Background Paper of the Task Force on Water and Sanitation

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Note to the reader
The Background Paper provides a preliminary overview of existing knowledge and scopes out the questions addressed by this Task Force. The analysis, conclusions and recommendations contained herein should be considered as very preliminary as they are likely to evolve as the Task Force works toward its final report at the end of 2004. Comments and suggestions are welcome. Please cite this paper as "Background Paper of the Millennium Project Task Force on Water and Sanitation".

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EXECUTIVE SUMMARY

This background issues paper has been prepared to help lay the basis for the future work of the UN Millennium Project Task Force on Water and Sanitation, as well as to put forward some preliminary recommendations. The Task Force addresses MDG Target 10, "Halve, by 2015, the proportion of people without sustainable access to safe drinking water," as well as the target agreed at the Johannesburg summit, which calls for halving the proportion of people who do not have access to basic sanitation by 2015. While access to water and sanitation services in urban and rural environment is at the center of the Task Force's work, it includes the need for Integrated Water Resources Management (IWRM).

The report provides the institutional context for the Task Force's work, analyses key issues that relate to the MDG targets, provides facts and figures aimed at providing an overview of progress towards achieving the MDG targets, examines a set of globally relevant success stories in meeting the target, and briefly reviews existing information on financial requirements. On the basis of an analysis of the factors that have a key bearing on the ability of countries or communities to achieve the MDG targets, it outlines a framework for a global strategy to achieve the MDG targets and puts forward selected preliminary proposals for implementation. The paper ends with a review of the way in which actions in the water resource area will impact on the other MDGs.

Some of the key issues identified by the report include:

- The water and sanitation goals are intrinsically interconnected with the eight MDGs. Particularly strong links exist with poverty, hunger, environmental sustainability and health.
- A large number of frameworks of action for the water and sanitation sector have been developed, but they all fall short of a truly operational strategy framework that addresses the targets at scale and ensures local specificity in its recommendations.
- Strategies to achieve the targets need to differentiate between urban and rural sectors and depend on the types of technical constraints, the quality of governance, as well as the financial means available to a country.
- It seems clear that the projected doubling of investment levels required to achieve the water and sanitation targets cannot be funded through domestic sources alone.

The report highlights the fact that 1.1 billion people worldwide currently lack access to safe drinking water and 2.4 billion do not have access to basic sanitation facilities. Access to water is lowest in Africa, while Asia has the largest number of people with no access to basic sanitation. Important differences exist between rural and urban areas. At a global level, the withdrawal of water supplies for domestic, industrial and livestock use is projected to increase by at least 50 percent by 2025. This may seriously constrain the availability of water for all purposes – particularly for agriculture, which currently accounts for 80 percent of water consumed in developing countries.

The report includes a detailed analysis of case studies from South Africa, Ghana, Thailand (Bangkok), Pakistan (Orangi, Karachi), Brazil and India. These case studies analyze the impact of national strategies, the importance of political will, the role of government and the private sector, unbundling of sanitation services, community-driven initiatives, the condominial model as a new sanitation technology, and the role of spiritual organizations in implementing community based water and sanitation projects.

The report also highlights some of the lessons learned from experience to date. These include

- *Water Resources Supply:* The physical availability of water resources on a sustainable basis (and access to technologies suited to that environment) often limits efforts to increase sustainable access to water and sanitation. It would also be impacted by climate change and increased climate variability, especially since poor countries are the most vulnerable and have the least storage capacity.
- *Water Services Management:* Though often seen principally as a challenge of capital investment, the provision of water supply and sanitation services is an ongoing business that has to be understood and managed as such if it is to achieve its goals. In the absence of adequate planning and management, including planned maintenance, additional demands are made on water resources that require substantial new investments and may cause conflicts with other water users.
- *Service Provision Chains for Sanitation:* Access to sanitation differs from access to water supply in terms of the nature and order of service provision. While in the case of urban water supply the service provision chain starts with the installation of infrastructure for the public good component of the service, in general, the service provision chain for sanitation starts with the private good component followed by two or three different levels of public good components in the service provision chain. This raises important questions of implementation since the public good component is often not installed, which leads to environmental pollution and health problems.
- *Governance Issues:* Key issues are institutional capabilities (to deliver water and sanitation services to the poor) and institutional mechanisms (i.e. implementation of effective channels of delivery). Ownership at the community level and demand-driven approaches are key. Evidence also shows that tri-partite partnerships among government, community, and NGO/private sector can be most conducive to increasing access of the poor to water and sanitation services.
- *Financial mechanisms:* The Task Force does not assume *a priori* that the water and sanitation targets in poor countries must be achieved on the basis of self-financing operating costs. The aim must be to generate sufficient revenues for system operators (to "close the revenue cycle"), which may require subsidies to the poor and other innovative financing mechanisms.
- *Crosscutting issues:* Important issues impacting on the water and sanitation sector include the role of women, political will, conflict, and hygiene education.

On costs, the report notes that currently 27-30 billion dollars are invested in water and sanitation in developing countries each year. National governments account for 70-75 percent, and 20% are made up of international aid flows. International private flows only

contribute between 7 and 11 percent of total investments and focus heavily middle-income countries. Between 1990-1997 less than 0.2% of all private sector investments in the water and sanitation sector of developing countries went to Sub-Saharan Africa. A number of studies have estimated the funding gap for achieving the Targets on water and sanitation. These estimates cover a broad range and are highly sensitive to the assumptions used. They project a doubling of current investment levels in the sector to meet the MDGs. A key focus of the Task Force will be on refining these estimates.

A key part of the report focuses on the development of a framework for an overall strategy to achieve the water and sanitation targets of the MDGs that would (1) identify priority interventions, (2) outline strategies to achieve such priority interventions, (3) lay out the organizational means required for implementation, and (4) provide a clear estimate of the amount and nature of the financing required and from where it might be secured. The report suggests that an overall strategy will need to entail action at all levels, from the household level to the international level. In particular, it will need to include community and local government approaches within a broad national framework for each country to set the stage for local action by both communities and households, set goals and priorities, establish programs, and provide monitoring and evaluation; a regional framework for each major region, bringing together countries that share common concerns and, in some cases, institutional traditions; and an international framework(s) for decision-making and for financing, including donors and the supporting role of international agencies. Importantly, the overall strategy would not be viewed as a centrally dictated master plan, but rather a strategy with a cohesive overarching vision in which action at the various levels interact and reinforce one another.

The report suggests that a central component of an overall strategy to meet the water and sanitation targets will be nationally prepared and owned strategies for action at national and sub-national levels. All countries should develop such strategies, especially those at greatest risk of not meeting the targets. In developing such strategies, countries will need to take into account the factors that facilitate or constrain the achievement of the targets Clearly, in most countries simultaneous action will be needed to address technical, institutional and financial constraints. National and sub-national strategies need to be complemented by international frameworks for decision-making, for financing from international sources and for investments in new R&D, as well as by regional strategies for each major region.

The report emphasizes that investments in other sectors such as health and education will be crucial to the achievement of the water and sanitation targets. Progress in eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowering women and ensuring environmental sustainability will all help in advancing progress towards the MDG water and sanitation targets. For this reason, the analyses of all the other Millennium Project Task Forces will have a strong bearing on the work of the Water and Sanitation Task Force.

Importantly, the report outlines a number of preliminary action proposals that the Task Force believes can significantly accelerate progress towards the achievement of the water and sanitation MDGs. They include proposals for action at the national and sub-national as well as at the regional and global levels, complemented by proposals for technological

innovation at all levels. In all cases, a key cross cutting objective will be to ensure that progress is monitored in a manner that measures household access to services not just the proxy of infrastructure provision.

Proposals for action principally at the national and sub-national levels include establishing targets and preparing action plans, developing integrated water resource management and efficiency plans, and developing and field-testing innovative country-level mechanisms for financing water supply and sanitation for the poor. Proposals for action principally at the regional and international level include providing financial and technical support, improving the quantity and quality of external assistance, developing innovative global funding mechanisms, and developing regional strategies. Support to countries most at risk of not meeting the targets would need to include financial and technical assistance to those countries that, with appropriate support, would be able to develop and put in place the policies and institutional mechanisms required for effective action towards the water and sanitation targets.

Although the report notes that in the water and sanitation sector there are clearly proven strategies and interventions that can make the pivotal difference at country scale, it argues that technological advances -- as well as innovation in institutional and financial mechanisms – are needed to improve these interventions still further.

Millennium Project Task Force on Water and Sanitation
Background Issues Paper

INTRODUCTION

Water is a key to development in all its many dimensions. First and foremost, it is an essential element for human survival, and the combination of safe drinking water, adequate sanitation and hygiene is recognized as fundamental to human well-being. But water is also an essential element for food security, for the environment, and for sustainable development more generally. Indeed, water is not merely the first of the five key "WEHAB" (Water, Energy, Health, Agriculture and Biodiversity) areas singled out for priority attention at the 2002 World Summit on Sustainable Development in Johannesburg, but a crucial ingredient for all areas.

Water is therefore intrinsically interconnected with the eight Millennium Development Goals (MDGs) agreed upon by the international community in 2000. Halving "by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation" is one of the 18 numerical and time bound targets that are embodied in the eight MDGs – a direct recognition of the fact that over a billion of the world's people still lack safe drinking water, while over twice that number have no adequate sanitation[1]. As importantly, water is an essential ingredient to virtually all the other MDGs -- which range from eradicating extreme poverty and hunger to ensuring environmental sustainability. Although the MD goals and targets focus principally on ends rather than means and therefore do not explicitly recognize water's role in food security or environmental sustainability, there is no doubt that good water management will be essential to achieving most if not all the other MDGs. Integrated Water Resources Management will be especially key to eradicating extreme poverty and hunger, ensuring environmental sustainability and improving health conditions.

Given all of the above, it is not surprising that water and sanitation figure prominently in the key initiative to assist the international community in the coming years to meet the MDGs – the United Nations Millennium Project, a three year effort launched in July 2002 by UN Secretary General Kofi Annan and UNDP Administrator Mark Malloch Brown to identify the best strategies for meeting the MDGs, including the identification of priorities, strategies, organizational means, and financing. The core of the Millennium Project's analytical work will be performed by Task Forces; and one of these – the Millennium Project Task Force on Water and Sanitation -- will focus on water and sanitation. The challenge for the Task Force will be to develop a strategy for meeting the water MDGs that takes into account physical, financial and institutional constraints, clearly lays out what needs to be done and how much it will cost, and puts forward operational strategies at scale but with local specificity.

[1] Although the original target referred only to safe drinking water, an additional target on basic sanitation was agreed upon at the World Summit on Sustainable Development – see Part II.

About this Report

This background issues paper, issued in the very initial stages of the work of the Task Force on Water and Sanitation, has been prepared to help lay the basis for its future work as well as to put forward some preliminary recommendations. In particular, it is intended to provide a starting point for some of the more detailed analyses and proposals that the Task Force will generate over the months and years to come. Importantly, the ideas and proposals outlined in this document should not be interpreted in any way as the final and unanimous views of the Task Force; rather, everything in this report should be viewed as preliminary, subject to review, modification and improvement in step with the work of the Task Force throughout the course of the three-year project.

In addition to serving as the basis for the future work of the Task Force on Water and Sanitation, the report has two additional functions. First, it is serving as an initial contribution to the preparation of the *Human Development Report 2003,* which will be devoted to the Millennium Development Goals. And second, it is providing an important input to an initial strategy paper for the Millennium Project as a whole (the "Millennium Development Strategy"), which is currently in preparation and which will be completed in March.

This background paper represents the joint effort of the members of the Task Force, a full list of which is provided as Annex 1 to this report. It has been prepared following discussion of a first draft (prepared by the Task Force co-chairs) at a first meeting of the Task Force in November 2002, as well as significant electronic interaction on subsequent drafts. The paper frequently draws directly on various reports, memoranda and studies, the details of which are indicated in the relevant footnotes.

The paper has eight parts.

- Part I provides the institutional context for the Task Force's work. It includes an analysis of the Millennium Declaration and the Millennium Goals and Targets related to Water and Sanitation, and a brief summary of international discussions on water and sanitation, both prior to and after the Millennium Declaration

- Part II contains a brief analysis of key issues that relate to the specific MDG target on increasing access to water and sanitation.

- Part III provides facts and figures aimed at providing an overview of progress towards achieving the MDG Target on access to water and sanitation, including a brief review of existing information on financial requirements.

- Part IV contains an analysis of a few globally relevant success stories in meeting the target.

- Part V discusses the factors that have a key bearing on the ability of countries or communities to achieve the MDG targets.

- Part VI provides a framework for a global strategy to achieve the MDG targets based on the factors outlined in Part IV

- Part VII puts forward selected preliminary proposals for implementation.

- Part VIII contains an examination of the way in which actions in the water resource area will impact on the other MDG targets, especially in poverty, hunger, health and environmental sustainability.

Importantly, this background paper does not pretend to provide all the information needed by the Task Force for its future work. It has therefore been supplemented by the following three kinds of reference materials, which are listed in Annex 2 and available to Task Force members at the project's intranet website[2] as well as on request from the co-chairs:

- Reference Documents for the First Task Force Meeting. This set includes general documents relating to goal-driven strategies in other areas of development, information on the Millennium Goals and the Millennium Project as a whole, and key writings on water and sanitation subjects. It was put together by the Task Force co-chairs in preparation for the first Task Force meeting and distributed to Task Force members present at that meeting.

- Reports Contributed by Task Force Members: This set consists of a wide range of documents, including case studies, contributed by Task Force Members as part of the discussion on the background paper.

- Special Report: This is a report put together at the request of the Task Force co-chairs to supplement the information contained in the main body of the report on the main international actors in water and sanitation, both within the UN system and beyond.

PART I: THE INSTITUTIONAL CONTEXT

The goals and targets relating to water and sanitation outlined in the United Nations Millennium Declaration and in the Millennium Development Goals and Targets were not developed in a vacuum. Indeed, they were the culmination of several decades of international deliberations on the subject. In turn, the water and sanitation issues and agreements outlined in the MDGs were further developed at the World Summit on Sustainable Development in Johannesburg.

[2] http://intranet.unmillenniumproject.org/tf7

International conferences and agreements on water and sanitation[3]

Over the last 30 years, numerous major conferences and international agreements have provided the broad background for today's water resources policies and decision-making. Over the last decade, numerous international conferences have discussed and agreed on steps required to speed up the implementation of *Agenda 21*. Water for sustainable development was discussed at the intergovernmental level in the sixth session of the Commission for Sustainable Development (CSD-6) in 1998, and broad consensus was reached on key water issues. Recent international water meetings (the Second World Water Forum in the Hague in 2000 and the International Conference on Freshwater in Bonn in 2001) served as important fora for multistakeholder dialogues and generated new recommendations on how to address increasing water challenges. The United Nations Millennium Declaration and the preparatory process leading up to the World Summit on Sustainable Development (WSSD) further affirmed the role of water as a key to sustainable development and the urgency of immediate action.

These international meetings have identified several key water issues and challenges, with increasing focus on provision of water supply and sanitation as well as the need for improved governance and integrated water resources management. They proposed many actions to meet the challenges, stressing the importance of taking concerted action to use water as an entry point to achieve the goal of sustainable development. As noted earlier, water is a critical factor influencing the global community's responses and action to accomplish the Millennium Development Goals, including those aimed at reducing poverty, integrating the principles of sustainable development into national policies and programs, improving access to water, improving the lives of poor people and reducing child mortality by 2015.

The Millennium Declaration and the MDGs and Targets relating to Water and Sanitation

Water and sanitation are dealt with in several ways in the United Nations Millennium Declaration and in the final list of Millennium Development Goals and Targets (see background documents).

In Chapter 4 ("Sustaining our Future") of the Secretary General's Report to the Millennium Summit, the Secretary General urged the Summit:

> *"To adopt the target of reducing by half, between now and 2015, the proportion of people who lack sustainable access to adequate sources of affordable and safe water"*

In the Millennium Declaration, the heads of State and Government gathered at United Nations Headquarters in New York from 6 to 8 September 2000 resolved, under the heading "protecting our common environment":

[3] Drawn directly from the Annex to the 2002 publication of the WEHAB Working Group, "A Framework for Action on Water and Sanitation", which also includes a complete list of all relevant major conferences and agreements.

"To stop the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies"

This resolution is explicitly highlighted as a goal on page 34 of the Report of the Secretary General entitled "Road map towards the implementation of the United Nations Millennium Declaration" to the Fifty-sixth session in September 2001 on the follow up to the outcome of the Millennium Summit.

However, in the statement of the United Nations Millennium Development Goals, Targets and Indicators (see background documentation), which lists eight goals and 18 targets, the overall goal relevant to this area (labeled goal #7) is stated more generally as "ensuring environmental sustainability", with three specific targets:

- *Integrate the principles of sustainable development into country policies and programmers; reverse loss of environmental resources*
- *Reduce by half the proportion of people without sustainable access to safe drinking water*
- *Achieve significant improvement in the lives of at least 100 million slum dwellers, by 2020*

Two main conclusions can be drawn from the above. First, the goal of "stopping the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies" appears to have been incorporated in that part of the first target that refers to reversing the "loss of environmental resources". Second, the target urged by the Secretary General in his report to the Millennium Summit was incorporated (with some modifications) in the second target to reduce by half the proportion of people without sustainable access to safe drinking water. Importantly, the Millennium Target itself was modified during the World Summit on Sustainable Development (see below) through the addition of a specific reference to basic sanitation.

The World Summit on Sustainable Development (WSSD)[4]

One of the main outcomes of the WSSD was that water and sanitation were recognized as being inextricably linked to the eradication of poverty and to the achievement of sustainable development. Water and sanitation were identified by the Secretary General as one of the five specific "WEHAB[5]" areas where concrete results are both essential and achievable. To provide focus and impetus to action in the water area, a special document entitled "A Framework for Action on Water and Sanitation" was prepared for WSSD that outlined the larger context in which the MDG Targets were established and provided a

[4] Much of this section was drawn directly from "Preliminary Analysis of WSSD Outcomes on Water, Natural Resources, Natural Disasters and SIDS", Water, Natural Resources and SIDS Branch, Division for Sustainable Development, DESA, September 13, 2002.
[5] WEHAB stands for "Water, Energy, Health, Agriculture and Biodiversity.

holistic view of the multiple impacts of increasing access to water and sanitation by the poor.

WSSD reiterated the Millennium Development Goal to halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water. A new target on halving the proportion of people who do not have access to basic sanitation by 2015—not part of the Millennium goals—was also set. Several elements for a program of action on sanitation were clearly established in the Plan of Implementation, which especially highlighted the need to integrate sanitation in Integrated Water Resources Management (IWRM). Both the water and sanitation targets are set out under the Plan of Implementation chapters on poverty eradication and the natural resource base. Water resource management and protection were also recognized as fundamental to protecting and managing the natural resource base of economic and social development. Water-related policies were included in virtually all of the natural resource objectives of the Plan of Implementation.

Importantly, the Plan of Implementation took a broad view of the actions required to achieve the MDG on water and sanitation, emphasizing the need, for example, to intensify water pollution prevention to reduce health hazards and protect ecosystems and to adopt measures to promote sustainable water uses and address water shortages. The Plan also made a strong call for Integrated Water Resources Management by setting a new time-bound target to "develop integrated water resources management and efficiency plans by 2005, with support to developing countries, through actions at all levels".

Specific activities agreed by the WSSD to achieve water and sanitation targets and objectives include:

1. The establishment of a World Solidarity Fund to eradicate poverty and promote social and human development. Because water and sanitation are linked so inextricably to poverty eradication, projects on water and sanitation could, in principle, be eligible for funding projects at the community level.

2. Elements for a program of action on sanitation.

3. A mandate to launch a program of action, with financial and technical assistance to achieve the Millennium Development Goal on safe drinking water and the additional target on sanitation was established.

4. Development of integrated water resource management and water efficiency plans with support to developing countries, as called for in the time-bound target noted above.

5. Support to proposals and activities for the International Year of Freshwater 2003 and beyond.

6. Call for effective coordination among the various international and intergovernmental bodies and processes working on water-related issues, both within the UN and between the UN and international financial institutions.

Institutional Arrangements for Water and Sanitation[6]

Although there is no global, comprehensive intergovernmental structure for water, there is a very dynamic process of advancing international understanding and co-operation on water for sustainable development. These efforts are led by different governments, by the private sector and members of the civil society, by the work of various UN system entities and by other important regional and intergovernmental bodies, as well as by several organized networks or partnerships like the Water Supply and Sanitation Collaborative Council (WSSCC) and its WASH (Water Sanitation and Hygiene for all) partnership, the Global Water Partnership (GWP), the Gender and Water Alliance, and the World Water Council, and NGOs such as Water Aid, among others. Progress on water for sustainable development requires by its very nature a multistakeholder approach, including the private sector.

Within the UN system, different UN entities are widely involved in water-related and sanitation issues leading towards achieving sustainable development. Perspectives and approaches vary according to the mission and mandates that the governing bodies provide to the different UN entities.

The UN system has established several mechanisms for coordination of its activities in water. The Intersecretariat Group for Water Resources was established in 1977 following the UN Water Conference at Mar del Plata in Argentina, defining areas where interagency collaboration would be important, such as in the implementation of the International Drinking Water Supply and Sanitation Decade (1981-1990). After the Rio Summit, the Group was integrated into the structure of the former Administrative Committee on Coordination as the ACC Subcommittee on Water Resources. Recently, the Subcommittee started a long-term project called the World Water Assessment Program whose main product will be the *World Water Development Report.* Following the recent restructuring of the ACC, the members of the UN system entities dealing with water have decided to form "UN Water", the United Nations Inter-Agency Committee on Water Resources (terms of reference to be provided by UNDESA). Decisions are to be taken at the highest level for this purpose.

As alluded to above and as emphasized elsewhere in this report, there are a large number of national, regional and international institutions and programs actively engaged in the water and sanitation field. In its work to identify organizational means for meeting the MDGs, the Task Force will need to have a clear understanding of this institutional arena. Towards that end, a quick "first cut" at a comprehensive overview of the main international actors in the water and sanitation field has been prepared and is posted on the Task Force website (see Annex 2). The report contains an indicative list of the UN entities most active in the field of water, their main focus areas and some of their key initiatives, which has been drawn directly from Annex II of "A Framework for Action on Water and Sanitation". Since this first cut is necessarily incomplete, Task Force members

[6] Drawn directly from the Annex to the publication of the WEHAB Working Group, "A Framework for Action on Water and Sanitation"

and other reviewers of this paper are invited to add to this summary report as well as edit entries as needed.

Global Strategies, Frameworks and Plans of Action

The development of global plans or frameworks for action have been an inherent part of this process, including in particular the International Drinking Water Supply and Sanitation Decade, the GWP Framework for Action to achieve the Vision for Water in the 21st Century, the WSSCC Vision 21, the Bonn Plan of Action, and the WEHAB Framework for Action on Water and Sanitation, which identified potential means and activities to fulfill mandates emerging from WSSD. These are summarized in Box 1, below.

Box 1. Important frameworks for action that have been produced in recent years

- "Framework for Action on Water and Sanitation" prepared by the WEHAB Working Group for the World Summit on Sustainable Development
- Bonn Plan of Action
- Framework for Action outlined in the WSSCC's document "Vision 21: A Shared Vision for Hygiene, Sanitation and Water Supply and A Framework for Action"
- Numerous national and community level plans that are being prepared under Vision 21's umbrella
- "Towards Water Security: A Framework for Action" prepared by the Global Water Partnership to achieve the Vision for Water in the 21st Century
- The International Drinking Water Supply and Sanitation Decade (1981-1990) and end of the Decade Declaration (New Delhi 1990)

Most of these plans and frameworks for action, however, have fallen short of a full strategy and plan along the lines of what the Millennium Project has been requested to develop, in that they do not lay out the organizational means required for implementation nor provide the degree of clarity needed on the amount, nature and sources of financing required.

The Local Institutional Context[7]

It is widely recognized that water services are often most effectively delivered through decentralized organizations and that voluntary community participation is critical to their success. Historically, water management can be found to lie at the origins of many institutions of local governance that now have a broader role. Aside from the ancient riverine civilizations of Asia and Africa, local governments in European countries such as the Netherlands and Great Britain were rooted in the need to cooperate to manage water on a collective basis in the public interest. This perspective is important not just for the design of water strategies but also to provide an institutional framework for the achievement of other MDGs.

[7] Contributed by Task Force Member Mike Muller

Equally, it is necessary to recognize the plurality of institutions of local government and administration and voluntary community participation and to clarify their roles, inter-relationships and sequence of development.

Conclusions and Implications for the Task Force

The above analysis has the following implications for the work of the Task Force on Water and Sanitation.

First, the Task Force's principal responsibility should be to identify the best strategies to achieve the specific MDG water and sanitation targets (to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation). Importantly, it should also put forward at the start of its work a select number of immediate action proposals that it believes can significantly accelerate progress towards the achievement of these targets. This work would need to deal with broader issues of integrated water resources management because of the need to ensure, for example, that efforts to provide safe drinking water are sustainable and that sanitation goes hand in hand with ecosystem protection.

Second, once the initial round of background issues paper preparation has been completed (by both this Task Force and the other Task Forces in the Millennium Project), the Task Force should examine a select number of issues that cut across the MDGs as a whole. These should include in particular:

- The identification of the actions needed in other sectors if the MDG targets on water and sanitation are to be achieved, and ensuring that these are articulated effectively in the Project's overall strategy for achieving the MDGs.

- The identification of strategies in the area of water resources management required to help achieve the other Millennium Development Goals and Targets, especially in relation to poverty, hunger, health and environmental sustainability.

- Assistance to the two other Task Forces dealing with MDG #7 – the Task Force on environmental sustainability, to help it address the 'goal' of "stopping the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies" as part of the first target that refers to reversing the "loss of environmental resources", and the Task Force on Slum Dwellers, to help it address the specific indicator on sanitation for slum dwellers.

Third, the Task Force should examine the implications of the new time-bound target established by WSSD to "develop integrated water resource management and efficiency plans by 2005, with support to developing countries, through action at all levels."

The Millennium Project Task Force on Water and Sanitation, together with the larger Millennium Project of which it is an integral part, thus represents a unique opportunity to undertake, in an integrated way, three tasks that have heretofore not been undertaken and have normally been considered separately: developing a strategy to meet the MDG

targets on water and sanitation, identifying the actions needed in the water resources sector to meet the other MDG targets, and pinpointing the actions needed in other sectors if the MDG targets on water and sanitation are to be achieved.

Given the wealth of work completed or underway in areas directly related to its work, the Task Force is fortunate in being in a position not to start from scratch but rather to build on past efforts and ongoing processes and apply their results to the Task Force's goal. But in building on these efforts, it will not simply be one more water study. On the contrary, it will have a clear value added, which can be summarized as follows:

- Its clear focus on the Millennium Development Goals, and the authority and visibility that derives from its association with the Millennium Project

- Its dual responsibility to identify the best strategies to achieve MDG target #10 and the best strategies in the area of water resources management to help achieve the other MDG targets.

- Its ability to dovetail an action plan for water in the larger context of action plans to achieve the Millennium Development Goals.

- The intellectual independence that has been granted to the Millennium Project to put forward what it considers to be the best strategies for achieving the MDGs.

- The analytical strength that derives from the project's overall framework and methodology.

PART II: ANALYSIS OF MDG TARGET #10 ON ACCESS TO DRINKING WATER AND BASIC SANITATION

This part of the report contains a brief analysis of the specific MDG target #10 on increasing access to water and sanitation.

The Four Components of MDG Target #10 on Water and Sanitation

At the start, it is important to highlight four issues inherent in the MDG Target #10 ("to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation").

First, the baseline date for these targets, which was not made explicit in the original wording, needs to be clarified. Several other MDG Targets (#1, 2, 5, 6, and 11) call for specific improvements with respect to some baseline year, but with the exception of the Slum Dwellers Target (#11), they all specify this baseline year as 1990 (and in the case of Target #11 this ambiguity matters slightly less since an absolute number of Slum Dwellers whose lives are to be improved is arguably an inappropriate way to measure progress at the country level). This Task Force must therefore make its own determination of the baseline date. Taking into account that the UN Statistics Division and UNICEF use 1990 as their baseline year, and that as a result the Secretary General's

report on progress towards achieving the MDGs will use the same year, it is proposed that the same baseline date be adopted, in order to ensure maximum consistency with other UN publications and the work of the Secretary General.

Second, "sustainable access" must be viewed from a social and economic perspective as well as an environmental one. It includes a physical/infrastructure dimension – for example, access to drinking water means the existence of infrastructure in good working order – but also embraces a concept of use[8]. For example, access to sanitation cannot simply be measured in terms of whether a toilet is installed, but whether that toilet is working and used for safe disposal of excreta with improved hygienic practices, as otherwise there will be negative health impacts.

Third, the targets can and should be set (and monitored against) at both global and national levels and even sub-national levels for large nations like China, India, Brazil, Nigeria, etc. National targets must be owned by each country – some countries, for example, are well on track to achieving one or more of the above targets and can aspire to something much more ambitious. Likewise, intermediate milestones (e.g., for 2005 and 2010) should be set at both national and global levels (as well as sub-national levels where appropriate). Progress at both levels should be monitored and evaluated in terms of these intermediate milestones.

Fourth, the target itself has four components, since "people without sustainable access to safe drinking water and basic sanitation" encompasses four fairly distinct groups. This is depicted in greater detail in Figure 1, below. An overall strategy for achieving the Target will therefore need to have distinct sub-strategies to address problems of urban water supply, rural water supply, urban sanitation and rural sanitation.

Figure 1. Components of MDG Target #10

Urban Water Supply Reduce by half, by 2015, the proportion of urban people without sustainable access to safe drinking water	**Urban Sanitation** Reduce by half, by 2015, the proportion of urban people without sustainable access to basic sanitation
Rural Water Supply Reduce by half, by 2015, the proportion of rural people without sustainable access to safe drinking water	**Rural Sanitation** Reduce by half, by 2015, the proportion of rural people without sustainable access to basic sanitation

Two points relating to these four targets need to be highlighted here:

[8] For example, the Public Affairs Center (PAC) in India has conducted a survey of 36,500 households regarding basic services. Their data indicates there is a gap, sometimes wide, between availability of a service and its satisfactory functioning, e.g. water pumps installed in villages, but not functioning.

- The urban sanitation target is similar to one of the key indicators of the target addressed by the "Slum Dwellers" Task Force, which is to have achieved, by 2020, a significant reduction in the proportion of urban population with access to improved sanitation. This component of the Task Force's work will therefore need to be developed in close cooperation with this Task Force[9].

- Decomposing the overall challenge into four groups will need to take into account the many interconnections among the four, as well as the fact that there are a range of situations from sparsely populated rural areas to densely populated urban systems, characterized by increasing levels of population density.

One additional point for consideration by the Task Force is that the 2004 *World Development Report* is intending to investigate how countries can accelerate progress towards the MDGs by making services work for poor people. The *Report* is intended to serve as a guide to policymakers, donors, and citizens on approaches that can be followed to improve the delivery of basic services. Since the services selected for in-depth treatment in the *Report* are water, sanitation, health and education, the Task Force could greatly benefit by close collaboration with the World Bank team working on the 2004 *World Development Report.*

Definitional Issues

For the MDG targets for water and sanitation, there is a need for a common agreement on three things: (a) the terminology for access to both water and sanitation, (b) the operational meaning of the agreed terminologies, and (c) survey instruments and indicators for assessing progress towards the targets. The targets for this Task Force are:

1. To halve, by 2015, the proportion of people without sustainable access to safe drinking water
2. To halve, by the year 2015, the proportion of people who do not have access to basic sanitation

The target for drinking water was defined at the Millennium Summit as part of the MDGs. The baseline global data available on the current status of this target are what is contained in the "Global water supply and sanitation assessment 2000" prepared under the WHO/UNICEF Joint Monitoring Program, JMP (see background documentation). Whereas the MDG target on water uses the terminology of "safe drinking water", the JMP Report uses the terminology of access to "improved" water technology types. It has been argued that this "change in terminology reflects both the past misrepresentation, and the future uncertainty, in judging and defining services as "safe" in terms of human health[10]. It appears, however, that the meaning of "improved" is still an issue. One

[9] Task Force member Gouri Ghosh has noted, "There is a distinct difference between urban slums and peri-urban or poor urban areas (which sometimes may not be a slum but may have a serious problem). It is better to subdivide the urban groups into three main components: urban slums, peri-urban and neo-urban conglomerates like those areas in transition from large rural pockets to regular urban areas like the Nagar Panchyats or towns in India and China respectively."

[10] Hunt, C. (2001). How Safe is Safe? A Concise Review of the Health Impacts of Water Supply, Sanitation and Hygiene. London, WELLS (LSHTM/WEDC):22

interpretation has been proposed by a task force on monitoring established by the Water Supply and Sanitation Collaborative Council, WSSCC. According to this task force*, a person is said to have access to "improved" water supply if the person has access to sufficient drinking water of acceptable quality as well as sufficient quantity of water for hygienic purposes*. A survey instrument being prepared by the WSSCC task force gives further elaboration of the meanings of these two aspects of improved water supply.

As mentioned earlier, the target for sanitation was established at the 2002 World Summit on Sustainable Development, WSSD. The terminology chosen for this target is "basic sanitation". In contrast, the terminology used in the JMP report is "improved sanitation". The term is defined in the JMP report as a sanitation system in which excreta are disposed of in such a way that they reduce the risk of fecal-oral transmission to its users and the environment. It would appear, though, that in choosing "basic sanitation" as the preferred terminology, the Summit had something more in mind. It linked access to sanitation to improved human health and reduced infant and childhood mortality. Basic sanitation was defined more explicitly to include actions on the following:

- Development and implementation of efficient household sanitation systems
- Improvement of sanitation in public institutions, especially in schools
- Promotion of safe hygiene practices
- Promotion of education and outreach focused on children, as agents of behavioral change
- Promotion of affordable and socially and culturally acceptable technologies and practices
- Development of innovative financing and partnership mechanisms
- Integration of sanitation into water resources management strategies in a manner which does not negatively impact on the environment (includes protection of water resources from biological or fecal contamination)

It is apparent that the WSSD definition is broader that what is envisaged in the JMP report and is more impact oriented. It is definitely not focused on the number of toilets as the target goal but rather on the creation of an overarching process for improved health and hygiene through basic sanitation. Operationally, though, the JMP definition is simpler. On the other hand, it does not reflect the health risks from poor disposal of sullage or wastewater from domestic sources. Diseases like malaria, filariasis and schistosomiasis are transmitted through poor disposal of sullage and excreta, but they are not necessarily transmitted through the fecal-oral route. The issue of privacy and dignity should also be considered since they affect willingness to use available sanitation facilities, as also is health and hygiene education. With these in mind, it is recommended that improved access to improved sanitation be defined as follows:

> *Access to, and use of, excreta and wastewater facilities and services that provide privacy and dignity while at the same time ensuring a clean and healthful living environment both at home and in the immediate neighborhood of users.*

Monitoring and Evaluation Issues

The existing baseline information for assessing progress towards the MDG targets for water and sanitation is what is provided in the JMP report. The partners for the preparation of this report are the WHO and UNICEF. A third partner is the WSSCC, which has established a monitoring task force to develop a survey instrument for monitoring progress towards the two targets.

Another data source is that produced under the Demographic and Health Surveys (DHS) program funded by the USAID and implemented by a private corporation known as Macro International. The DHS are nationally representative household surveys with large sample sizes that are typically between 5,000 and 30,000 households. They provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. Their household surveys include questionnaires on sources of drinking water and toilet facilities, among others[11].

There are definitional and data availability issues that tend to hamper our ability to measure progress towards the targets. Secondly, the available statistics often mask the situation on the ground. A mismatch between the statistics and results of spot checks give the impression that there is something very wrong with the global statistics. And that something needs to be done to define and make them more realistic and useful. A major problem is still that governments probably doctor the data, and that there are perverse incentives for governments to provide poor data. (Moreover, data must be properly utilized in time for evaluation and continuous change of course and policies based on their feedback.)

It would appear that there are sub-national data available from DHS studies and from national census data banks. However, the raw data used for monitoring and evaluation (and for the Task Force's work on mapping) is either the internationally recognized JMP data at national scale, or sub-national scale data that lack quality control. This raises questions about how far we can go at a sub-national level at present.

It is recognized that a few major countries like Brazil, China, and India have sub-national information on the various MDGs; however, such data are available only in those countries that are on track in achieving the MDGs. This means that, while we can conduct studies on those countries that have good sub-national data, these are generally not necessarily the problem countries.

All this creates a dual challenge for the Task Force. On the one hand, it should see how far it can go with existing data; on the other, it should put forward a proposal to improve the current situation (perhaps creating an international data base that is fully consistent with the MDGs, as defined). Thus although this initial report will draw on the JMP data for its analysis, it will at the same time issue a challenge to the JMP. Meanwhile, we need to work on achieving the goals even in the context of inadequate information. The position of the Task Force is to recognize that there are problems with both the

[11] A further data source is UNICEF's MICS survey, also based on household surveys.

definitions and the achievement of the MDGs. There is thus a need to move forward on achievement, while at the same time improving upon the definitions and data.

With this in mind, it should be possible for the Task Force to work with both the DHS and the WSSCC task force on monitoring to develop an agreed protocol and survey instrument for monitoring and progress towards the targets for drinking water supply and sanitation. At issue, however, is the fact that whereas the targets for drinking water supply and sanitation relate to halving the proportion of people that are without access, the basic sampling unit used by both the DHS and the WSSCC monitoring task force is the household. There is therefore a need to work further on the basic sampling unit to determine how best it can be used with or without modification to meet the needs of the water and sanitation task force.

The challenge will be first to reflect the fact that provision of water services infrastructure is a necessary but not sufficient attribute to ensure service access; and second, that true access can only be measured by surveys of users at household level which can reflect cultural acceptability and household affordability as well as the technical reliability of services.

PART III: FACTS AND FIGURES ON ACCESS TO WATER AND SANITATION

This part of the report aims to provide the reader with an overview of progress towards achieving the MDG Target on access to water and sanitation, followed by analyses of the location of the unserved and on financing.

Available information on progress toward the MDG Targets for Water and Sanitation

The Human Development Report for 2002 (HDR2002) provides information on progress towards the MDG Target for safe drinking water, using 1990 as the baseline year (see Part II). The assessment was done for all the UN member countries, except the high-income OECD countries; but it included Hong Kong and China. For 75 countries, that represent 10.3 percent of the world's population, no assessment was made because no data was available for the assessment.

The method used for the assessment was linear interpolation of trends in the 1990s, using two data points that are at least five years apart. The same basic approach can be used for assessing progress in the future towards the targets for water and sanitation.

The results show that 25 countries have already achieved the target for water. Of these, four (Singapore, Sri Lanka, Bangladesh[12], and the Maldives) are from Asia; only one, Mauritius, is from sub-Saharan Africa. There are 43 on track towards the goal, of which eight and nine are from Asia and Africa, respectively; and there are 25 that are lagging behind, are far behind or are even slipping. Of these 13 are from Sub-Saharan Africa; only four (The Philippines, Vietnam, Myanmar and China) are from Asia. The results

[12] Note, however, that progress in Bangladesh must be evaluated in the context of the significant problem the country is currently facing of arsenic in groundwater supplies.

further show that 43.4 percent of the world population have either achieved the goal or are on track towards it. They also show that 32.1 percent are lagging behind the target.

The JMP report for 2000 throws more light on regional coverage with both improved drinking water and improved sanitation at the turn of the century. Even though existing data sources may have some shortcomings, they are nevertheless the best data sources available. They are therefore used as the basis for the discussion in this section of the Paper.

The JMP report shows that, for both water supply and sanitation, Asia and Africa are the two regions where lack of access is highest. By the end of the century, a total of about 1.1 billion people lacked access to improved water supply. Asia and Africa account for 86 percent of these (61 percent lived in Asia and 25 percent in Africa).

The report also shows that about 2.4 billion people in the world lacked access to improved sanitation. Asia alone accounted for 79 percent of them. Some 12 percent lived in Africa and 5 percent lived in Latin America and the Caribbean. These results are as depicted in Table 1.

Table 1. Regional Distribution of People without Access to Improved Water Supply and Sanitation in 2000[13]

Region	Percent of global total without access to **improved water** that live in stated region	Percent of global total without access to **improved sanitation** that live in stated region
Sub-Saharan Africa	25	12
Middle East/North Africa	4	2
South Asia	19	37
East Asia/Pacific	42	42
Latin America & Caribbean	6	5
CEE/CIS & Baltic States	4	2

Table 2 gives information on the percentage of people within each region that were without access to improved water and sanitation in 2000. The Table shows that for all the regions, access was worse for sanitation than for water, and that there were wide disparities between urban and rural access. For all the regions, access in rural areas was far worse than it was in urban areas. Finally, the table shows that for drinking water, the worse performing region was Africa where 43 percent of the people in the region were without access to improved drinking water supply; the others are East Asia (24 percent without access), South Asia (15 percent without access), and Latin America where 14 percent of the people are without access to safe drinking water. In the case of sanitation, the worse performing region was South Asia where 66 percent of the people in the region were without access to improved sanitation; they were followed by East Asia (52 percent without access), Sub-Saharan Africa (47 percent without access), and Latin America and the Caribbean where 23 percent of the people in the region were without access to improved sanitation.

[13] Source: WHO/UNICEF Joint Monitoring Program, 2001

Table 2. Percentage without Access to Improved Water Supply and Sanitation within Regions in 2000[14]

Region	Percent Within Region Without access to Improved Water			Percent Within Region Without Access to Improved Sanitation		
	Urban	Rural	Total	Urban	Rural	Total
Sub-Saharan Africa	17	56	**43**	27	57	**47**
Middle East/North Africa	5	23	**13**	7	30	**17**
South Asia	6	20	**15**	33	78	**66**
East Asia/Pacific	7	33	**24**	27	65	**52**
Latin America & Caribbean	6	34	**14**	14	48	**23**
CEE/CIS & Baltic States	5	18	**9**	3	19	**9**
Industrialized Countries	0	0	**0**	0	0	**0**
Developing Countries	8	31	**22**	23	65	**48**
Least Developed Countries	18	45	**38**	29	65	**56**
World	5	29	**18**	15	60	**39**

Based on the current coverage levels, and using projected population figures from the UN Population Division, UNICEF[15] has estimated that the number of people to be reached with water and sanitation facilities by 2015 are as indicated in Table 3.

Table 3. Number of people to gain access by 2015 (in millions)

Regions/Country categories	Number of people to gain access to an improved drinking water source by 2015			Number of people to gain access to improved sanitation by 2015		
	Urban	Rural	Total	Urban	Rural	Total
Sub-Saharan Africa	175	184	359	178	185	363
Middle-East and North Africa	104	30	134	105	34	140
South Asia	243	201	444	263	451	714
East Asia and Pacific	290	174	465	330	376	705
Latin America and Caribbean	121	20	141	132	29	161
CEE/CIS and Baltic States	27	0	27	24	0	24
Total	**961**	**609**	**1570**	**1032**	**1076**	**2108**

The MDG sanitation target of reaching 100 million slum dwellers is relatively modest compared to the Vision 21 sanitation target of halving the proportion of people unserved, or reaching 1032 million people (urban only).

[14] Source: WHO/UNICEF Joint Monitoring Program, 2001

[15] From UNICEF, "Financing the International Goals for Water and Sanitation," provided by Task Force member Vanessa Tobin.

The Location of the Unserved[16]

The development of an overall strategy for achieving each of the four components of the MDG Target #10 requires a clear analysis of the location of the people without sustainable access to safe drinking water and basic sanitation. Such an analysis will enable the strategy to adopt a highly focused approach – concentrating on those particular countries and major urban and rural areas within them that are most likely to face serious difficulties in meeting the targets. The analysis would entail asking, for each of the four components of the target, the following kinds of questions:

- Which countries (and major urban and rural areas within them) are "on track", "off track" and "falling behind"?
- Which countries (and major urban and rural areas within them) have made fastest progress towards the target over (say) a 30-year period? What triggered these countries to go to scale and achieve the Targets (or move in the direction of the Targets)?
- Which countries (and major urban and rural areas within them) are "on track" but only in concentrated areas (where averages are misleading since large, concentrated sections of the population are "off track")?
- What are the key disparities within countries that are "on track" (between rural and urban areas, majority and minority ethnic groups, women and men, different regions of the country)
- Which are the countries (and major urban and rural areas within them) for which data are lacking or incomplete? Which are the countries (and major urban and rural areas within them) where data are missing? What needs to be done to fill these data gaps?
- Which are the major countries/sub-national urban/rural areas that will drive the attainment of the MD Targets on water and sanitation?
- How do progress rates in achieving the MD targets correspond with rates of population growth?

A key challenge for the Task Force will therefore be to develop a good knowledge base on who and where are the people without sustainable access to water and sanitation. Such a database would be even more valuable if it can be integrated with information on those issues that impact, and are impacted by, water and sanitation access (such as poverty, health and environment conditions). To facilitate the work of this and other Task Forces in this area, the Millennium Project as a whole is launching an initiative to "map" the MDGs (and other relevant variables) as a core cross-Task Force element of the Project's analytical work. The output of the mapping[17] initiative, which will be led by the Center for International Earth Science Information Network (CIESIN) at the Earth Institute at

[16] Parts of this section draw directly on a Memorandum dated August 30, 2002, to all Task Force Coordinators by John McArthur and Jeffrey Sachs, subject "CIESIN-led mapping initiative", available on the Task Force intranet website.

[17] In this context the term "mapping" refers to spatial data integration that includes geographic visualization. In particular, the methodology allows for time-series analysis and multi-variable regressions at a disaggregated level. Please note that "mapping" here implies significantly more than traditional two-dimensional spatial plots of a single indicator.

Columbia University, will take the form of integrated spatial data sets and multi-dimensional maps providing a systematic analysis of the quantitative linkages between different variables. For example, disaggregated maps may help us to pinpoint the spatial spread of people without access to sanitation, and (equally if not more importantly) to understand the relationships between these issues and such variables as poverty or health conditions.

Although it will probably not be possible to map all desirable variables at a disaggregated level for all countries, the goal is nonetheless to be as comprehensive and as detailed as possible in advancing our collective knowledge base. While data availability will undoubtedly affect the potential for advancement, regardless of the level of resolution that can be achieved for a particular variable in a particular country, the mapping initiative should still be able to significantly improve our understanding of the water and sanitation target and the relationships with other dimensions of development.

Conceptually, the workflow of the mapping initiative will consist of four steps: identifying and prioritizing the Task Force's key mapping questions; selecting, retrieving and documenting data; preparing data and beginning data integration; and refining and analyzing maps.

Financing water supply and sanitation

A financing strategy for the increases in investments required to meet the water and sanitation MDGs will need to identify the required levels of capital investments and operating expenses. Some preliminary information on the subject, based on a specially commissioned paper prepared by the central office of the Millennium Project [18] plus material provided by Task Force member Vanessa Tobin[19] and comments by Task Force member Richard Jolly, follows. Additional discussion on the subject can be found in the note prepared by Task Force member Bill Cosgrove entitled, "Comments on Monterrey Estimates." (See Annex 2.)

Available Estimates of Costs for Water Supply and Sanitation

At the start, it is important to distinguish very carefully the different types of costs involved in water resource development:

- the specific cost of reducing by half, by 2015, the proportion of people without sustainable access to drinking water and basic sanitation

- the cost of ensuring water and sanitation and waste disposal in urban areas especially reticulated water, waste disposal and major sewage schemes

- the cost of providing water for other purposes

[18] "Financing Water Supply and Sanitation", by Guido Schmidt-Traub, Millennium Project, October 2002.
[19] UNICEF, "Financing the International Goals for Water and Sanitation", n.d.

This distinction is important, because although the work of the Task Force focuses on the first set of costs, several of the cost estimates for the future include the second and the third. It is also important to distinguish between costs that are clearly additional, and those that are affordable through restructuring of existing expenditures.

UNICEF has prepared preliminary estimates for the first type of cost, based on the numbers of people to gain access indicated in Table 3, and unit cost derived from four different sources[20]. The results are indicated in Table 4 below. Key assumptions used in arriving at these cost estimates are summarized in Box 3. As can be seen, global financing costs range from $50-102 billion for water supply, and from $23-42 billion for sanitation for the period 2001-2015. Taking an average would yield $68 billion for water and $33 billion for sanitation, for a total of $101 billion or $6.7 billion per year.

Table 4. Summary of costs for reaching WES goals (USD x million)

Sources of cost data	Targets		
	Water	Sanitation	
	Vision 21/ MDG for 2015	Vision 21 goal for 2015	MDG for 2015
Vision 21	57,185	41,936	2,500
Global WSS Assessment/JMP	62,753	28,835	2,246
Nigam & Ghosh	50,653	23,644	2,228
Briscoe & Garn	102,192	36,557	2,500

Box 2. Key Assumptions used in arriving at the estimates in Table 4

- The idea of a "minimum package" was used in which low service levels (technologies and costs) were applied for rural populations and intermediate service levels were applied for urban populations (vast majority of need assumed to be in peri-urban/slums).
- To reach these low and intermediate service levels, costs of specific technologies were averaged.
- The sources of cost data used provide estimated costs related only to direct *construction costs*. Other program delivery costs necessary for ensuring sustainability (hygiene education, training, institutional development and operation and maintenance costs) are not included. Nigam/Ghosh proposed an additional cost of 10% as being appropriate.
- While population growth over the 15 year period was accounted for, constant figures for unit costs were used.
- Where sanitation costs were given as cost per facility, an assumption of 5 people per household sanitary facility was made. Water costs were given on per capita basis.
- The 100 million slum dwellers (MDG sanitation target) were distributed over the regions by applying the proportion of urban populations unserved by region in 2000.

The most comprehensive estimate of financing requirements for the water resource sector as a whole (i.e., all three types of costs indicated above) to date is contained in the publication "*Towards Water Security: A Framework for Action"*, which was prepared by

[20] "Vision 21: A shared vision for Hygiene, Sanitation and Water Supply and a framework for action (also forming the "Water for people" component for the World Water Vision)", WSSCC, 2000; "JMP: Global Water Supply and Sanitation Assessment 2000 Report", UNICEF/WHO, 2000; "Costs and Resources for WES in the 1990s" by Ashok Nigam and Gourisankar Ghosh, WaterFront, Special Issue, 1994; "Financing Agenda 21: Freshwater", John Briscoe and Mike Garn, The World Bank, February 1994.

GWP in 2000. As the authors themselves acknowledge, their findings, as summarized in Table 5 below, are preliminary and should not be seen as accurate estimates of the actual financing required. In particular the estimates lack the necessary differentiation by region and income levels, and were not prepared in the context of the MDGs.

Table 5. Funding of water and sanitation sector in developing countries (GWP 2000)

(In $ billions)	Current annual investments in 2000	Estimated investments p.a. for achieving the Vision	Estimated funding gap
Access to drinking water	13.0	13.0	0.0
Sanitation and hygiene	1.0	17.0	16.0
Municipal waste water treatment	14.0	70.0	56.0
Industrial effluent	7.0	30.0	23.0
Agriculture	32.5	40.0	7.5
Environmental protection	7.5	10.0	2.5
Total	**75.0**	**180.0**	**105.0**

Future investment needs summarized in Table 5 are calculated on the basis of the Vision exercise. The cost of providing access to urban water supply is estimated to be $87.5 per capita and calculated using the assumption that 75% of the new connections will be made using a common water standpipe and only 25% will be obtained through a separate household connection. For urban sanitation facilities, the authors assume four different technologies costing between $25-$300 per person. These are equally weighted in the projections, yielding an average cost per person of $137.5. The cost of providing access to water and sanitation for the rural population is budgeted at $15 and $10 per capita, respectively.

The report also includes estimates for wastewater treatment costs. In the absence of reliable global data, the proportion of human wastewater treated today is assumed to be 10% and projected to rise to 20% by 2025. This will be achieved using low-cost water treatment facilities costing $63 per capita with O&M costs budgeted at 15% of annual investment levels.

Cost estimates for agriculture and environmental protection are based on global figures for area under irrigation without taking into account variations in geohydrological, soil, and climate conditions.

Clearly, all the above cost estimates are “back of the envelope” calculations and should therefore be treated with extreme caution. Actual financing needs for halving the number of people without access to improved water supply and sanitation by 2015 need to be calculated on the basis of disaggregated data and may deviate significantly from current estimates.

Currently available financing and resource flows

It is difficult to estimate current levels of investments in the water and sanitation sector since money tends to come from a number of different sources and includes contributions in kind. Annamraju *et al.* (2001) quoting Briscoe (1998) and Sunman (1999)[21] estimate that the $27-30 billion invested annually for all developing countries in access to drinking water, sanitation, and municipal waste treatment[22] can be broken down by source as shown in Table 6.

Table 6. Breakdown of investments in access to drinking water, sanitation, and municipal waste treatment for all developing countries (Annamraju *et al.* 2001)

Source	$ billion	percent
International		
External Aid Flows	5	20
International Private Flows	2-2.75	7-11
Domestic		
Public Sector Investments	18-22	70-75
Private Sector Investments	1-2	3-8
Total	**27-30**	**100**

As part of its analytical work the Task Force on Water and Sanitation will need to refine these estimates to obtain a robust understanding of baseline investment levels available to the sector.[23] Of particular interest to poor countries would be a detailed assessment of the domestic investments in water and sanitation infrastructure made by the private and informal sectors. It will also be important to analyze the changes in these investment levels over time, and the extent to which such investments have truly been focused on the needs of the poor and thus on the MDG targets as such.

The rationale for investments in water and sanitation

A key challenge for the Task Force will be to articulate clearly the rationale for investments in this area and the cost-effectiveness of water and sanitation approaches to improve health – both to make the case to economists and others who must consider the relative benefits to alternative use of resources, and to guide the Task Force's own work in establishing criteria for choosing alternatives within safe water and sanitation under specific conditions of time and place. In analyzing this issue in detail to date, the Task Force will need to do consider both the health and the non-health impacts of increasing access to water and sanitation. Health impacts relate primarily to the ultimate reduction of mortality and morbidity, especially for children, whereas non-health impacts include such factors as increased tourism, the education of girls, and reductions in productivity

[21] Annamraju, S.; Calaguas, B.; Gutierrez, E. (2001*) Financing water and Sanitation*, A WaterAid briefing paper; Briscoe, John (1998) *The Changing Face of Water Infrastructure Financing in Developing Countries*, Submitted for publication International Journal of Water Resources Development , September 1998; Sunman, Hilary (1999) *Towards an Assessment of Financial Flows in the Water Sector*, Background paper prepared for the Global Water Partnership Framework for Action.

[22] Note that this figure includes investments that go considerably beyond water supply and basic sanitation.

[23] For example the OECD DAC database contains detailed information on international donor financing

losses and malnutrition (stunting and wasting, especially in South Asia). Summary information on health impacts provided by UNICEF is attached as Annex 3.

Recommendations for the Task Force

Based on this preliminary information and the ongoing work by other organizations, the Millennium Project Task Force on Water and Sanitation has to develop a thorough and robust understanding of the financing needs for the sector. As a first step, the Task Force has decided to gather more information on:

- The costs involved in improving sustainable access to water and sanitation through a variety of different organizational forms, public utilities and community development groups, and the underlying conditions under which each organizational approach is suited [24]

- Current resource flows in the area of water and sanitation, at both global and national levels. The analysis would help pinpoint the extent to which funding to meet the water and sanitation targets has been decreasing in recent years, and also help address such issues as how much current funding for water and sanitation is being directed to the poorest countries that are most in need of funding assistance, and how much funding is being allocated within countries to projects that increase access by the poor.

In addition, the Task Force will need to carry out detailed assessments, at both national and sub-national levels and for both rural and urban settings, of

1. Required capital investments to provide water and sanitation services to previously unserved people as well as the cost of scaling up existing infrastructure to meet growing demand.
2. Operating costs for water and sanitation networks, including O&M as well as repairs and replacement of existing infrastructure.
3. Costs of institutional and sector reform work, such as decentralization to local governments, which will often need to precede investments in water supply and sanitation

A robust modeling of the capital investments required for extending coverage of water and sanitation services will need to include the following:

- Comprehensive cataloguing and costing of best practice technologies for different environments and the required O&M practices, including an assessment of the scope for future cost savings due to technological improvements.

[24] Different organizational forms to be looked into whose costs vary widely are (1) government; (2) NGOs; (3) village elected groups; and (4) spiritual organizations. The latter are fairly wide-spread in some countries but not known since they do not generally seek government or outside funding.

- Identification of additional investments, which domestic (and possibly industrial) users will need to make for their own water and sanitation facilities.[25]
- Detailed costing of the scaling up and upgrading of existing water and sanitation facilities to satisfy growing demand – particularly in fast-growing urban environments.
- Specification and costing of water treatment facilities for domestic and industrial effluents.
- Costing of required investments in "software" for each type of environment. In particular this includes improved hygiene education and training for O&M.
- Costs of sector reform and of national institutional reform to serve as a basis for sector reform.
- Costs of community mobilization and organization.
- The additional investments that will be required to stimulate the tertiary sectors, and also the related strengthening of the market to develop a healthy competitive environment to reduce costs[26].

A first cut at these questions can be obtained by systematically cataloguing all major water and sanitation projects carried out by the World Bank, UNDP, as well as other organizations. This will yield an extensive database of deployment costs for the commonly used water and sanitation technologies.

For an improved understanding of the operating costs of water and sanitation services we will need to develop robust estimates of costs relating to

- Drinking water treatment
- Drinking water provision – including long-term changes in available freshwater supplies caused by climate change and the impact on water costs
- Wastewater treatment and recycling and reuse
- O&M at all levels
- Repair and replacement of existing infrastructure
- Hygiene education and training for O&M
- Social mobilization and marketing
- Regulatory work, especially for protection of quality and quantity of groundwater
- Promotion and cost of simple models of rain water harvesting and water treatment

Investment needs relating to O&M, repair and maintenance depend heavily on the quality of the existing infrastructure. While it will be particularly challenging to arrive at robust estimates for these figures it is imperative to include them in estimates of financing needs for the water and sanitation sector since they may significantly alter the overall level of investments required.

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[25] In the case of urban sanitation for domestic users, this may represent a significant investment. A World Bank study in El Alto (Bolivia) found that the cost for a rudimentary "bathroom" may exceed the per capita investment in the water and sanitation infrastructure. These investments are typically not included in financing estimates for the water and sanitation sector.

[26] Task Force member Gouri Ghosh has noted that the hand pump development program in India, for example, resulted in reduction of costs, development of the private sector, and increased exports.

Both capital investments and operating costs need to be estimated at national or ideally sub-national levels to account for variations in water availability, climate, population density, and cultural preferences.

PART IV: GLOBALLY RELEVANT EXAMPLES OF SUCCESS IN MEETING THE WATER AND SANITATION TARGETS

In this Part, a brief look is taken at some case studies to find out what lessons can be distilled from them to guide the formulation of strategies for pursuing the targets. Although ideally, the lesson learning should be based both on failures and successes, in this first cut only successful (and possibly scaled up) cases are considered. These case studies have been selected to demonstrate a variety of approaches that appear to be working. These include community management of rural water and sanitation projects, improving service for the urban poor, and increasing urban coverage for both the poor and the non-poor. We will, however, start with a case that shows what is being done to reach the water target.

Turning the "Right to Water" into a Reality: The South African Experience[27]

This case study illustrates the importance of political will in introducing a radical policy and sector reform that led to the adoption of a policy of free access to basic water supply, thereby helping South Africa to make rapid progress towards the MDG Target for water.

In 1994, 15.2 million out of South Africa's population of 40 million lacked access to basic water supply (i.e. 25 liters per person per day of water of acceptable quality within 200 meters from home). Of these, 12 million lived in rural areas. In addition, 20.5 million lacked access to basic sanitation (defined in South Africa as a ventilated improved pit latrine or its equivalent). South Africa has used a combination of instruments to turn things around. These include introduction of policy reform with an accompanying legislative framework; devolution of responsibility for water supply and sanitation from the national level to the local government level, using community-based approaches; launching of a capital works program which has provided infrastructure to meet the needs of over seven million people; and the introduction of free access to basic water supply through which water has been provided for some 27 million people by July 1, 2002. As a result of all this, South Africa hopes that within seven more years all in South Africa would have access to basic water supply.

This remarkable success in increasing access to basic water supply has been underpinned by a strong political leadership and support from the national government which made it possible to devote so much funds to support the capital works program and the free basic water policy. An important contributory factor has been the existence of a very substantial institutional and technical capacity that was already in place before 1994. The existence of an appropriate institutional framework facilitated the introduction of legislation needed for the program. The policy of free access to basic water was made possible by the level of economic development in South Africa. This is not necessarily

[27] Drawn from the "Blue Gold" series on African experience in water and sanitation, World Bank Water and Sanitation Program, 2002

applicable to less developed countries unless they benefit from new and creative concessional funding from external sources.

From Central to Local Government and Community-based Approach to Rural Water Supply: The Experience in Ghana[28]

This case study involved a shift from a supply-driven central government approach to a demand-driven approach to rural water supply and sanitation. It also involved a shift in the role of central government, from that of an implementer to that of a facilitator, with greater involvement of the private sector, thereby introducing competition with consequent improvement in performance and reduction in the cost of service provision.

It all started in 1990. Up to that time, one national public authority, the Ghana Water and Sewerage Corporation (GWSC), was responsible for water and sewerage services for both urban and rural areas throughout Ghana. During that period, most rural communities were served by boreholes equipped with hand pumps. The boreholes were drilled by the GWSC, donors or NGOs that also maintained them. There was only one private drilling company. The drilling market was characterized by lack of competition. As a result, the average cost of boreholes in Ghana was $9,000 compared to $3,000 in the UK or the USA. Mobile crews were responsible for the maintenance. In the circumstances, only about 40 percent of hand-pumps worked at any time. There was no sense of ownership by the communities that were served by hand-pumps. So when hand-pumps broke down, they simply waited for them to be repaired when the mobile repair crew reached their communities. The situation was no better for piped systems that suffered long periods of supply interruptions due to breakdowns and maintenance neglect.

Beginning from the late 1980s, a number of institutional and policy reforms were introduced. New legislation was introduced under which the GWSC was replaced by the Ghana Water Company limited (with responsibility for urban water supply) and the Community Water and Sanitation Agency (with responsibility for rural water and sanitation services). A new national water and sanitation policy was also introduced to shift the approach to service provision from a supply driven one to a demand responsive approach.

Under the new national policy, certain core functions were transferred from central government to the local government and the communities. Ownership of water supply was transferred to the local governments and the communities. The private sector became increasingly involved in various aspects of service provision. In one $20 million World Bank-financed community water and sanitation project implemented in 26 out of the 110 districts in the country, district assemblies constructed 1,200 water points and 29 piped systems. There was a lot of private sector and NGO involvement in the project. This included four drilling companies, 32 NGOs and community-based organizations (CBOs). Several national and international NGOs were commissioned to train and build the capacities of the district level NGOs and CBOs. The success of this project has led to a follow-up $80 million nine-year World Bank-supported project. One of the aims of the

[28] Drawn from the "Blue Gold" series on African experience in water and sanitation, World Bank Water and Sanitation Program, 2002

new project is to shift from individual donor-supported water supply projects to a sector-wide approach under which all external support agencies would be encouraged to pull their resources into a single national water sector program.

Several factors have helped to make this reform process successful. A key factor was the speed of implementing the reform process. It was not rushed. Instead, a gradual approach was followed in the transfer of responsibility from the central level to the local government and community level. The transfer rate was matched to the rate of technical capacity building and support from the central level in the areas where local capacity was deficient. Secondly, the involvement of the private sector was accompanied by an incentive structure under which contractors were paid for their outputs rather than their inputs. Finally, the decentralization of service provision was facilitated by the general process of decentralization taking place within the country at the time.

Unbundling between Different Zones in an Urban Area: Experience from Bangkok, Thailand

This case study shows how unbundling of service facilities can be used as an instrument for reducing the constraints of technologically complex large-scale urban sewerage projects while at the same time reducing the lumpiness of investments in urban sanitation, thereby removing barriers to access to urban sanitation services.

Bangkok is the capital of Thailand. It is a city of 10 million people. In 1968, the Bangkok Metropolitan Administration prepared a wastewater master plan for the entire metropolitan area. Though technically sound, the plan was found to be prohibitively expensive. Hence it was shelved for 16 years. In 1984 the master plan was revised under a Japanese (JICA) technical assistance program. Instead of a single centralized program, the inner city was divided into 10 sewerage zones, each with an independent collection and treatment system. The revised approach is an example of horizontal unbundling between different zones of an urban area. Sanitation investment in each of the ten zones is lower than the investment for a single project in the whole city. Each zone project is also technically simpler than the citywide project. These two impacts of unbundling have made it possible for the Bangkok Metropolitan Administration to implement various sanitation projects in different zones of the city, using a more affordable phased investment program.

Unbundling, coupled with a demand responsive approach, helps to remove major barriers to the expansion of coverage. Yet they still do not address the question about where the boundary between public and private infrastructure should be drawn. Secondly, expression of demand for improved sanitation is almost always based on perceived private benefits. These are much lower than the total benefits from citywide sanitation investments that are known to include externalities or benefits that are realized beyond the boundaries of the direct user of sanitation services. Experiences in Pakistan and Brazil show how these issues have been addressed.

Reaching the Urban Poor with Improved Sanitation: The Orangi Pilot Project Experience, Pakistan

This case study illustrates a tri-partite partnership between community, government, and an NGO in the provision of improved sanitation services to a low-income urban fringe community. It also illustrates a stepwise approach to urban sanitation in which the technology is adapted to the technical capacity and financial means of the beneficiary community. Its salient features include the use of such instruments as unbundling, community management with social intermediation, and internalizing the financing of community level infrastructure for sanitation.

Orangi is a large *katchi abadi* (or low-income informal settlement) in Karachi. It has a population of over one million. The Orangi Pilot Project (OPP) is a non-governmental organization; and sanitation is one of four projects the NGO is undertaking in Orangi.

After years of research and learning by doing, the OPP has developed a model of low-cost sanitation in which government, the community, and the NGO are treated as partners, and sanitation development takes place at two levels, an "**internal component**" level and an "**external component**" level. The internal component has three sequential sanitation sub-components, and the external component has two sub-components. They are:

Internal Component:

(a) An in-house sanitary latrine or toilet
(b) A lane sewer that collects sewage from houses along a lane in the community, and
(c) A neighborhood sewer that collect sewage from the lane sewers in a neighborhood

External Component

(d) Trunk sewer that collect sewage from neighborhood sewers
(e) A sewage treatment plant for treatment and final disposal of the sewage from the trunk sewerage system

It is noteworthy that sub-components (b) and (c) are together equivalent to what is known as a feeder sewerage system, and (d) and (e) may be collectively regarded as a trunk sewerage system.

The OPP sanitation project started with the NGO approaching the community and urging them to form lane organizations and to elect a lane manager. Once this was done, technical support was provided to the lane organization to construct a lane sewer to collect waste from their houses. It had been hoped that once this was done, the government would step in and provide a sewer network to collect the sewage from the lane sewers. This did not happen. So the lane managers from each neighborhood came together and pulled their human and financial resources to construct neighborhood-level sewers to collect the wastes from the lane sewers.

Initially, the sewage from the neighborhood sewers was discharged into nearby natural drains. But eventually, the Karachi Municipal Corporation and the District Municipal

Corporation agreed to finance the construction of a trunk sewer to collect the waste from the neighborhood sewer. This meant that there was a transitional period during which the untreated sewage from the Orangi community polluted the local environment. However, this was corrected when the public component of the sewerage system was installed. Without the price of the transitional environmental pollution, the community would not have gained access to basic sanitation, and the environmental pollution would have continued all the same through other means.

According to S. Akbaar Zaidi, the OPP model has been replicated in 59 settlements in 11 cities[29]. It has also been reported that the principles of the model are being applied to projects in Nepal, Central Asia, South Africa and Sri Lanka[30]

It is apparent that in the OPP model, there is vertical unbundling between the internal and the external sewer components. There is also a horizontal unbundling between parallel neighborhoods. A feature of the OPP model is that the normal boundary between private and public sector provision is extended from the household level to embrace the entire neighborhood. **What this means is that the neighborhood level sanitation infrastructure is a public facility that is privately and collectively owned by those in the neighborhood. Thus its ownership is private, but its use is public**. Under this arrangement, investment and operational responsibility within the neighborhood is now treated as internal development and is left to the community. The responsibility for investment, operation and maintenance beyond the neighborhood is treated as an external responsibility and is assigned to the public utility.

This definition of what is private and what is public has a number of attractive features. The entity that expresses demand to the public utility is not the household; it is the community. This reduces the number of respondents for demand assessment, thereby reducing the transactions cost for such assessments. Secondly, this definition makes it possible for the neighborhood to be used as the channel for expressing the "voice" of households, thereby giving the households bargaining powers. Thirdly, it expands the responsibility for financing of private infrastructure beyond the household level. Financing of infrastructure within the neighborhood is thus internalized.

Another feature of the approach is that it defines a clear set of target groups that would serve as partners, along with social intermediaries, in the internal development of sanitation projects. A similar definition of the private/public boundary has also been used in the Brasilia condominial model.

<u>Community-based Approach to Urban Sanitation: Experience from Brazil, using the Condominial Model</u>

This case study illustrates a shift from conventional sewerage technology to a technically equivalent lower-cost alternative known as the condominial system. The lower cost arises

[29] Zaidi, S.A. "Transforming Urban Settlements: The Orangi Pilot Project's Low-Cost Sanitation Model". City Press, Karachi, 2000

[30] Hasan, Arif. "Scaling up of the Orangi Pilot Project Programmes: Success, Failures and potential, Orangi Pilot Project-Research & Training Institute. Karachi. May 2000.

not from the use of lower technical standards, but rather from the use of sound technical standards based on current scientific and technical research, as well as current experience and innovation rather than a reliance on 100 years old concepts inherent in conventional sewerage. Another technical feature is unbundling. An integral part of it is community participation and joint ownership of community resources such as the sewerage system within a condominial block. This is analogous to ownership of neighborhood level sanitation infrastructure in the OPP model.

Brasilia is the capital of Brazil. It has a population of two million. The model being followed here is the latest version of the condominial sewerage system. Developed in the 1980s in the State of Rio Grande do Norte by Jose Carlos Melo for low-income communities, it has now become a standard solution for entire urban areas in Brazil, irrespective of residential income. The Water and Sewerage Company of Brasilia has been using this version of the condominial system for over ten eight years. Within the first eight years, 121,000 homes were linked to the condominial system, using over 1,300 km of condominial branches and over 660 km of public networks at average costs per person and per meter of sewer network of US27.00 and US16.00, respectively.

The basic planning unit in this model is the condominium. It is defined as the urban block, square, or its equivalent. The residents of a condominium define its boundaries. They do so through an informal community organization. It is this block or condominium that is connected to the public sewer. This is in contrast to conventional sewerage systems where connection to the public sewer is made directly to the individual house, a more costly approach.

The connection in the condominial system is made through the condominial branch sewer. Thus the network within the condominial block is treated as "private" infrastructure, and its investment costs are borne by the residents of the condominial block, just as is the case for the current OPP model in Pakistan. The infrastructure beyond the condominial branch sewer, up to the treatment plant, is treated as the public network or public infrastructure, and its investments are the responsibility of the public service provider. The cost of this system is, however, recovered from the sanitation charge.

The public network is divided into two parts, namely, a number of parallel micro-systems and a citywide system. The micro-systems are defined by sub-dividing or unbundling the urban area into small natural drainage basins, each with its own independent sanitation system, from collection to treatment and disposal. The micro-systems receive wastes from the condominial blocks and either purify them within the corresponding micro-drainage basin, or feed them into a citywide sanitation network. The micro-systems can therefore be operated as independent systems permanently or until such time that local or citywide development imperatives make it necessary that they should be connected to the citywide system. The citywide system is thus a network that receives flows from parallel independent micro-systems. In much the same way, there can be a regional system that receives wastes from a number of parallel independent citywide systems.

Community participation is an integral part of the condominial model, just as it is in the OPP model. In the condominial model, community participation in decision-making and in community level activities is viewed both as a right and as a duty of citizenship. It is

viewed as a way of helping to find solutions for the common interest within the block. Participation is also viewed as a process of negotiation among interested parties; it is a process aimed at reducing costs, mobilizing resources, and stimulating community actions including monitoring of jointly owned resources such as the condominial sewerage.

The Brasilia example illustrates both horizontal and vertical unbundling. The city sanitation system is subdivided horizontally into a number of parallel micro-systems. Each of these micro-systems is, in turn, subdivided horizontally into a number of parallel condominial blocks. In addition, the boundary for the private component of the sewerage system extends to cover the block, square or its equivalent. With this arrangement, sewage flows from households into a sewer network within the condominium area, and from there into a network of micro-systems, and eventually into a citywide system.

The Brasilia condominial model thus gives rise to a decentralized sanitation system with the possibility of interconnection into an integrated citywide network of clearly identifiable sub-systems. The model has a lot of flexibility; it is demand-responsive; and it lends itself to service differentiation within different condominial blocks and within different micro-systems. It has good prospects for overcoming most of the barriers to sustainable expansion of coverage in an urban area. It is being replicated in a number of countries in Latin America. Its use, together with the concepts in the OPP model, holds very good promise for achieving the MDG Target of improving access to basic sanitation in many urban areas in the world, large and small.

Tapping the Strengths of Spiritual Organizations for Community-Based Water and Sanitation Projects: The Example of the Ramakrishna Mission in the Medinipur Intensive Sanitation Project in West Bengal, India[31]

Religious organizations tend to have motivational and organizational skills that make them highly effective in social mobilization and in the changing of entrenched mindsets and habits. However, these strengths and attributes of spiritual organizations are not often appreciated or tapped for community-based water and sanitation programs. This case study illustrates the successful use of these skills in a rural sanitation project in the Medinipur district of West Bengal, India.

The Medinipur district rural sanitation project, also known as the Intensive Sanitation Project (ISP) was launched in 1990. It involves a partnership between UNICEF, state and district level governments, a religious NGO (the Ramakrishna Mission), and voluntary grassroots community level organizations. Though sponsored by UNICEF in collaboration with the state and district governments in West Bengal, it is implemented by the Ramakrishna Mission, a development oriented religious organization established in 1897 with its headquarters at the outskirts of Calcutta but heavily involved in social development and rehabilitation works in India and abroad.

[31] Parts of this case study are drawn directly from Chowdry, Kamla, "Ramakrishna Mission: Service and Salvation", September 26, 2002; Sengupta, Chandan, "Our challenge: Latrine for all." 27th WEDC Conference. UNICEF. Lusaka, Zambia, 2001, pages 203-206; UNICEF, "Sanitation-The Medinipur Story: Intensive Sanitation Project", West Bengal, India, Calcutta, India; and UNICEF, "Invest in Children, Advance Sustainable Development: In India, success in improving sanitation", *press release*.

The project is treated as a “people’s movement” designed to motivate people to move away from the age-old practice of open-air defecation. Paradoxically, the practice of open-air defecation in the area was based on the belief that defecation is unhygienic, and hence it is best done far away from the home. The only problem was that it was done in the open field from where it exposed people to outbreaks of cholera and other excreta-related diseases that occurred during rainy seasons. The project implementation strategy is thus driven by a need to change mindsets and habits towards not just in-house sanitation, but also a clean and hygienic living environment. Thus hygiene education was an integral part of the project.

A three-tier organizational structure is followed with the Ramakrishna Mission interacting both with state and district level governments at the top and also with cluster organizations, voluntary youth clubs and beneficiaries at the community level.

The organizational unit for the project implementation is the Community Development Block. There are 54 such community development blocks in the project area, each with a population of about 150,000. Within the community development blocks are voluntary youth clubs, over 1,000 in the project area. These are aggregated into a number of groups known as Cluster Organizations. There are eleven such cluster organizations in the project area.

The key instruments used in the project are community mobilization and the involvement of the local community in each stage of the program, especially in the delivery of sanitation messages, and human resources development. Community mobilization is done through trained motivators from the target communities. Its primary goal is to create awareness of the importance of health and hygienic practices. This is done through home visits, motivational camps, exhibitions, and through the use of special communication materials like flash cards, calendars, motivational kits, and audio-visual materials. Sanitation messages are conveyed through writings on walls, video and slide shows, and song squads. Training, especially the training of trainers, is given a high priority in the project. All categories of workers are given appropriate training related to their work.

In 1990, barely anyone in the villages of West Bengal's Medinipur district had household latrines. But just a decade later, roughly 80 percent of the families in Medinipur possess latrines - reducing exposure to communicable diseases of excretal origin and making Medinipur a role model for other parts of India.

Local involvement was also critical in the physical development of the latrines. Each component of the latrine was produced at production centers where local women were trained to manufacture the sanitary wares. A range of cheap and effective sanitation technologies such as single-pit latrines were made available. To help persuade reluctant villagers to switch to latrines, representatives of the production centers were enlisted to motivate and prepare households for such a change. These representatives received an incentive for every household they could motivate.

To date, approximately 1.2 million latrines have been delivered through the program throughout West Bengal and another 1.5 million have been built through other programs.

The impact of widespread latrine development has been accompanied by a remarkable reduction in cases and deaths associated with diarrheal diseases.

The Intensive Sanitation Project in Medinipur has proved to be a successful people's movement and has helped develop a sense of pride and belonging among the villagers.

Sulabh Sanitation Movement: Indian Communities Embrace Low-Cost Sanitation System[32]

This case study outlines a successful, low-cost sanitation approach developed and implemented by a non-governmental organization (NGO), Sulabh International. The program, named "Sulabh Shauchalaya" literally translated means "easy access to sanitation."

Sulabh International's approach to improved sanitation is two-fold: innovative modifications of an existing low cost technology, and equally innovative institutional and social programs, combining sanitation objectives with social reform. Sulabh popularised the use of the pour flush system in India, first as a domestic latrine and second as a public "pay-for-use" facility. Both have been very successful as a result of the institutional arrangements used by the organization.

The pour flush technology has many advantages. It is affordable, even by the economically weaker sections of society, as there are designs to suit different levels of income. Flushing requires only two litres of water, instead of the 10 litres needed by other flush toilets. It is never out of commission since, with the twin-pit option, one pit can always be used while the other one is being rested to allow its contents to be decomposed. The latrine can be built with locally available materials and is easy to maintain. It has a high potential for upgrading because, while it is a stand-alone, on-site unit, it can easily be connected to a sewer system if and when one is introduced in the area. The toilet is also culturally acceptable inasmuch as it is flushed by the water used for ablution, and its water seal makes it odourless and fly-free.

So far, more than 1,000,000 units have been constructed (or substituted for existing unhygienic latrines) in houses, and 5,500 have been installed in pay-and-use public toilets since the organization's beginnings in 1970. A key aspect of Sulabh's program is its inclusion of facilities for bathing and doing laundry. Their public toilets are staffed by an attendant 24 hours a day and supply powdered soap for hand washing, bathing, and laundry. Free services are offered to children, the disabled and the poor. This is very important for the homeless and the very poor who live under crammed conditions. More than 10 million people use the complexes every day. Some special facilities have also provided telephone services and primary healthcare. Another technological aspect of the program is the modification of the pour flush toilets for the production of biogas from human excreta for electricity generation, cooking and lighting. Sulabh's research and

[32] Source: Water Supply and Sanitation Collaborative Council's, "Vision 21: *Water for People*, A Shared Vision for Hygiene, Sanitation and Water Supply". Some information was also supplied by Task Force Co-chair, Albert Wright, based on his personal knowledge of the program.

development activities are geared to practical solutions for solid and liquid waste disposal, including recycling and resource recovery.

Despite the virtues of the technology itself, introduction of the Sulabh program might not have been so successful had not public awareness and community participation been considered critical aspects in the goal of improving sanitation. Among isolated populations, unlikely to feel responsible for wider environmental conditions, the Sulabh International Social Service Organization has undertaken educational efforts to help reverse this frame of mind and instil strong community awareness. The approach includes door-to-door campaigns by Sulabh volunteers and workers who persuade people to convert from bucket latrines. Once approval is gained, the organization takes responsibility to relieve the beneficiary of the bother of constructing the twin-pit, pour-flush toilet. Sulabh also educates people on use and maintenance of their new latrine and promises to fix construction defects and solve technical problem at no cost. After construction, service is provided and problems in use and maintenance are resolved by locally posted Sulabh workers.

The program includes technical training to local people to enable them to construct more latrines themselves. In rural areas, latrine-builders are also trained in such fields as hand pump repair, brick-laying, social forestry and biogas production. The organization estimates that 50,000 employment opportunities have been created through the Sulabh Shauchalaya program. Sulabh also helps local communities set up, operate and maintain the community toilet complexes.

Another key institutional aspect of Sulabh's program is that the NGO has, in some municipalities, taken over these complexes from the city officials for a contracted period of 30 years, relieving the municipal authorities from the task of operating and maintaining them. This has vastly improved the quality of facilities available to users. Often these comfort stations are the cleanest ones in town, even in major cities like Delhi, Bombay, Calcutta and Madras. Sulabh's experience shows that, where financial resources are constrained by central administrations, functions can effectively be delegated to grassroots and community level organizations.

Lessons from Case Studies

Several lessons can be distilled from the case studies described above and from several other case studies that have not been included. The key lessons stress the importance of the following:

- Political will and political leadership
- Sector policy reform underpinned by national level reform
- Shift in role of central government from implementation to facilitation
- Devolution of responsibility to local governments and communities accompanied by appropriate capacity building and funding
- Providing local governments and communities with "voice", choice and control, and ownership
- Tri-partite partnerships between government, community, and NGO/private sector

- Social intermediation through NGOs, especially for the sanitation and hygiene programs
- Capacity building to equip local governments and communities to perform their new responsibilities
- Ensuring that technical complexity, pace of change of responsibilities, and level of financial commitments match the capacity of local governments and communities
- Competition in service provision
- Unbundling of service provision to reduce lumpiness of investments and to reduce technical complexity of large projects
- Adoption of stepwise approach to service provision rather than an all-or-nothing approach
- Adoption of sector-wide approach to water and sanitation programs
- Focusing not household-centered sanitation, but rather on a living environment centered sanitation with the emphasis on a clean and safe living environment (both within houses and within the immediate neighborhood area)
- Internalizing financing of neighborhood/community level infrastructure for sanitation
- Easy access to micro credit or micro finance for the target community as well as for local private entrepreneurs
- Use of output-based approach to remuneration of consultants rather than the use of an input-based approach
- Tapping the strengths of grassroots organizations like spiritual and mission oriented groups

Additional Lessons from World Bank Experience[33]

The World Bank has prepared a note on lessons learned from Water in Rural Communities using a community-driven development (CDD) approach, as well as a case study of the successful example of Rural Water in China, where cost recovery mechanisms are built in the process. Both these documents have been posted on the Task Force intranet website – see Annex 2.

The Bank's experience highlights the following lessons:

- Using the community-driven approach to reach specific sector objectives requires a new approach to development that is different from the exclusive focus on government as provider. Achieving sustainability and scale in the community-driven approach requires new actions from donors and developing countries; otherwise it will not be sustainable.

- Allow the client - national to community level- to take the lead in establishing the reformed system. If there is no sense of ownership at the local level, sustainability is at risk.

[33] Contributed by Task Force Member Jamal Saghir

- Harmonize approaches to working with communities and local governments, so as not to duplicate efforts or create an administrative burden on the clients. Facilitate the country's leadership in setting fair rules of the game, and be flexible enough to work within reasonable rules.

- Build the capacity and understanding of client countries through training, study tours, and effective communication.

- Adapt program design to local conditions.

- Involve multiple stakeholders in co-managing programs and services. The high cost of scaling up suggests a continued sharing of costs; no one entity can shoulder the cost of providing water services to rural communities.

- Support an enabling policy environment for delivering water to the community. The enabling policy environment should support the institutional arrangements and resource management necessary for good investment, operation, and maintenance of water services. First, the legal environment should allow entities such as community groups, local NGOs, and local governments to be effectively involved in the management of local water sources. This may require popular participation, legal reform, decentralization reform, and the reform of intergovernmental fiscal systems, among other actions. Similarly, the private sector, both local and international, should have the freedom to operate in the country, which could require changes to the legal and regulatory environment affecting investment. Second, the policy and regulations governing water resources should reflect good management practices on user fees, tariffs, water rights, and so forth, and should provide guidance on attainable and maintainable technical standards to ensure quality services to all.

- Link water and its management up the resource chain and the chain of government. Commonly referred to as the rule of subsidiarity, both community-driven development and water professionals advocate managing resources such as water at the lowest appropriate level. Therefore, water user associations may manage and maintain a community water pump or a section of an irrigation system. Local government may maintain or collect fees for a group of communities or farm systems in its jurisdiction. Decentralized subnational government may monitor water usage and arbitrate water conflicts within its jurisdiction.

Conclusions and Recommendations for the Task Force

It has been the objective of this section to provide a bird's eye-view of some case studies and to distill some lessons from them. As noted earlier, this is best done by considering cases that reflect both failures and successes, although in this report only successful case studies have been presented.

There are numerous other case studies that are available or are being compiled. A notable example is the "Blue Gold" series being produced on African experience in water and sanitation by the World Bank's Water and Sanitation Program. Similar studies can be commissioned for Asia and Latin America. In addition, WSSCC will publish a "People's Report on Sanitation and Hygiene" just before the Global Sanitation and Hygiene Forum in Dakar in December 2003. The report will be based on a collection of further case studies, experiences from the field, the progress of nations towards the goals based on process indicators, and carrying the voice of people's experiences and constraints, if any. This will be a regular feature, to be issued once every three years until 2015.

PART V: FACTORS THAT FACILITATE OR CONSTRAIN THE ACHIEVEMENT OF THE WATER AND SANITATION TARGETS

This part of the report discusses the factors that have a key bearing on the ability of countries or communities to achieve the MDG targets. It is premised on the assumption that the main factors that facilitate or constrain the achievement of the MDG targets can be grouped into technical, governance[34], finance and crosscutting factors.

Technical Issues

There are a range of technical issues that impact on the achievement of the MDG Targets for water and sanitation and that therefore must be addressed by the Task Force. Some of the major issues that relate to water resources, sanitation, and the relationship of both with the environment are briefly discussed below.

Water Resources Supply

Although the amounts of water required for increasing access to drinking water 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. In some instances, sustainable access to water may be limited by the physical availability of water itself – where countries or communities have an inadequate water supply at a reasonable distance either in terms of quantity or quality (whether because of low rainfall, topography, hydrology and/or geography) or might face such constraints in the future, because of such factors as population increases or climate change. Sometimes, one or more particular challenges – such as arsenic contamination, salinity, guinea worm infestation, or groundwater depletion – need to be overcome to ensure a safe drinking water supply.

At a global level, the withdrawal of water supplies for domestic, industrial and livestock use is projected to increase by at least 50 percent by 2025. According to the International

[34] In this background paper, we use the term "governance" to denote the range of policy and institutional issues that play a part in water resources management, in keeping with the common use of the term among water specialists. For greater precision, it may be preferable in the future to use the term "policies and institutions".

Food Policy Research Institute and International Water Management Institute[35], "current trends show a water crisis could occur, leading to a breakdown in domestic water service for hundreds of millions of people—most significantly in the developing world—as well as devastating loss of wetlands, serious reductions in food production and skyrocketing food prices. If current trends worsen even moderately, farmers will drive down water tables by extracting increasing amounts of water to get sufficient supply for their crops, the institutes predict. The accelerated pumping could cause key aquifers to fail after 2010 in northern China, northern and northwestern India, West Asia and North Africa". Although the greatest impact of such a worsening of water trends would be in the area of food production and rural livelihoods (the IWMI/IFPRI report estimates a loss of food production equivalent to India's entire annual cereal crop or the combined annual harvest of sub-Saharan Africa, North Africa and West Asia), the availability of water for drinking and sanitation purposes could also be threatened in the most water stressed areas. Such availability could also be impacted by climate change and increased climate variability, especially since poor countries are the most vulnerable and have the least storage capacity to be able to overcome the effects of climate variability and change and natural disasters[36]. Strategies to prevent this crisis scenario – principally investment in infrastructure to increase the supply of water for irrigation, domestic and industrial purposes; conservation of water and improved efficiency of water use in existing systems through water management and policy reform; and improvement of crop productivity per unit of water and land – extend beyond the narrow water and sanitation sector and relate to the proper management of water resources as a whole, but will be a necessary component of any strategy to increase access to water and sanitation in areas in which the physical availability of water is a limiting factor.

The relative availability of water supplies will of course have a strong impact on the costs of increasing access to water and sanitation. Some estimates of the costs involved in meeting the water and sanitation targets appear to assume that the water resource itself is free, and need to be adjusted to include not only the costs of capture but the opportunity costs of the water itself. Many poor people without access to water supply and sanitation live in places where the shadow value of water is high, and the costs involved in increasing access to water and sanitation will be greater in water-stressed environments, reflecting water's scarcity value.

Thus any strategy to achieve the water and sanitation MDGs must take into account the costs of meeting the goal as differentiated by ecological setting. To this end, a solid analysis of water resource availability and technological options to address the particular challenges of water-stressed environments is needed. Since conditions are enormously context specific, it would be necessary to segment the overall problem by distinguishing among different ecological conditions—for example, coastal areas, alluvial river basins, drought-prone regions, small island states, etc – and assessing the technological options to increase access to drinking water supplies required in each case.

[35] "Global Water Outlook to 2025: Averting an Impending Crisis"; see also IFPRI/IWMI release, Oct. 16 2002.
[36] See ISDR publication "Living With Risk", and scoping paper prepared by the International Water and Climate Dialogue.

Strategies to achieve the water and sanitation MDGs must also take into account that additional water supplies can be generated through demand management and reductions of water wastage, primarily in cities, through such mechanisms as tariff structures. But the potential value of demand management approaches should take into account at least two potential caveats. First, since water wasted may be reused, in calculating the benefits of reducing wastage, the additional cost of providing access to people whose water supply currently depends on such leakages must be factored in. Second, higher levels of efficiency can sometimes lead to higher levels of risk. Experience in South Africa, for example, has led to some concern that when you have very high levels of water efficiency you are more vulnerable to drought and climate variability more generally.

Two final considerations. The first is that poorer countries and communities, especially those located in water stressed areas, must learn how to live with perennial water scarcity and design their development around it. Most cities in arid zones do not, for example, have limits on multistoried houses or on high water consuming flushes. The second point is that groundwater protection is a high priority in many water stressed areas. Over-exploitation of groundwater for agricultural purposes increases the cost of water supply for drinking purposes, which is further increased by the need for additional treatment.

Water Conservation, Water Services Management and Resource Development[37]

Although often seen principally as a challenge of capital investment, the provision of water supply and sanitation services is an ongoing business which has to be understood and managed as such if it is to achieve its goals.

The service provision chain begins with the service planning process since decisions made about the way in which services are provided has a substantial – often determining – influence on their success. These decisions determine the operating and maintenance requirements as well as the financial needs which in turn have a substantial impact on the relationship between service providers and users.

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. Poor management often leads to service interruptions and/or low pressure which is often aggravated by consumer responses which may include breaking into mains pipes or attaching pumps both of which prejudice other consumers and cause a vicious cycle of service degradation Unauthorised connections, an important part of this problem, are often made where consumers cannot afford the service provided or do not accept the conditions imposed.

(A similar set of issues impact on the quality of water supplied as well as on the functioning of sanitation systems. Poorly functioning water supply systems are vulnerable to contamination rendering the service unsafe. Poorly functioning sanitation systems often discharge untreated excreta and waste water into the community, negating one of their important objectives which is to isolate communities from such pollutants.)

[37] This section has been contributed by Task Force member Mike Muller.

In water supply, one consequence of losing management control is that demand for water increases which in turn requires either high investment in supply augmentation. In the absence of such investment, further system breakdown occurs due to the unreliability of the services.

The critical conclusion is that, in the absence of adequate planning and management, including planned maintenance, additional demands are made on water resources which require substantial new investments and may cause conflicts with other water users.

Further, the widely distributed nature of water supply systems is such that management control can only be achieved if there is a degree of social consensus about the way in which services are provided. This is necessary to ensure that management actions are supported and enforced by the community concerned.

Finally, the environmental impact of water services (in terms of demand for water resources as well as contamination of the environment) is thus a function of the quality of their planning and management and the extent to which social consensus is established around the framework for their management.

Sanitation: Service Provision Chains for Sanitation

Access to sanitation differs from access to water supply in terms of the nature and order of service provision chain that is used. In the case of urban water supply, the service provision chain starts with installation of infrastructure for the public good component of the service, followed by infrastructure for the private good component. The public good component starts with source development and treatment, followed by bulk transmission to a point within or just outside the community to be served. Finally, the last section of the public good component is installed in the form of a local distribution network with connections to individual consumers who install private internal plumbing systems to which the water service is connected for private use. Thus once the consumer receives the private connection and water supply, all the public components would already be in place; and their costs could normally be taken into account in pricing the service.

In traditional supply driven sewerage, the order of the service provision chain is similar to that used in water supply. Installation of infrastructure starts with the trunk sewerage system and sewage treatment facilities. The rest of the infrastructure is then installed, from the downstream end to the upstream end. Finally, households and customers are connected to the installed infrastructure system.

Due, however, to the lumpy investment required for conventional sewerage, many developing countries are unable to follow this traditional approach. Where an attempt has been made to follow this approach, experience has shown that the resulting sewerage systems have either been highly under-utilized (Accra, Ghana) or they have not been used at all (Bombay, India). In other cases, what is planned is never implemented due to its prohibitive cost. Hence an alternative service provision chain that follows a demand responsive approach is increasingly being advocated.

In the demand responsive approach, the traditional service provision chain is normally reversed. Ideally, the process should start with the installation of private sanitation infrastructure, followed by successive components of public infrastructure. For sewerage systems, these public good components are (i) feeder sewerage systems that collect sewage from private sources to (ii) trunk sewerage systems, which in turn discharge their wastes to (iii) sewage treatment plants for final treatment and disposal. The same basic approach is followed both for network systems and non-network systems of sanitation. Thus for on-site systems using septic tanks, the public good component may be the fleet of pit or septic tank emptying trucks representing the feeder system, with or without an intermediate transfer station. This is followed by facilities for treatment and disposal of the pit or septic tank materials removed by the fleet of emptying trucks.

Thus, in general, the service provision chain for sanitation starts with the private good component followed by two or three different levels of public good components in the service provision chain, leading to three or four steps in the "sanitation ladder".

One of the issues to be addressed by the Task Force on water and sanitation is the definition of the level of attainment in the sanitation ladder that should be considered to be defined as the minimum acceptable level of access.

From the private standpoint, the minimum level is access to private sanitation infrastructure that is hygienic and safe to use. In cities like Manila and Jakarta, this level has been reached for millions of people. However, it has not been followed by demand for access to the next level in the "sanitation ladder", namely, access to feeder systems of sewerage, followed by trunk sewerage and treatment plants. Hence septic tank effluents typically flow into open streams and drainage channels, leading to public nuisance and exposure to diseases of excretal origin. (The fact is that in contrast to the water supply system where even in urban areas the supply can be augmented through local spot sources, the sanitation problem does not have any low cost environmentally safe solution and so, focus on eco-sanitation needs to be considered.)

In many cities in Latin America, demand has been extended to the second and third rungs in the sanitation ladder (i.e. to feeder and trunk sewerage systems). However, few cities have sewage treatment plants. In general, where one or more of the public components of the service provision chain is/are missing, the result is environmental damage, including pollution of surface and ground water for beneficial uses such as water supply and recreational purposes.

Viewing the sanitation service provision chain as a sliding scale for sequential attainment of access to sanitation, one can argue that cities in Latin America are at a more advanced level on the sliding scale than those in Manila and Jakarta; and those in Jakarta and Manila are also more advanced than those who have reached the first rung in the ladder or the sliding scale.

To what extent should such a sliding scale of access to sanitation be accepted? For how long should the resulting environmental damage be deemed acceptable? Is there a case for treating this as an acceptable transitional solution to the creation of access to basic

sanitation? This is a policy issue with significant financial and environmental pollution implications as discussed briefly in the next section.

Water, Sanitation and the Environment

As is clear from previous parts of the paper, the achievement of an environmentally acceptable sanitation solution, particularly in urban/per-urban areas, is a key challenge. Indeed, many of the approaches outlined in the case studies section 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. This has serious implications in relation to other Millennium Development Goals – particularly the loss of environmental resources as well as the 2005 Integrated Water Resources Management target agreed upon at WSSD.

This means that countries may often have to make difficult choices. As shown by the Brazilian and Pakistani examples, it may be necessary to accept some increase in environmental pollution external to communities as a first step in improving their sanitation situation. This would reflect the (now successful) path followed by European and North American countries, which improved household sanitation at the expense of extreme pollution of rivers and waterways. Whether decades long periods of increased pollution would today be accepted as a viable strategy is debatable, and at the very least the costs and economic assumptions of such long-term strategies would have to be carefully considered. An alternative approach that is more in keeping with an integrated MDG strategy (i.e., one that seeks to achieve all the MDGs simultaneously) would be to cost out what is needed in order to ensure environmentally sustainable provision of access to sanitation services, and include that in the cost of meeting the target.

Countries also face difficult choices on the range of available sanitation technologies appropriate for very low-income settings, especially since the choice of technology and available capacity has a major impact on costs. There is substantial current debate between those emphasizing the need for significant sanitation investments and those advocating very low cost approaches. Similarly, there is much policy debate between those advocating dry sanitation and those who maintain that water-borne sanitation is the way to go. In these debates, it will be important to highlight the need for approaches that not only help achieve the water and sanitation targets but also other MDGs in the areas of environmental sustainability, hunger, poverty and health. In this context, systems of sanitation that manage the use of excreta in a systematic way for agricultural purposes need particular examination.

Governance Issues

As illustrated by the case studies described in Part IV, most of the globally relevant examples of success in meeting the water and sanitation targets have been accompanied by major institutional and policy changes, such as sector policy reform underpinned by national level reform; a shift in the role of central government from implementation to facilitation; and the devolution of responsibility to local governments and communities. There is thus widespread agreement that appropriate institutions and policies will play a central role in reaching the MDG targets on water and sanitation. Nevertheless, there is

still substantial debate on what kinds of institutions and policies countries will need to have in place to achieve the water and sanitation goals.

One important governance issue for the Task Force to consider relates to institutional capabilities and mechanisms for service delivery – i.e., capabilities to deliver water and sanitation services to the poor, and mechanisms to implement effective channels of delivery. Delivery capacity and domestic capacity to implement is clearly related to income and resources. In this context, particular attention needs to be paid to:

- *The role of Government in service delivery*. In South Africa, for example, experience has shown that the national government must have the ultimate responsibility of meeting the needs of the poor. Though governments need not engage directly in service delivery, they need to be ultimately responsible and to intervene if needed to force things to happen. As urged by the end-of-decade declaration in New Delhi, governments must play the role of leader, facilitator, promoter—but not necessarily provider.

- *The costs involved in alternative delivery channels.* Service delivery by government, private sector, NGOs, self-help groups, etc. can entail very different costs (and ultimately, communities need to decide which approach they would prefer).

- *Tapping untapped resources.* As illustrated by the case study of the Ramakrishna Mission in Part IV, people respond to spiritual signals and there are significant untapped resources that can be mobilized for this purpose.

- *Small-scale providers.* Small-scale independent service providers can be an important channel of meeting the demand, and ways to improve their performance in relation to the needs of the poor need to be a part of any strategy to increase access.

- *Broader actions.* Social mobilization and other actions to promote "voice" and a sense of ownership at community levels, capacity building and, most importantly, a set of incentives (such as the promotion of competition between service providers) are all conducive to improved service provision, as emphasized in the lessons learned from the case studies in Part IV. Improving service provision can also entail such actions as developing tri-partite partnerships among government, community, and NGO/private sector and capacity building to equip local governments and communities to perform their new responsibilities.

- *Strengthening utilities.* While community-based programs will definitely play an important role in meeting the water and sanitation targets, they will not solve all problems. Since solutions will also come through better performing formal utilities, strengthening and supporting these will be critical.

To examine the above issues in detail, the Task Force will gather information on service delivery practices in different countries, including the effectiveness and costs of different approaches.

In addition, and as will be discussed further in later sections of this report, a major constraint to the achievement of the MDGs on water and sanitation is the drop in demand for investments in the water and sanitation sector -- reflecting the fact that governments are not giving the sector the priority it deserves as a major MDG Target area. Simply put, the world will not meet the MDGs on water and sanitation if this drop in demand continues. Since this is ultimately a governance issue, it cannot be effectively tackled without improvements in overall governance.

Further discussion on the subject of institutions can be found in "It's Not Just the Water Department: Getting a Fix on Institutions", by Margaret Catley-Carlson and William J. Cosgrove (see Annex 2).

Financial Mechanisms[38]

Clearly, financing is a major constraint to the achievement of the MDG targets, and effective financing mechanisms are a key component of any strategy to achieve these targets. Financing issues and mechanisms will therefore be a central component of the Task Force's work.

As indicated elsewhere in this report, the Task Force's job is not only to clearly lay out what needs to be done to achieve the MDG targets, but as importantly to indicate how much it will cost and how these costs can be financed. Our global strategy will thus need to include a global financing scheme—one that articulates how much financing is needed and where such financing will come from, based on a blend of grant and market financing as well as contributions from users and outlining practical ways in which this blend can be accomplished. Doing so will require us to think realistically and expansively about what is needed to get the job done, and not be limited by any narrowness of vision. Importantly, the Task Force will not start with an a priori assumption that the water and sanitation targets in poor countries must be achieved on the basis of self-financing operating costs. It recognizes that poverty itself is a main barrier to the achievement of the targets, and some of the poorest countries may simply not be able to cover the operating costs, let alone the capital investment costs, involved in providing access to water and sanitation.

Of course, achieving the water and sanitation targets will entail costs (both capital and operating), and these costs will need to be paid for by someone -- consumers or taxpayers or both. "Closing the revenue circle" (to use the World Bank's terminology) must therefore be an intrinsic part of any strategy to achieve the targets (accompanied of course by efforts to reduce these costs as much as possible), entailing a combination of household, community, national and international sources. This in turn requires the Task

[38] This section includes material drawn from "Financing Water Supply and Sanitation", by Guido Schmidt-Traub, Millennium Project, October 2002.

Force to examine closely, on a country-by-country basis, how much financing can realistically be expected from each level[39].

At the household level, a pragmatic approach will be called for, taking into account that different groups of people have different capacities to pay and that "affordability" will be a pre-requisite to ensuring sustainable access to water and sanitation for the poor. To this end, the Task Force will review current best practices around the world on pricing and cost recovery (such as South Africa's policy of providing free a base amount of water coupled with full-cost pricing beyond that minimum amount). It is likely that some degree of cost recovery from even the poorest households, accompanied by full cost pricing for households with full direct water supply, will normally be advisable to ensure efficient use of scarce water supplies and hold governments and service providers accountable to users[40].

Financing from national sources – i.e., domestic government investments in water and sanitation -- currently account for 70-75% of all investments in the sector in developing countries[41]. The Task Force will need to investigate, on a case-by-case basis, which countries may be able to significantly increase their public spending[42]. It seems clear, though, that the projected doubling of investments levels cannot be funded through domestic sources alone. While middle-income countries like South Africa may be able to cover operating costs through cross-subsidization, low-income countries will likely find it impossible to finance investments required to meet the water and sanitation targets by 2015 and will need cross-subsidization at a global level.

Mixing of public and private finance for greater mobilization of resources is also a very attractive option. An example of another model of finance mobilization is the experiment of Sulabh International in India, where with support from government and local bodies, the NGO operates a public toilet system on a no-loss-and-no-profit basis and yet is able to pay back borrowed capital through a successful operation.

Financing from international sources will also need careful examination – both from private and public sources:

- While international private flows into the water and sanitation sector have been growing very fast during the 1990s, they only contribute between 7% and 11% of total investments and focus heavily on the provision of urban infrastructure to middle-income countries. For example, it has been estimated that between 1990-1997 less than 0.2% of all private sector investments in the water and sanitation

[39] Task Force member Gouri Ghosh has noted that the water and sanitation financing model has to be tailored to a country's capacity and GDP – it cannot be designed in isolation, but must take into consideration the market, supply capacity and affordability.

[40] Since it is costly to provide absolutely safe water through a public water supply system, in the future more and more treatment at the household level and emphasis on safer storage at the household level will be a priority. For example, in Bangladesh affordable safe water will be available only through a household water treatment system.

[41] "Financing Water Supply and Sanitation", by Guido Schmidt-Traub, Millennium Project, October 2002.

[42] The work on financing strategies for healthcare in developing countries, which was carried out by the Commission on Macroeconomics and Health (WHO 2001), provides a good blueprint for such an analysis.

sector of developing countries went to Sub-Saharan Africa.[43] This analysis needs to be updated and further refined, but it does seem improbable that the international private sector will provide the investment necessary to bridge the funding gap for water and sanitation facilities in poor countries.

- Since significant increases in funding will be necessary to meet the targets, and since neither domestic governments, nor the domestic or international private sector will be able to provide the necessary investments, this leaves the international donor community as the last source of funding for meeting the water and sanitation targets by 2015. However, the channeling of public development assistance finance to the water sector is currently very unsatisfactory not only in quantity but also in quality. Frequently, project-by-project rather than program approaches are employed, leading to fragmented policies that run contrary to the generally recognized need for integrated approaches. Perhaps more importantly, current patterns of development assistance are often not directly focused on water and sanitation for the poorest, as illustrated by the fact that funding for water and sanitation schemes in rural and peri-urban areas is probably less than 20% of total funding[44].

- Looking at the world water and sanitation market, another dimension appears: the market attractiveness of countries to investors. Market attractiveness in relation to water and sanitation is a subjective measure encapsulating such factors as GDP per capita, political and economic stability, resource availability, etc. On this basis the world market seems to be divided into a number of segments ranging from "most attractive" to "least attractive". In general the most accomplished operators have their roots in the "most attractive" segment of the market. Global expansion by the international operators from this segment has to date to a greater extent been into the adjacent "more attractive" segment (where the risks are acceptable) usually via the higher population centers. The challenge is to broaden the market and the players (local and international).[45]

The World Bank has forwarded a brief report entitled "Water and Sanitation and Private Investment", which has been posted on the project website (see Annex 2), and which provides some information from the Bank data base on international private flows.

Given all of the above, achieving the water and sanitation MDGs will inevitably require improved models for development financing. One immediate job for the Task Force will be to gather more information on alternative models for development financing in the water sector. In this context two case studies are worth considering. One is the Ananthapur water project in India, which has been recently submitted to the Water Action Contest of the 3rd World Water Forum as an innovative example of an alternative financing mechanism using the resources of civil society in a large project (US$69

[43] Calculated based on Silva et al. (1998) as quoted in Annamraju et al. (2001)
[44] Given the lack of solid information in this area, the Task Force will conduct an examination of where current resources are going in the area of water and sanitation, in order to make the case for the allocation of resources to where they are most needed.
[45] Contributed by Task Force member Jamal Saghir

million), covering nearly 1 million rural and urban poor, with funds mobilized without any government assistance and completed within a record time of 18 months[46]. Another is the World Bank assisted China Rural Water Supply and Sanitation Program, which started in 1985 and which, building on a history of user-financing in rural water supply in China, developed a very effective cost recovery policy where the users finance up to 75% of the capital investment as well as the full operation and maintenance cost. Full information on both initiatives is available on the Task Force's intranet website (see Annex 2)[47].

Another job for the Task Force will be to examine a range of current and potential financial mechanisms from micro-credit to large-scale financing (with special emphasis on the less explored middle range of financial mechanisms for community water projects involving such issues as how to unbundle international credit for community efforts and how to create intermediary organizations that can provide credit in smaller amounts), while at the same time encouraging more experimentation and innovation on such issues. A third will be to document more thoroughly the extent to which successful programs to increase access to water and sanitation by the poor are constrained by funds, and the way in which lack of financing impedes efforts to support projects that work or to scale up solid approaches that have proved viable at the pilot level. And a fourth will be to explore the reasons for the current low levels of demand for international development financing for water supply and sanitation – why water supply and sanitation investments are not included, for example, in most Poverty Reduction Strategy Plans (PRSPs) -- and how water supply and sanitation needs can be more connected to donor-supported processes.

A final word is needed to the issue of the private sector's role in water and sanitation. Much has been written on this often-contentious topic, and there is no need to include a comprehensive analysis in this paper. Nevertheless, three points that bear on the Task Force's work might be highlighted here. The first is that, while the international private sector is unlikely to be able to provide the investment necessary to bridge the funding gap for water and sanitation facilities in poor countries, the potential role of the private sector as a whole (from small-scale entrepreneurs to large private sector water companies) in meeting the water and sanitation targets could be very significant. The second is that, in developing a strategy for dealing with this complex area, a pragmatic approach is called for – one that focuses private sector efforts in areas where they have a clear comparative advantage, and combines their skills with those of government and civil society through tri-sector partnerships and other mechanisms. And the third is simply that, without the involvement and partnership with local private entrepreneurs, NO water and sanitation system can be developed. It is therefore important not to confuse PRIVATE SECTOR and PRIVATIZATION on one hand with the role of private finance and entrepreneurial involvement at the local level.

[46] ADB and UNHABITAT have carried out a joint evaluation of the project which is available on ADB website.

[47] Task Force member Bill Cosgrove has noted that Tunisia also offers good experience in cost recovery. SONEDE, Tunisia' national water agency, has been meeting all costs, including investment costs, since the 1970s with a tariff structure that makes it possible for the poor to pay.

In this context, some discussion is also needed on the types of management and financing mechanisms that are appropriate for different kinds of situations. Within a country, the market can be segmented into population bands ranging from (mega)-cities down to towns, and further down to small rural villages. Thus, each of the population size segments requires specific management and financing mechanisms, and those differences need to be highlighted. Some examples:

- Formal private sector participation has been limited to the larger population centers. It is unrealistic to believe that a small number of international operators will or can serve all population bands. Thus the need to help in building local capabilities.
- Town water and sanitation service provision poses its own financial challenges. While the largest water departments may be viable entities in their own right, those at the smaller end of the spectrum might not. They lack the technical, financial and commercial resources to be an effective service provider. There is a need for innovation in management arrangements, for appropriate professional support to local operators, and to improve financial viability by aggregating demand.
- At the lower end of the "size scale ", i.e. in rural areas, the role of household financing and micro-financing increases. Thus, approaches to financing improved and expanded rural water supply should include micro-finance and household subsidies.[48]

Crosscutting factors

Good governance, availability of finance, and availability of appropriate technology are necessary but not sufficient requirements of accelerated progress towards the MGD targets. They need to be underpinned by measures to address a number of crosscutting constraints, including:

- Political will. Advocacy, awareness raising and long-term education need to play an important role in building political will and a new water ethic.
- Gender issues – as illustrated for example by the relationship between lack of access to sanitation and violence against women, girls' education, with its strong impacts on human dignity and privacy.
- Peace, security and stability. Undoubtedly, the impact of conflict on water and sanitation can be significant. Countries that have experienced many years of internal conflict, for example, face great difficulties in increasing access to water and sanitation, a situation exacerbated by the need to provide basic services to internally displaced people.
- Education. Education is a vital ingredient of any effort to increase access to water and sanitation. Especially important is the role of hygiene education, as a package that accompanies the creation of access.

[48] Contributed by Task Force member Jamal Saghir

PART VI: A FRAMEWORK FOR AN OVERALL STRATEGY TO ACHIEVE THE WATER AND SANITATION TARGET

This part focuses on a key dimension of the Task Force's work – the development of a framework for an overall strategy to achieve the water and sanitation targets of the Millennium Development Goals. It will be followed immediately in Part VI by an initial set of preliminary proposals, based on this framework, that the Task Force is putting forward to make a significant impact on the targets.

What we mean by an overall strategy

Before putting forward a framework for an overall strategy to achieve the MDG Targets for Water Supply and Sanitation, it is important to be clear what we mean, and do not mean, by an "overall strategy".

In a nutshell, and in keeping with the overall approach of the Millennium Project, what we are looking for is a plan that would (1) identify priority interventions, (2) outline strategies to achieve such priority interventions, (3) lay out the organizational means required for implementation, and (4) provide a clear estimate of the amount and nature of the financing required and from where it might be secured. Our overall strategy will need to reflect a multi-pronged approach to attainment of the MDGs, including a global strategy that serves as a broad framework for regional, national and sub-national strategies, and national and sub-national strategies driven by local needs but reinforced by a strategic global framework. Ideally, the global, regional and national level strategies should be developed in parallel and in an iterative and flexible way.

The overall strategy will thus entail action at all levels, from the household level to the international level. In particular, it will include community and local government approaches within a broad national framework for each country to set the stage for local action by both communities and households, set goals and priorities, establish programs, and provide monitoring and evaluation; a regional framework for each major region, bringing together countries that share common concerns and, in some cases, institutional traditions; and an international framework(s) for decision-making and for financing, including donors and the supporting role of international agencies. Importantly, the overall strategy would <u>not</u> be viewed as a centrally dictated master plan, but rather a strategy with a cohesive overarching vision in which action at the various levels interact and reinforce one another.

Following "Jim Grant's Ten Commandments" as outlined by Kul Gautam of UNICEF in 1997 (see separate set of background documentation), the intent would be to provide a goal-driven strategy that would break down the overall goal into time-bound, doable actions, demystify the approaches and technologies needed for implementation, generate and sustain political commitment, and mobilize a "grand alliance" of all actors, including the United Nations system, towards the attainment of the water and sanitation targets.

Other characteristics of the overall strategy will be:

- As noted in Part II, the MDG target on water and sanitation has four distinct though inter-related components, with distinct characteristics (for example, private sector participation in water supply is much more relevant to the urban water supply component than the rural one). Each of these four components of the overall target will thus require a different approach.

- The strategy will need to specify who are the key implementing partners at all levels, from sub-national to national, regional and global. At the global level, the strategy will need to examine current institutional arrangements both within and beyond the UN system and make recommendations for changes if needed.

- The strategy will need to lay out a global financing scheme—one that articulates how much financing is needed and where it will come from, based on a blend of grant and market financing as a way to move forward and outlining practical ways in which this blend can be accomplished.

- While some measures will be illuminated by reference to case studies, to the extent possible the elements of the overall strategy will be based on sound analysis rather than specific cases that may or may not be generalized to other contexts. This implies that the strategy will need to embrace not just one approach, but a variety of approaches tailored to specific scenarios and constraints to meeting water and sanitation targets.

- The overall strategy will include not only actions specific to the water and sanitation sector. It will also address a number of crosscutting issues that are likely to be necessary components of strategies to achieve all the MDGs – such as gender and the global economic environment.

- The overall strategy will need to include not only direct actions in support of the target, but also a strategy for investments in new research and development, including the institutions and policies needed to foster the adoption of new technologies and to accelerate investments in R&D.

- The overall strategy will also need to include an overall natural resource regulation governance and management policy linked with water and sanitation

What we have in mind, therefore, is something that goes substantially beyond the many important frameworks for action that have been produced over the years (see Box 1). However, these plans will constitute crucially important building blocks for the preparation of the various components of the overall strategy. Likewise, the numerous recommendations for action that have emerged from such major international conferences as the one in Bonn, Germany, in December 2001 in preparation for WSSD will provide vital ingredients for the work of the Task Force.

A Framework for an Overall Strategy

The various elements of a framework for an overall strategy to meet target #10 are indicated in Figure 2 (at the end of the paper). Such a framework should provide an initial basis for the Task Force's work, but will need to be flexible and allow the specific characteristics of the overall strategy to be adjusted during the course of the Task Force's work. The framework is based on the components of the MDG Target on water and sanitation outlined in Part II.

National and Sub-National Strategies

As indicated earlier and as depicted in Figure 2, a key component of an overall strategy to meet the water and sanitation targets will be nationally prepared and owned strategies for action at national and sub-national levels. All countries should be encouraged to develop such strategies, especially those at greatest risk of not meeting the targets. In developing such strategies, countries will need to take into account the factors that facilitate or constrain the achievement of the targets discussed in Part IV.

Since the problems impeding sustainable access to water and sanitation differ across ecological zones, social/institutional conditions, and levels of economic development, each national and sub national strategy will need to be context specific. This requires a framework to segment the problem – to divide the world's water and sanitation access problem into distinct categories, to differentiate between those problems that are generic in nature and those that depend primarily on the specific economic, social/institutional and environmental contexts, and to enable the development of strategies that are context-specific.

An approach along these lines requires the development of a simple typology of the context surrounding particular groups of unserved populations. Our proposed typology is based on the three broad factors that facilitate or constrain the achievement of the targets identified in Part IV -- financial factors, governance factors (policies and institutional capacities), and technical factors (including the availability of water resources and technologies suited to the characteristics of the physical environment).

Since financial and governance factors vary significantly from country to country, the approach would recognize that national strategies fall into four very basic categories as illustrated in Figure 2, depending on whether a country has the domestic resources to cover the costs of meeting the MDG water and sanitation targets (or more specifically, whether it has the domestic resources to fund the cross-subsidization needed to increase access in ways that are affordable to the poor), and whether it has the policies, institutions and capacities needed to enable the targets to be met. Countries in the second row in Figure 2 would include most of the LDCs and therefore most of the countries most likely to face great difficulties in achieving the MDG target; here, strategies would need to focus on financing to end the poverty traps that limit the ability of the poorest countries to make a major dent in the water and sanitation targets. In those cases where policies, institutions and capacities are also limiting, strategies would also need to focus on developing and putting in place these policies and institutional capacities.

Figure 2. Four Categories of National Strategies

	Policies, institutions and capacities are not a limiting factor	Policies, institutions and capacities are a limiting factor
Domestic financing is not a limiting factor		*Focus on policies and institutional capacities*
Domestic financing is a limiting factor	*Focus on financing*	*Focus on both financing and policies and institutional capacities*

Clearly, in most countries simultaneous action will be needed to address both institutional and financial constraints. This suggests a two-pronged approach: (1) ensuring access to financial support by countries that have the policies and institutional mechanisms in place for actions at national and sub-national levels towards the water and sanitation targets in the MDGs; and (2) ensuring access to financial and technical assistance by those countries that, with appropriate support, would be able to develop and put in place the policies and institutional mechanisms required for effective action towards the water and sanitation MDGs.

Since technical factors (including the availability of water resources and technologies suited to the characteristics of the physical environment) as well as institutional arrangements vary significantly within countries, the particular strategy to be adopted will need to be defined at sub-national levels. For example, in those areas where water resources are scarce, strategies would need also to embrace integrated water resource management approaches. An important implication of this approach is that it would permit what might be viewed as a "sliding scale" – the tailoring of technologies and levels of service to the level of financing and institutional capacity prevailing in each case. Of course, in all cases, actions that address the cross-cutting factors identified in Part IV will necessarily have to come in to play.

Importantly, sub-national strategies need to include community level strategies for capacity building and institutional support to set the stage for local action by both communities and households, embracing all actors, including service providers in both the public and private sectors. Such action will both constitute the building blocks for, and be reinforced by, action at the national, regional and international levels.

In all cases, the strategy of putting people in the center of planning, implementation and operation is a must. (The WASH partnership is one such movement of social mobilization that is building upon the will and involvement of people based on a knowledge and awareness campaign.) Communication will not only mobilize additional resources but also will make the achievement of the goal sustainable.

<u>Regional and International Strategies</u>

There are significant differences among regions in the nature of the water and sanitation challenge. In Asia, for example, sanitation coverage is by far the lowest of any world regions (see Part III). Latin America, which has relatively high service levels, has the greatest disparity between urban and rural areas. A regional strategy for each major

region, which brings together countries that share common concerns and, in some cases, institutional traditions, should thus be an important element of the overall strategy. There are significant efforts underway to prepare regional strategies for the achievements of the MDGs on water and sanitation on which the Task Force's work could both build and contribute to – such as those of the African Ministers Council on Water (AMCOW), the Africa Water Task Force, and WSSCC and its partners, who are organizing a series of regional workshops on sanitation and hygiene. .

The international component of the proposed strategy to achieve the water target would be developed using the framework of the overall Millennium Project MDG strategy, which calls for investments in specific MDG goals (e.g., increased investments in health, education, sanitation, etc.) at a global scale, with a focus on donor funding on the poorest of the poor; policy reform and financing to end the poverty traps facing the poorest countries; and investments in new science and technology related to the water and sanitation MDGs.

In the water and sanitation area, it is envisaged that the key international components of the overall strategy would be:

- An international framework(s) for decision-making. The framework would include the supporting role of international agencies, particularly the UN, and other mechanisms at global, regional and country levels for capacity building and technical assistance.
- A framework for financing from international sources
- A strategy for investments in new R&D, including the institutions and policies needed to foster the adoption of new technologies and to accelerate investments in R&D.

Strategies in Sectors Other than Water

Investments in other sectors such as health and education are crucial to the achievement of the water and sanitation targets. Progress in eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowering women and ensuring environmental sustainability will all help in advancing progress towards the MDG water and sanitation targets. For this reason, the analyses of all the other Millennium Project Task Forces will have a strong bearing on the work of the Water and Sanitation Task Force.

In particular, economic growth and poverty reduction play a strong role in increasing access to basic services, including water supply and sanitation. There are therefore complementarities and trade-offs between investing in water development as a whole to promote overall economic growth as opposed to investing specifically in water supply and sanitation services. The experience of countries such as South Korea demonstrate that significant increases in water supply and sanitation can follow significant increases in GNP. In addition, of course, there needs to be a strong emphasis on public sector reform, especially decentralization to the local government level and reform in the financing sector.

Discussion of these issues with other Task Forces and within the project as a whole will therefore be imperative. The aim should be to develop a common language and framework and identify obstacles to overcome that would be common to several MD goals and targets, thus drawing conclusions that would be common to several Task Forces and useful to the project as a whole.

PART VII: PRELIMINARY PROPOSALS FOR IMPLEMENTATION

As the Task Force begins its work, it has put together a select number of immediate action proposals that it believes can significantly accelerate progress towards the achievement of the water and sanitation MDGs. This part of the background paper describes these proposals. We begin by outlining why we think it is desirable to issue these preliminary proposals and the rationale that guides their formulation.

Why Preliminary Proposals are needed

As illustrated by the case studies in Part III, there is much that is already underway to achieve the MDG water and sanitation targets. Indeed, there are thousands of actions already underway around the world[49] – by governments, communities of different sizes, international agencies, non-governmental organization, community-based organizations, the private sector, the research community – that are helping the world to make progress, in large ways and small, towards the achievement of the targets.

Undoubtedly, these experiences are helping to develop a body of knowledge on what works and what doesn't, and helping to pinpoint additional actions that would help accelerate progress towards the realization of the water and sanitation MDGs. So it would be foolish and irresponsible of the Task Force to wait until 2005 before making any recommendations on specific additional actions that are needed to make more rapid progress towards the achievement of the targets – the need to do so is simply too urgent to permit us the luxury of waiting for the detailed analyses that the Task Force intends to carry out as part of its work.

In issuing preliminary action proposals, the Task Force recognizes that putting forward potentially provocative ideas at a very early stage in a highly charged area is inherently risky. Our sense, however, is that formulating deliberately bold and far-reaching proposals at this early stage is needed to stimulate debate on potential ways forward. Of course, none of the ideas and proposals outlined in this section should be interpreted in any way as the final and unanimous views of the Task Force. On the contrary, they must be viewed as ideas that have not yet been fully discussed, that have elicited varying reactions among Task Force members, and that will need extensive debate, review, modification and improvement throughout the course of the three-year project.

[49] See in particular the Water Actions Report being prepared by the World Water Council for the 3rd World Water Forum.

Rationale for Proposals

In putting forward some preliminary ideas and proposals, the Task Force has agreed that it should do so in a way that reflects the particular perspective of the Millennium Project as a whole and the Water and Sanitation Task Force in particular. We hope therefore that our proposals will have a distinct flavor – one that bears the stamp of our single-minded focus on the MDGs and makes full use of our ability to put forward proposals that take into account that the project as a whole is viewing the MDGs in their totality and developing an overall Millennium Development Strategy

In keeping with this philosophy, our proposals are based on the bold premise that the basis for future action at the country level will be what might be called a National Strategy for Meeting the MDGs – one that would not replicate but be an expanded version of the current Poverty Reduction Strategy Papers (PRSPs) for all countries now engaged in the PRSP process. Such a strategy would underpin the future efforts of all development partners, and would become the basis for sector-wide bilateral as well as multilateral financing. In the water and sanitation sector, this approach would represent a significant step forward. In particular, it would address the current widespread failure of many if not most PRSPs to incorporate actions and investments in water and sanitation.

The Task Force recognizes the large number of new initiatives related to water resources that have recently been launched in around the World Summit on Sustainable Development and the important role they will play in achieving the MDG targets on water and sanitation. Rather than attempting to endorse any one of these initiatives, the Task Force will endeavor to put forward ideas and proposals that complement and reinforce them. (It has also begun systematizing information on water and sanitation programs now in place at global, regional, national and sub-national levels, so that there may be a better understanding of what is currently happening, who are the key players, and who is doing what -- see Annex 2).

Specific Water and Sanitation Proposals

Based on the above considerations, the immediate action proposals that the Task Force believes can significantly advance progress towards the water and sanitation MDGs are outlined below. They include proposals for action primarily at the national and sub-national levels, proposals for action primarily at the regional and global level, and proposals for technological innovation at all levels. In all cases, a key cross cutting objective will be to ensure that progress is monitored in a manner that measures household access to services not just the proxy of infrastructure provision.

<u>Proposals for Action Principally at the National and Sub-National Level</u>

Establishing targets and preparing action plans: Few countries have established national and sub-national targets consistent with the MDGs for water and sanitation or prepared action programs to achieve such targets. Countries should therefore embark on an immediate campaign to establish their own targets for water and sanitation at national and sub-national levels, and to prepare solid and time-bound action strategies and action plans

to meet these targets – which could then become an intrinsic part of the National Strategies for Meeting the MDGs referred to earlier. An international campaign should also be launched immediately to increase awareness of the MDGs targets for water and sanitation at regional and national levels, and to encourage and support countries to prepare action plans to meet clearly established national and sub-national targets.

Developing integrated water resource management and efficiency plans. As noted elsewhere in this report, significantly increased withdrawals of water supplies for domestic, industrial and livestock use as well as decreases in the quality of these water sources could threaten the achievement of the water and sanitation targets on a sustainable basis. For this reason, all countries should take immediate steps to implement the new time-bound target established by WSSD -- to "develop integrated water resource management and efficiency plans by 2005, with support to developing countries, through action at all levels."

Developing and field-testing innovative country-level mechanisms for financing water supply and sanitation for the poor. There is a significant lack of innovative mechanisms for financing water supply and sanitation for the poor. One possible mechanism would draw on South Africa's approach to safe water supply and basic sanitation services and provide financial support to the following categories of consumers of water supply and sanitation services: low-income households (to provide discounted water and sanitation services to families with qualifying low-incomes in line with the MDGs); service providers in high-cost areas (to provide financial assistance to enterprises that provide water sanitation services in areas where the cost of providing services is high); schools (to help ensure that schools in developing countries have access to safe water supply and basic sanitation services); and healthcare centers (to ensure that health centers have access to safe water supply and basic sanitations services conducive to good health care). Funding sources could include targeted government budgets, contributions from enterprises that operate in areas where the cost of providing services is relatively low, international pooled trust funds for water, and special levies or charitable contributions.

Proposals for Action Principally at the Regional and International Level

The Task Force has four initial proposals for action at the regional and international level. On the basis of the discussion of financing factors in Part IV, these initial proposals have a strong financial flavor. Key considerations include the proliferation of financial mechanisms and the lack of coordination among them including differences in auditing and reporting requirements; the fact that several successful programs in developing countries are constrained by funds; and the recognition that supporting projects that work—scaling up solid workable projects—could be a very effective strategy to accelerate the achievement of the MDG targets.

Developing regional strategies: Participatory approaches to the development of regional strategies for the MDG targets for water and sanitation are urgently needed. Although as indicated earlier the Task Force will not attempt at this early stage to endorse any one of the many ongoing specific initiative, it may be desirable for the Task Force to consider collaborating with one or two regional initiatives aimed at developing regional strategies for achieving the MDG targets for water and sanitation so that these could serve as

possible models to be followed in other regions. One possible region where this is being considered is in the Africa Region, where plans are advanced for a participatory approach to the development of an Africa regional strategy for the MDGs for water and sanitation. Key external support agencies will be working in this initiative with such African entities as NEPAD, the African Ministerial Council on Water (AMCOW), the African Water Task Force, as well as representatives of civil society and other stakeholders in water in Africa.

Enhancing financial and technical support: As indicated in the previous section, in most countries simultaneous action is needed to address technical, institutional and financial constraints. The international community should urgently put in place mechanisms to support countries using a two-pronged approach. Such an approach would focus on (1) providing financial support to countries that meet agreed-upon criteria for international support and have the policies and institutional mechanisms in place for actions at national and sub-national levels towards the water and sanitation targets in the MDGs; and (2) providing financial and technical assistance to those countries that do not yet meet the criteria for international support but that, with appropriate support to meet such criteria, would be able to develop and put in place the policies and institutional mechanisms required for effective action towards the water and sanitation MDGs. Although the second prong implies moving ahead with investments while at the same time making institutional changes, and therefore might be viewed as risky, in many cases it may be the only viable approach to meet the targets by the year 2015.

Improving the quantity and quality of external assistance: There is no doubt that achieving the goals of improved access to safe water and sanitation by 2015 will require increased investments at all levels, from local to global. In particular, the best evidence to date suggests that additional donor assistance per year will be needed, on the order of two to three times current levels of donor support. Therefore, official development assistance for water and sanitation should double or triple in the near future to achieve the MDG targets by the year 2015. Importantly, such development assistance should be based on a program approach, target the poor, and employ innovative financing mechanisms. Specifically, we would propose a three fold approach to focus development assistance that is (1) based on a program approach, rather than the current project by project approach, (2) allocates resources to target the poor (note the Task Force examination referred to earlier of where current resources are going in the area of water and sanitation), and (3) advances improved models for sustainable development financing. Importantly, the Task Force plans to gather more information on alternative models for development financing in the water sector, on the basis of which these proposals can be refined.

Developing innovative global funding mechanisms: To provide financial and technical support for the achievement of the water and sanitation MDGs, a new multilateral donor mechanism, perhaps a Global Water and Sanitation Facility (or Foundation), should be launched immediately to support national or community level plans of action in low-income countries. The mechanism might be designed along the lines of successful ongoing programs, such as the small grants program of the Global Environment Facility (GEF) or the Global Fund to Fight AIDS, TB, and Malaria, and embody mechanisms for decentralized and participatory decision making. To access funding from this facility or

foundation, countries and communities would be invited to put forward action proposals to achieve their MDGs in water and sanitation that meet agreed criteria. Such an initiative would primarily build on existing funding mechanisms to support initial actions -- by local communities, local/national/ regional authorities, non-governmental agencies, regional/global networks and UN agencies -- aimed at achieving the water MDGs. The funding structure would support catalytic, crosscutting initiatives in those countries and regions in which the lack of financial resources is the limiting constraint and/or where additional resources would provide incentives for innovation.

While far reaching, this proposal clearly needs careful analysis and scrutiny. One fundamental issue raised by Task Force members is whether a global fund is an appropriate mechanism to reach small non-governmental and community based groups working at the ground level and other key local level actors in the achievement of the MDGs. Since a global fund might end up being managed in a top down and centralized way, and consume more overhead that could be better used in reaching the poor, there may be alternative financing models that might be more effective in meeting the financial constraints inherent in achieving the MDGs. A second issue is whether earmarking funds for a specific purpose such as water and sanitation is the way to make progress towards the MDGs as a whole. Establishing a global fund limited to the water and sanitation sector could raise the issue of earmarking funds to any sub sector and may result in distortions in national and local decision making processes.

One option would be to start with an interim funding mechanism to support initial actions to achieve the Millennium Development Goals in the area of water and sanitation. To initiate this process during 2003, willing multilateral and bilateral donors (and perhaps private foundations) should agree to pool their resources in support of the testing of such an approach through a comprehensive multi-year program for at least two low-income countries. On the basis of the experience in these two countries, and the work of the Task Force over the course of the three-year project, the proposed interim Funding Structure could evolve into a global mechanism to provide the additional finance needed to implement the strategies required to meet the water targets.

Proposals for technological innovation

As indicated earlier, in the water and sanitation sector there are clearly proven strategies and interventions that can make the pivotal difference at country scale. Nevertheless, technological advances (by which we mean advances in the physical, biological and chemical means to provide access to water and sanitation) -- as well as innovation in institutional and financial mechanisms – are needed to improve these interventions still further. Two areas of innovation are particularly urgent, as outlined below. Creating a new “international strategy forum” for technological innovation in water and sanitation might provide the institutional mechanism for exploring how to move forward in each of these areas.

Innovation in drainage and solid waste disposal. In the sanitation sector, the biggest unsolved problem is how to improve access to basic sanitation, defined here to embrace services and facilities for addressing excreta and sullage disposal at household and

neighborhood levels. However, from the perspectives of municipal and local governments, the greater challenge is how to address the drainage and solid waste disposal problems they face. Hence, there is a reluctance to invest in basic sanitation alone without attention to the broader range of the interrelated services of drainage and solid waste problems. Yet, most municipalities and local governments are financially constrained from simultaneous implementation of programs in basic sanitation, drainage and solid waste disposal. There is, therefore, an urgent need for research into feasible approaches to the planning and incremental implementation of programs for the broader range of sanitation services in response to effective demand and financial capacities of governments.

Urban wastewater management in large urban agglomerations: Beyond the household and neighborhood levels, the largest unsolved financing problem is the expansion of wastewater treatment in large urban areas. Currently, only a small fraction of wastewater in cities in developing countries is treated before being returned to the environment. Unfortunately, the evidence suggests that urban wastewater treatment, while very important for health, environmental, and amenity needs, is much more expensive that simple access to safe water and household sanitation. A long-term strategy for urban wastewater management in the large urban agglomerations in the developing world should be a high priority for 2003.

PART VIII: THE ROLE OF WATER MANAGEMENT IN REDUCING POVERTY AND ACHIEVING THE OTHER MILLENNIUM DEVELOPMENT GOALS[50]

This part of the report analyses the way in which actions in the water resource area will impact on the other Millennium Development Goals, especially in poverty reduction, but also in hunger, health (child mortality, maternal mortality and major diseases), and environmental sustainability. It briefly elaborates on the role of water management in wider sustainable development strategies and the way it contributes to livelihoods improvement, economic growth and the maintenance of ecological integrity, identifying issues that need to be explored further if the full potentials of water in poverty reduction are to be realized. The issues are inherently generic. To be made operational, the shared but different responsibilities of different actors at community, policy and intermediate levels need to be defined and management strategies that reflect to the specific potentials and challenges of different places need to be developed.

As noted in Part I, the Millennium Declaration calls for "sustainable water management strategies at the regional, national and local levels which promote both equitable access and adequate supplies". Realizing this is a formidable challenge anywhere. It will require considerable commitments of resources and political will to create the institutional capacities, governance conditions and flows of investments needed to make it happen. This is unlikely to be forthcoming unless a more coherent case that demonstrates the role of water in poverty reduction is articulated. Such a case can be based on demonstrating the contribution of water to achieving the full set of MDGs.

[50] This part of the report was prepared by John Soussan of the Stockholm Environment Institute, York, England.

Table 4 (at the end of the paper) sets out a basic analysis of the direct and indirect contributions that water management can make to realize each of the MDGs. The first goal, ***to halve by 2015 the proportion of the world's people whose income is less than $1/day,*** will require sustained economic growth in developing countries, with that growth focused on sectors that provide livelihood opportunities for the poor.

Agriculture is and will continue to be a key sector for many poor people and limited and unreliable access to water is a determining factor in agricultural productivity in many regions. These problems reflect rainfall variability that is likely to increase with climate change. Key strategies include improving the efficiency of existing irrigation and extending the irrigated area where possible, extending rainwater harvesting and improving on-farm water management in rainfed agriculture, crop diversification and improvements to crop strains.

Water is also a factor of production in industry and many other types of economic activity. These include both large-scale activities and small, often home-based activities where the poor are themselves entrepreneurs. Access to key factors of production, including water, is critical to the viability of these activities that can act as a ladder out of poverty. In some cases, investments in major water infrastructure such as dams and major irrigation schemes can act as a catalyst for local and regional development. Improved health from better quality water also increases productive capacities, increases life expectancy and reduces health care costs.

Water management is of critical importance to reducing the vulnerability of poor people to water-related hazards such as drought and floods that can devastate livelihoods and throw people into poverty and can destroy infrastructure and major investments, thereby reducing the risks associated with such investments. Finally, water management is a key to maintaining the ecosystems on which many poor people depend and that are the foundation of local-level sustainable development. In these and other ways, water management will contribute directly and indirectly to sustainable development and poverty reduction and should be a key element in any strategy to reduce the proportion of people living below the poverty line.

Poor food security is reflected in both inadequate total nutrition and in poor nutritional balance, with deficiencies of proteins and other key elements of diet the lot of many hundreds of millions of the world's poor. This is reflected in the goal ***to halve by 2015 the proportion of the world's people who suffer from hunger***. Food security is in part a national issue, with the need to ensure water is available for expanded and reliable grain production, including ensuring ecosystems integrity to maintain water flows to food production, which is critically important for affordable food for the rapidly growing numbers of urban poor. Eighty percent of all water use in developing countries is for irrigated agriculture[51], which produces a disproportionate share of total food production in the developing world. Water also contributes to sustainable food security through its role in generating livelihoods and improving health conditions of the poor.

[51] This highlights the importance of efforts to improve water use efficiency in irrigated agriculture – more crop per drop – referred to elsewhere in this report.

In rural areas, food insecurity needs to be addressed at the local level, with landless families, women-headed households, rainfed farmers, livestock herders and other vulnerable people key targets. Reliable water for subsistence agriculture, home gardens, livestock, tree crops and the sustainable production of fish, tree crops and other foods gathered in common property resources are keys to improving the food security of those most vulnerable to hunger. Rainwater harvesting is an important approach in this context.

Education is a critical input into poverty reduction, as reflected in the goals to ensure that, by 2015, children everywhere will be able to complete a full course of primary schooling and progress towards ***gender equality and the empowerment of women*** should be demonstrated by ensuring that girls and boys have equal access to primary and secondary education. Although water does not play a direct role in achieving education and gender equality goals, improved health resulting will play a key role in improving attendance and performance at school, whilst better water supplies will mean millions of girls do not have to spend study time collecting water. Similarly, community-based organizations for water management improve the social capital of women and lead to more balanced gender roles.

Water management will play a critical role in achieving the three ***health-related MDGs***: to reduce by two-thirds, between 1990 and 2015, the death rate for children under the age of five years, to reduce by three-fourths, between 1990 and 2015, the rate of maternal mortality and to halve, by 2015, halted and begun to reverse: the spread of HIV/AIDS, the scourge of malaria and the scourge of other major diseases that affect humanity. Water-borne diseases are the biggest killer of young children and Improved quantities and quality of domestic water and sanitation will directly reduce child deaths. Improved nutrition and food security, for which access to water is critical, will reduce susceptibility to a wide range of diseases and will lower both child and maternal mortality rates. Malaria is a scourge that will only be successfully addressed through water management that removes their breeding habitat. Similarly, water management will reduce vulnerability to a range of other diseases for which water is a vector.

As noted earlier, an important part of the MDG goal on ***ensuring environmental sustainability*** is targeted at reversing the loss of environmental resources. Water is amongst the resources most under pressure in many parts of the world. Water management is similarly crucial for the maintenance of many ecosystems such as wetlands, mangroves, reefs and others that are experiencing or threatened by degradation. Direct actions to move to more sustainable patterns of exploitation and improve water management are critical to achieving this goal. A key for this is the development of integrated management within river basins that creates conditions where sustainable ecosystems management is possible and upstream-downstream impacts are mitigated.

Another important part of this same MDG goal aims at improving the lives of slum dwellers, for which improved water management and sanitation services are critical. The urban poor suffer poor quality, unreliable water services, often having to queue for long periods to collect or pay high prices for these inadequate supplies. Few have access to decent sanitation and many are vulnerable to flood threats and contamination from polluted waters. Providing reliable, affordable and accessible water supplies, improved

sanitation and protection from floods and pollution will require substantial investments and reform programs that need to be core parts of wider improvements to urban governance and infrastructure.

The importance of water in achieving the other MDGs is significant. It is central to realizing goals such as food security, some of the health goals, protecting natural resources and improving the lives of slum dwellers, but less critical for education and other health goals. What is clear, however, is that the need for improved water security is an issue that unites the world's poor wherever they live and whatever the specific form their poverty takes. It also unites the poor and the rest of the global community, for all people everywhere are affected by the specters of increasing water scarcity and degrading environments that impact upon the lives of the poor. Achieving improvements to water management requires investments, changes to governance conditions, institutional reforms and the creation of capacities that will have wider benefits for poverty reduction. In these ways improvements to water management must be central to the achievement of the Millennium Development Goals.

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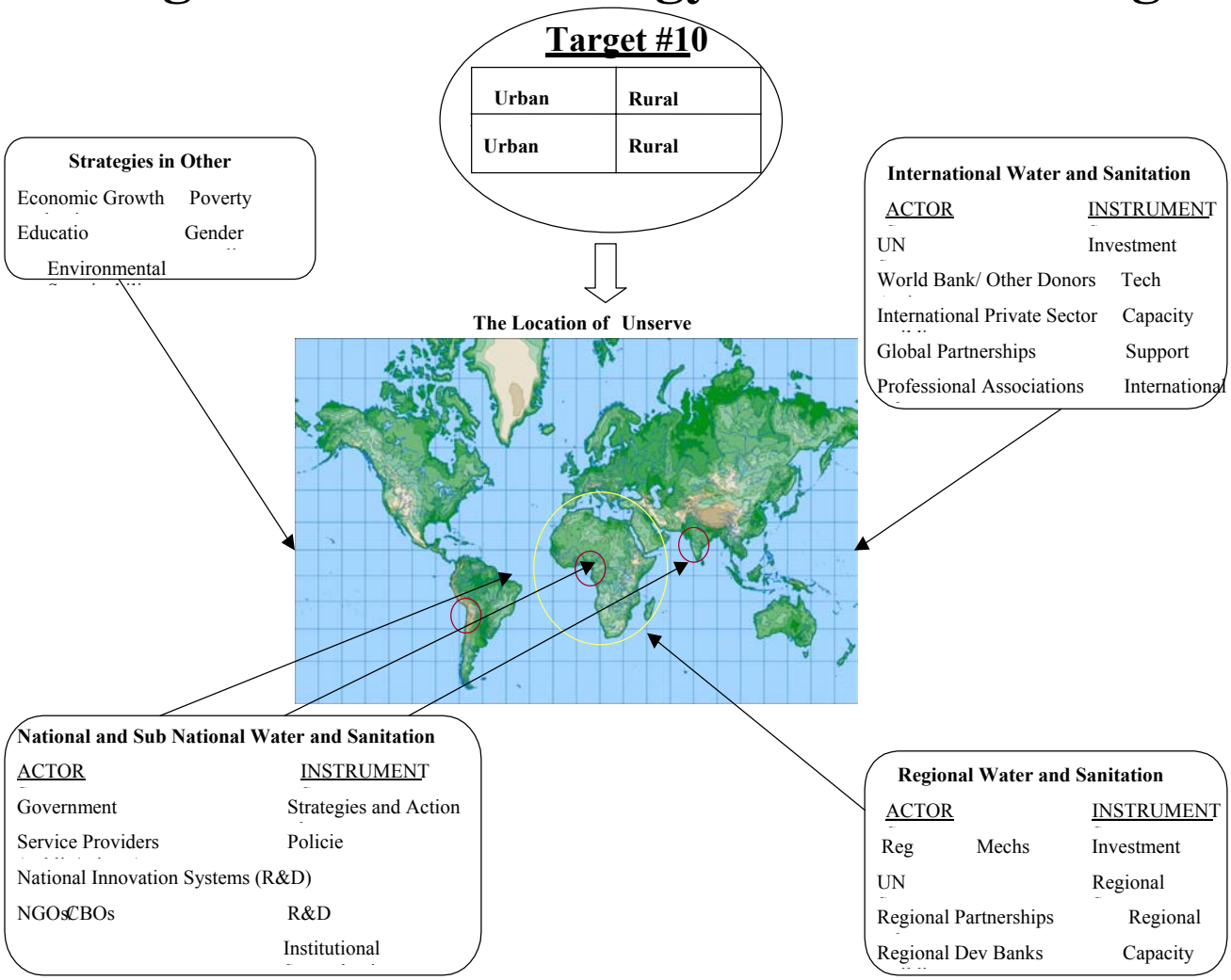
Fig. 3 Overall Strategy to Achieve Target



Millennium Goal	Directly Contributes	Indirectly Contributes
Poverty: to halve by 2015 the proportion of the world's people whose income is less than $1/day	• Water as a factor of production in agriculture, industry, many other types of economic activity • Investments in water infrastructure and services as a catalyst for local and regional development	• Reduced vulnerability to water-related hazards reduces risks in investments and production • Reduced ecosystems degradation boosts local-level sustainable development • Improved health from better quality water increases productive capacities
Hunger: to halve by 2015 the proportion of the world's people who suffer from hunger	• Water as a direct input into irrigation for expanded grain production • Reliable water for subsistence agriculture, home gardens, livestock, tree crops • Sustainable production of fish, tree crops and other foods gathered in common property resources	• Ensure ecosystems integrity to maintain water flows to food production • Reduced urban hunger by cheaper food grains from more reliable water supplies
Universal Primary Education: to ensure that, by 2015, children everywhere will be able to complete a full course of primary schooling		• Improved school attendance from improved health and reduced water carrying burdens, especially for girls
Gender Equality: progress towards gender equality and the empowerment of women should be demonstrated by ensuring that girls and boys have equal access to primary and secondary education		• Community-based organisations for water management improve social capital of women • Reduced time and health burdens from improved water services lead to more balanced gender roles
Child Mortality: to reduce by two-thirds, between 1990 and 2015, the death rate for children under the age of five years	• Improved quantities and quality of domestic water and sanitation reduce main morbidity and mortality factor for young children	• Improved nutrition and food security reduces susceptibility to diseases
Maternal Mortality: to reduce by three-fourths, between 1990 and 2015, the rate of maternal mortality	• Improved health and reduced labour burdens from water portage reduce mortality risks	• Improved health and nutrition reduce susceptibility to anaemia and other conditions that affect maternal mortality
Major Diseases: to halve, by 2015, halted and begun to reverse: The spread of HIV/AIDS The scourge of malaria The scourge of other major diseases that affect humanity	• Better water management reduces mosquito habitats and malaria incidence • Reduced incidence of range of diseases where poor water management is a vector	• Improved health and nutrition reduce susceptibility to HIV/AIDS and other major diseases
Environmental Sustainability: to stop the unsustainable exploitation of natural resources and to halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water	• Improved water management, including pollution control and sustainable levels of abstraction, key factors in maintaining ecosystems integrity • Actions to ensure access to adequate and safe water for poor and poorly-serviced communities	• Development of integrated management within river basins creates conditions where sustainable ecosystems management possible and upstream-downstream impacts are mitigated

Annex 1: List of Task Force Members
(As of 20 February 2003)

Task Force Sponsored Members

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Chair, Africa Water Task Force

Task Force Members Sponsored by Other Institutions

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Annex 1: List of Task Force Members

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Vanessa Tobin
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Annex 2: List of Reference Materials to Supplement Background Paper[52]

1. List of Background Documents for First Task Force Meeting

Key Papers

"A Framework for Action on Water and Sanitation." WEHAB Working Group. August 2002.

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"Road Map towards the implementation of the United Nations Millennium Declaration." Report of the Secretary-General, United Nations General Assembly, September 6, 2001.

"Sustaining Our Future." Chapter V, *We the Peoples: the Role of the United Nations in the 21st Century.* Report of the Secretary-General, 2000.

"The State and Progress of Human Development." Chapter 1, Human Development Report, UNDP, 2002.

"United Nations Millennium Declaration." Resolution adopted by the General Assembly, United Nations General Assembly, September 8, 2000.

2. List of Reports and Other Documents Contributed by Task Force Members (As of 20 February 2003)

"Background Paper on the State of Water and Sanitation in the World's Cities Report." Prepared and contributed by Kalyan Ray, November 22, 2002.

"Comments on Monterrey Estimates." Prepared and contributed by Bill Cosgrove, November 2, 2002.

"Financing the International Goals for Water and Sanitation." Report prepared by UNICEF. Contributed by Vanessa Tobin, November 2002.

"Delivering Clean Water For All." Paper prepared and contributed by Richard Jolly, November 1, 2002.

"Improving Access to Affordable Water and Sanitation." An Issue Paper for the Bonn 2001 International Conference on Freshwater prepared by the Water Supply and Sanitation Collaborative Council (WSSCC). Contributed by Gourisankar Ghosh, January 2, 2003.

"It's Not Just the Water Department: Getting a Fix on Institutions." Maggie Catley-Carlson and William J. Cosgrove. Contributed by Bill Cosgrove, November 21, 2002.

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3. Special Report

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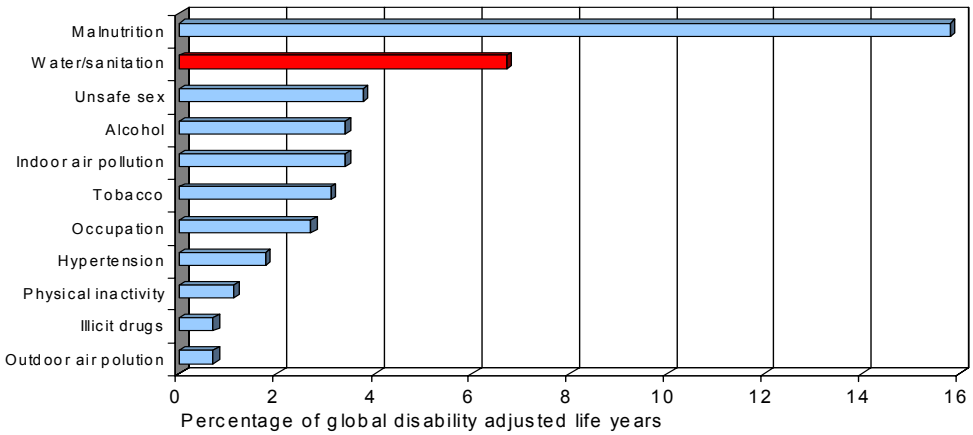
Annex 3: Health Impacts of Water and Sanitation

The Effect of Interventions to Prevent Diarrhea

Intervention	Median reduction	(range)
Hardware:		
Sanitation	36%	
Water Quantity	20%	
Water Quality and Quantity	17%	
Water Quality	15%	
Hygiene:		
Handwashing	35%	(30 – 89)
Several Behaviors	26%	(11 – 40)

Source: Esrey *et al.* 1991; Hutley *et al.* 1997.

Burden of disease due to selected risk factors



water environment sanitation

Source: BMJ, 2000; 320:1228