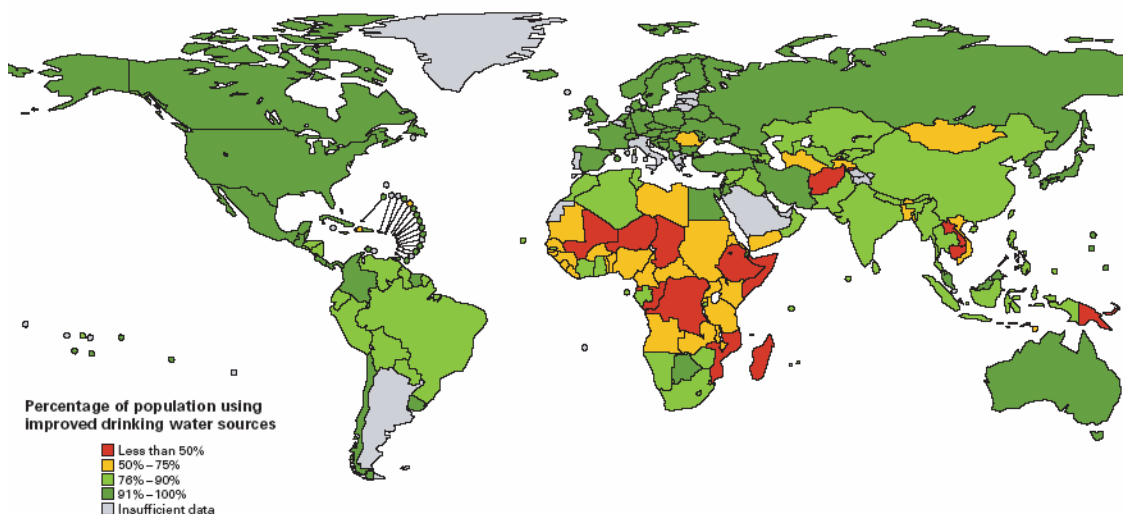
Figure 4. Access to improved sanitation, 2002



Source: *Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress*. 2004. UNICEF and World Health Organisation.

At the national level, most of the countries in which a substantial proportion of the population lacks access to improved water supply are found in sub-Saharan Africa. Taken together with the information provided in Table 2.1, Figure 2.3 demonstrates that considerable attention must be afforded to sub-Saharan Africa and Asia in order to make the dream of universal access to improved water supply a reality. Indeed, of the 25 countries that the Joint Monitoring Program has identified as lagging behind in their progress toward the MDG targets for water supply and sanitation, 13 are in Sub-Saharan Africa, while four are in Asia.

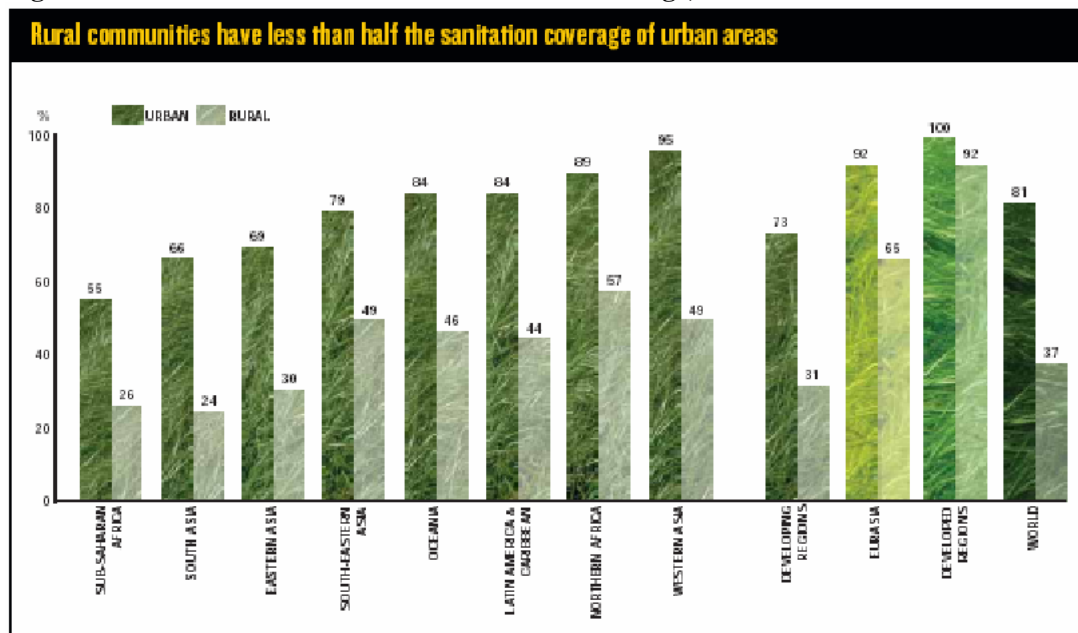
Figure 5. Access to improved water supply, 2002



Source: *Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress*. 2004. UNICEF and World Health Organisation.

Sub-national level differences in water and sanitation coverage rates. Within countries, areas with the lowest rates of access to improved water supply and improved sanitation tend to be rural areas, congested urban slum areas, squatter settlements—anywhere the poor live. For example, Figure 2.4 shows disparities between rural and urban areas in sanitation coverage.

Figure 6. Rural versus urban rates of sanitation coverage, 2002



Source: *Meeting the MDG Drinking Water & Sanitation Target: A Mid-Term Assessment of Progress*. 2004. UNICEF and World Health Organisation.

With respect to water supply, the number of unserved persons in rural areas is six times that of urban areas. This disparity is greatest in sub-Saharan Africa, where there is a difference of 37 percentage points between rural (45 percent) and urban (82 percent) coverage – as compared with a difference of 23 percentage points at the global level (72 versus 95 percent). Regarding access to improved sanitation, the disparities are worse at the global level; rural coverage is 37 percent, compared with 81 percent in urban areas. Among developing countries, the Joint Monitoring Program estimates that, in 2002, 560 million urban dwellers lacked access to improved water supply; for rural areas, the number of unserved was almost 2 billion. Although sector experts agree that urban access figures are sometimes overly optimistic, the disparities between rural and urban coverage are nonetheless significant.

Across all countries, those who lack access are almost always among the poorest of households. The 2004 WHO/UNICEF Joint Monitoring Program data suggest that those in the top twenty percent in terms of income are twice as likely to have access to improved water supply, and four times more likely to have access to improved sanitation, than those in the bottom twenty percent. Because they are drawn primarily from the

ranks of the poor, those without access to improved water supply and sanitation lack “voice” in priority-setting and resource allocation within countries.

Box 21. WHO-UNICEF: the Joint Monitoring Programme

Since 1990, WHO and UNICEF are tracking progress towards the global water supply and sanitation goals through the Joint Monitoring Programme (JMP). The JMP reports on trends in coverage and harmonises indicators, definitions and questionnaires to enhance comparability of data over time and among countries.

Prior to 2000, water and sanitation coverage data were based on information from service providers. The quality of the information varied considerably and often did not include facilities built by households or local communities themselves. In 2000, the JMP changed to the use of data from nationally-representative household surveys. This, along with the clarification of definitions, provides a more accurate picture of the situation by monitoring the type of facility that people actually use.

However, household surveys do not give information on the quality of the drinking water that households use. Sources classified as improved may still contain disease-causing organisms and chemicals (such as arsenic and fluoride). Poor households in developing countries commonly take their drinking water from public sources. Their drinking water can be easily contaminated during transportation and storage at home. UNICEF and WHO are working on a methodology to take water quality into account when reporting water supply coverage.