PROGRAMMING GUIDELINES FOR WATER, SANITATION, AND HYGIENE

A DESIGN MANUAL FOR USAID STAFF

II. ANNEXES

AUGUST 2010

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A U.S. GOVERNMENT WASH FRAMEWORK

This annex describes the current USAID context for WASH programming. More than 15 U.S. federal agencies are involved in international water issues, but USAID is the lead U.S. Government foreign assistance Agency responsible for WASH programs.

Three distinct U.S. Government WASH policy, legislative, and budgetary requirements affect USAID in this sector: the Paul Simon Water for the Poor Act of 2005, the USAID/Department of State Water Framework, and the annual (since 2008) WASH Earmark.

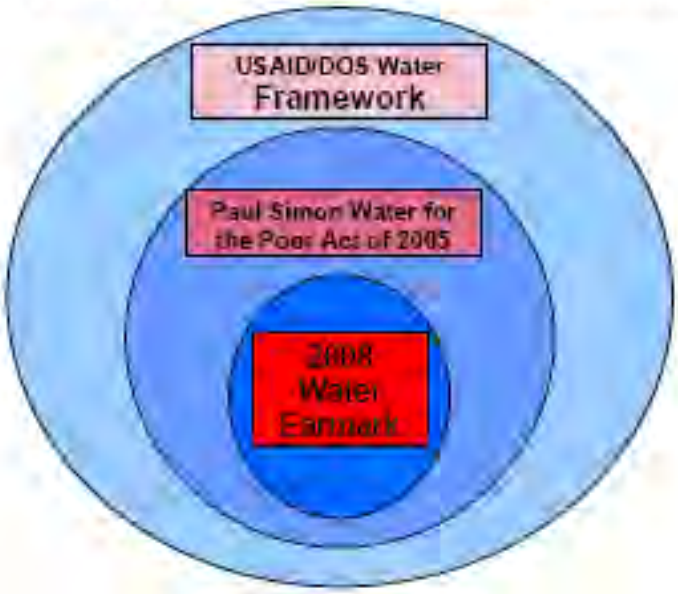
THE PAUL SIMON WATER FOR THE POOR ACT OF 2005

The signing of the Paul Simon Water for the Poor Act on December 1, 2005, established the provision of affordable and equitable access to safe drinking water and sanitation as a key component of U.S. foreign assistance projects. The act requires the secretary of state, in consultation with USAID and other U.S. Government agencies, to develop and implement a ten-year strategy to provide affordable and equitable access to safe water and sanitation in developing countries within the context of sound water resources management. The act specifically supports the accomplishment of the WASH Millennium Development Goals and employs the same timeframe, until 2015. The act requires the secretary of state to submit an annual report prepared in consultation with USAID. The 2008 report identifies 36 priority countries, presented in the table below, for U.S. water and sanitation activities. Initially, this authorizing legislation provided no specific funding for the accomplishment of its purposes, but this situation changed with the Appropriations Act of 2008 and the establishment of an earmark.

Priority Countries for U.S. Water and Sanitation Activities, FY 2008

Sub-Saharan Africa		Asia and the Pacific		Europe and Eurasia	Latin America and the Caribbean	Middle East
Democratic Republic of Congo	Mozambique	Bangladesh	Philippines	Armenia	Haiti	Egypt
Ethiopia	Niger	Cambodia	Sri Lanka	Georgia		Iraq
Ghana	Nigeria	India	Tajikistan	Kosovo		Jordan
Kenya	Senegal	Indonesia	Timor-Leste			Lebanon
Liberia	Somalia	Laos	Vietnam			West Bank/ Gaza
Madagascar	Sudan	Pakistan				
Mali	Tanzania					
	Uganda					
	Zambia					

The USAID Institutional Context for "Water"



Name	What Is It?	Legal Authority	Time Period	Funding	Reporting Requirements
USAID/DOS Water Framework	Appears as Annex to 2008 Water for the Poor Act Report	None – Advisory Document only	N/A	N/A	• Any activity in water sector should be reported as an OP "Key Issue" • USAID funding for all water-related activities has been reported since 2000
Paul Simon Water for the Poor Act (WFPA)	Authorizing legislation that requires USAID and DOS to develop and implement a 10 year strategy to address water supply and sanitation access (MDGs), and water resources management that supports increased access to WSH	Authorizing Legislation	2005-2015	No Specific Funding Provided	• USAID funding for all water-related activities has been reported since 2000
2008 Water Earmark	"Hard" Congressional appropriation – definition focused clearly on WSH (both specific WSH interventions, and some water resources management and water productivity with clear and demonstrable linkages to WSH	Appropriations Legislation	Annual (since 2003)	$300 million hard earmark ($125 million in Africa)	• Required reporting on funding levels for all earmark eligible activities (EGAT Water Team complies with assistance of Regional/Pillar Bureaus and Missions) • "F"-established "Technical Earmark Group" (TEG) created to oversee process and document eligibility of activities
Foreign Assistance Framework	Operational Plan (OP) Water "Key Issue"	Administrative Requirement	Annual	N/A	• Required reporting on funding levels for all water activities under OP "Key Issue" • WSH activities listed under numerous Elements/Sub-Elements
FACTS	USAID database for reporting progress against Operational Plans – includes 'common indicators' associated with FAF Elements		Annual	N/A	• Standard indicators for WSH located under 3.1.8 and 3.1.5.7 • WSH activities can be programmed under numerous Elements/Sub-Elements – but will need to develop 'custom' indicators to report WSH results

THE USAID/DEPARTMENT OF STATE WATER FRAMEWORK

In 2008, in response to the requirements of the Paul Simon Water for the Poor Act, USAID and the Department of State jointly produced an internal document, "Addressing Water Challenges in the Developing World: A Framework for Action," which sets forth guiding principles for U.S. foreign assistance strategic action in this sector. This framework, however, is only advisory in nature, is not tied to the Millennium Development Goals, and is broader in scope than the Paul Simon Act. No funding is directly tied to the framework, which states that the U.S. Government is committed to using its foreign assistance resources in support of a "Blue Revolution" that will help achieve a water-secure world where people and countries have reliable and sustainable access to an acceptable quantity and quality of water to meet human, livelihood, production, and ecosystem needs while reducing the risks associated with hydrologic variability and the projected impacts of climate change.

The framework sets forth three inter-related dimensions of water management that should be addressed to reach this vision for a water-secure world:

- Improving access to water supply and sanitation and promoting better hygiene;
- Improving water resources management among competing needs; and
- Improving water productivity in agriculture and industry.

Improving Access to Water Supply and Sanitation and Promoting Better Hygiene

The framework begins with an understanding that the gap in achieving the international goal is immense—from the financial, technical capacity, and governance perspectives—and cannot be addressed by any single actor alone. The framework supports investments that yield significant long-term impact per dollar spent and that create impact at scale. Based on experience and best practices, such investments should focus on five programming areas:

- Strengthening the capacity and sustainability of small-scale providers that operate in rural and peri-urban areas;
- Improving the operating environment, operations, and financial sustainability of utilities that serve cities and towns undergoing the most rapid population growth;
- Mobilizing capital from domestic markets for infrastructure development on a permanent and sustainable basis;
- Improving household and community-level hygiene and sanitation; and
- Capitalizing on humanitarian assistance/disaster projects in water supply and sanitation.

Improving Water Resources Management

The framework encourages satisfying immediate needs while protecting water quality and building the foundation for meeting future demands on water resources. Investing in policy and legal reforms; building local capacity; and strengthening water resources planning, management, and governance may yield lasting change and complement investments in infrastructure. The framework endorses the following principles of integrated water resources management (IWRM) within cross-cutting projects:

- Improving resources planning at the appropriate hydrologic scale;
- Addressing water quantity and quality across water-use sectors;
- Strengthening participatory governance involving the full range of water resource stakeholders;
- Mobilizing financing to sustain investments in water resources management and protection; and
- Managing hydrologic variability and taking action to mitigate and minimize impacts from droughts and floods.

Improving Water Productivity

The framework recognizes that the world's population faces two great challenges with respect to water: improving the efficiency and productivity of water use in agriculture and industry, and protecting and maintaining water quality. The great majority of freshwater used by humans is for food production—roughly 70 percent worldwide and 82 percent in developing countries. The rising global population and the demands of industry mean that the agricultural sector must become more efficient and more productive in its use of water. A key aspect of improving water use in agriculture involves addressing issues of water prices and water rights and strengthening the institutions that work in these areas. The USAID/Department of State document focuses predominantly on approaches that:

- Improve water efficiency and productivity in agriculture;
- Help countries adapt to climate variability and climate change; and
- Reduce water pollution.

THE WASH EARMARK

In response to continued bipartisan public support, USAID's 2008 appropriations legislation contained a US$300 million hard congressional earmark for WASH activities, with a sub-earmark of US$125 million for Sub-Saharan Africa. The earmark, at slightly higher levels, was repeated in the 2009 appropriations legislation and is expected to be continued in future annual USAID appropriations. This earmark definition is narrower and more targeted than the scope of either the full Paul Simon Act or the USAID/Department of State water framework. The definition of earmark-eligible activities may change from year to year, so the annual appropriations legislation language must be specifically consulted in order to reach a final determination. The following description of the fiscal year (FY) 2008 earmark is presented to give a general idea of how the earmark operates in practice.

The FY 2008 Omnibus Appropriations Act language states that "*not less than $300,000,000 shall be made available for safe drinking water and sanitation supply projects, including water management related to safe drinking water and sanitation, only to implement the Senator Paul Simon Water for the Poor Act of 2005 (Public Law 109-121).*"

The purpose of this earmark was to increase sustainable access to safe drinking water and sanitation and improve hygiene. USAID-eligible activities must have had a stated intent to address these goals as a primary or secondary objective, and demonstrate that intent through objectively verifiable indicators linked to these goals.

General Requirements

Activities eligible for allocation or attribution to the FY 2008 earmark must meet all of the following conditions:

- An activity must state as a primary or secondary objective increased access to drinking water supply or sanitation services, better quality of those services, and/or hygiene promotion. The objective may correspond to either direct or indirect support, but it must make explicit the linkage to drinking water supply, sanitation, or hygiene outcomes.
- Activities must identify objectively verifiable indicators and targets that track progress toward the identified drinking water supply, sanitation, and/or hygiene objective. To the extent possible, the use of common FACTS (Foreign Assistance Coordination and Tracking System) indicators is encouraged. For those interventions that do not lend themselves to the standardized FACTS indicators, activity managers may develop customized indicators to track progress.
- In projects that include both earmark-eligible and noneligible activities, funding may be attributed to the earmark only in proportion to the activity's support of the earmark definitions provided here.

This earmark is focused on a specifically defined subset of interventions linked to water supply, sanitation, and hygiene. Four categories of activities have been defined to be eligible for total or ***partial*** allocation or attribution to this earmark ***when they support the objective of access to drinking water and sanitation services or improved hygiene*** (emphasis added): (I) drinking water supply, sanitation, and hygiene (WASH); (II) water resources management; (III) water productivity; and (IV) water security.

Missions and operating units reporting projects under this earmark should consider as a first order of preference those activities that directly support drinking water supply and sanitation service delivery or hygiene promotion (Category I), including infrastructure, as well as those activities related to organizational/institutional capacity building and sector and utility reforms needed to create sustainable management and improved service delivery. Preference should also be given to activities that focus on the poor.

MONITORING AND REPORTING

Funding

The 2005 Paul Simon Water for the Poor Act requires annual reporting to Congress through 2015 detailing progress against the goals of the act, including the levels of funding allocated or attributed to each objective and to each operating unit. Reporting for the act includes all water-related activities, not just those attributed to the FY 2008 earmark.

Water has been identified as a key issue in the Foreign Assistance Framework and the FACTS to assist in overall reporting for the act. The Guidance Annexes for the FY 2008 Operational Plan and 2007 Performance Report place all water-related activities into a single key issue category, whether or not they are attributable to the earmark. For FY 2008, operating units should assign their total water sector funding to this key issue, including both attributable and nonattributable water funds.

As needed, additional information and/or justifications may be solicited from operating units to determine the specific amount attributable to the earmark definition, and to disaggregate funding into more detailed activity subcategories consistent with the areas described above.

Progress Indicators

Indicators associated with different aspects of the water sector are located in different parts of the Foreign Assistance Framework and FACTS database. The following are the standard indicators that will be most relevant for reporting on projects under the Water Supply and Sanitation Element (3.1.8) *only* (that is, those related to Category I activities, listed above):

- The number of people in target areas with access to an improved drinking water supply as a result of U.S. Government assistance; and
- The number of people in target areas with access to improved sanitation facilities as a result of U.S. Government assistance.

Other related and relevant indicators that correspond to Categories I through IV may also be found under the Maternal and Child Health Element (3.1.6.7), the Natural Resources and Biodiversity Element (4.1.8), and the Clean Human Environment Element (4.8.2), as well as others. Additional information on the use of these indicators is provided in the Supplemental Guidance Annexes to the Operational Plan Guidance for 2008. For those interventions that do not lend themselves to the standardized FACTS indicators, activity managers may develop customized indicators to track progress.

ENVIRONMENTAL COMPLIANCE

Compliance with USAID Environmental Procedures (22 CFR 216), including appropriate environmental mitigation and monitoring measures, should be considered an integral part of all activity development and implementation under this earmark, including water supply or sanitation infrastructure, hygiene promotion interventions, and WASH-related activities in the areas of water resources management, water productivity, or water security.

USAID WASH PROGRAMMING AT THE REGIONAL AND GLOBAL LEVELS

USAID supports regional and global partnerships that leverage U.S. support and take advantage of economies of scale to provide more effective and efficient assistance. Representative water-related partnerships include:

- **Hygiene Improvement Project (HIP):** Is mandated to support sustainable hygiene and sanitation improvement that starts at scale, as opposed to starting small and eventually scaling up. The focus is on improving key WASH behaviors—safe water management and household water treatment, hand washing with soap at critical times, and safe feces disposal—by building comprehensive programming that attends to supply and access; policy and skills building; and promotion through mobilization, marketing, and the best of interpersonal behavior change. HIP has developed ground-tested guidance documents, job aids, and tools, which are available on the project's website.
- **Advancing the Blue Revolution Initiative (ABRI):** Encourages transboundary water collaboration on major river systems, improves water use efficiency, increases access to better water supply and sanitation, and enhances capacities and policies in the Middle East and Asia. Its activities include strengthening a new regional association of water and sanitation utilities in the Middle East through the development of business planning, knowledge management, communications, and training; the design and convening of workshops and conferences; and support for technical working groups.

ABRI also works with water operator partnerships in Africa and is encouraging the creation of twinning relationships among and between utilities in Africa and the Middle East. Its major thrust is the creation of an alliance of partners from government, the private sector, donors, and other key stakeholders to advance transformational changes in the sector.

- **Environmental Cooperation—Asia (ECO-Asia):** Promotes the twinning of utilities to expand and improve water access. Together with the Asian Development Bank and the International Water Association, established the WaterLinks network to pair water operators to spread best practices.
- **The International Network to Promote Household Water Treatment and Safe Water Storage (CDC and USAID):** USAID has co-chaired the network's Implementation Working Group and, through its implementing partners, has contributed research and lessons learned on scaling up promotion of household water treatment.
- **Water and Development Alliance (USAID and Coca-Cola):** Supports activities to increase access to sustainable and improved sources of water and sanitation services, protect and sustain watersheds, and enhance productive uses of water.
- **Sustainable Water and Sanitation Activities in Africa (SUWASA):** Promotes innovations in WASH reform and finance in up to 15 African countries. SUWASA will provide technical assistance, commodities, and small capital grants to support water utility reform and a simultaneous expansion of improved services into underserved areas.
- **African Water Operators Partnership:** Will pair African utilities with each other to support learning between peers rather than relying on outside experts to transmit innovations.

B INTRODUCTION TO THE WASH SECTOR

To the people of poor nations, we pledge to work alongside you to make your farms flourish and let clean waters flow; to nourish starved bodies and feed hungry minds.

– President Barack Obama, January 20, 2009

This annex provides an overview of the water and sanitation sector, with enough detail to familiarize you with (1) how water supply, sanitation, and hygiene services are provided; (2) the major current challenges facing the sector; (3) the pace of change; (4) priorities for donors and countries; and (5) programming activities in water, sanitation, and hygiene. More than an introduction, the annex is intended to bring you up-to-date on major developments and advances in the sector.

THE GLOBAL WATER SUPPLY AND SANITATION CHALLENGE

World leaders agree that water supply and sanitation are a critical part of the core development agenda for their countries. Water and sanitation are central to all of the internationally agreed upon Millennium Development Goals (MDGs) and the focus of MDG Target 10, which specifically aims to halve by 2015 the proportion of people without sustainable access to improved water supply and sanitation (see Tables B.2 and B.3). Access to water supply services is defined as the availability of at least 20 liters per person per day from an improved source within 1 kilometer of the user's dwelling. Sanitation, as it is referred to in the MDGs, means the infrastructure and service provision required for the safe management of human excreta. Excreta disposal systems are considered improved if they are private and if they separate human excreta from human, animal, and insect contact. For USAID WASH programming purposes, "sanitation" does not necessarily mean "construction of facilities." Most current work in sanitation involves nonhardware, or "soft," activities, such as capacity building through training, hygiene promotion, marketing, financing, participatory planning, and institutional strengthening.

Currently an estimated 884 million people, or 12 percent of the world's population, do not have access to clean drinking water. Some 2.5 billion people, 40 percent of the world's population, lack basic sanitation. One in four people in developing countries practices open defecation. Most of these people live in Asia and Africa and are among the most vulnerable and the poorest of the world's population. Disparities between urban and rural areas are pronounced. For example, four times as many people in rural areas—approximately 746 million—are without improved water sources, compared with some 137 million urban dwellers. Similarly, rural dwellers represent more than 70 percent of the total without improved sanitation. Poverty is inextricably linked to lack of access to these basic services. Almost two in three people lacking access to clean water and sanitation live on less than US$2 a day, with one in three living on less than US$1 a day.[1]

[1] UNDP. 2006. Human Development Report, p. 35.

Joint Monitoring Programme for Water Supply and Sanitation

Improved	Unimproved
Drinking Water Source	
▪ Piped water into dwelling, plot, or yard ▪ Public tap/standpipe ▪ Tubewell/borehole ▪ Protected dug well ▪ Protected spring ▪ Rainwater	▪ Unprotected dug well ▪ Unprotected spring ▪ Small cart with tank/drum ▪ Tanker truck ▪ Surface water (river, dam, lake, pond, stream, channel, irrigation channel) ▪ Bottled water*
Sanitation Facilities	
Use of following facilities in home/compound: Flush/pour-flush to: ▪ Piped sewer system ▪ Septic tank ▪ Pit latrine ▪ Ventilated improved pit (VIP) latrine ▪ Pit latrine with slab ▪ Composting toilet	***Use of following facilities anywhere:*** ▪ Flush/pour-flush to elsewhere ▪ Pit latrine without slab/open pit ▪ Bucket ▪ Hanging toilet/hanging latrine ***Use of a public facility or sharing of any improved facility:*** ▪ No facilities; bush or field (open defecation)

Source: Joint Monitoring Programme, 2008.

** Bottled water is considered to be improved only when the household uses water from another improved source for cooking and personal hygiene; where this information is not available, bottled water is classified on a case-by-case basis.*

The social, economic, and environmental impacts of inadequate water supply, sanitation, and hygiene are staggering. The World Health Organization estimates that inadequate water supply, sanitation, and hygiene are responsible for roughly half of the malnutrition in the world. More than nine percent of all illness in the developing world results from poor water, sanitation, and hygiene, leading to billions of days of lost work and missed school each year. About six million people are blind from trachoma, a disease caused by the lack of water combined with poor hygiene practices. Diarrheal disease caused by lack of clean water and sanitation kills 5,000 children a day—almost two million a year. Some 88 percent of diarrheal deaths worldwide are attributable to unsafe water, inadequate sanitation, and poor hygiene.[2] Best estimates suggest that sanitation improvements could prevent 600,000 of these deaths. Those who do survive a bout of diarrheal disease early in life may carry its effects for the rest of their lives (for example, by experiencing decreased physical fitness, stunting, lower cognition, and late onset of schooling).[3]

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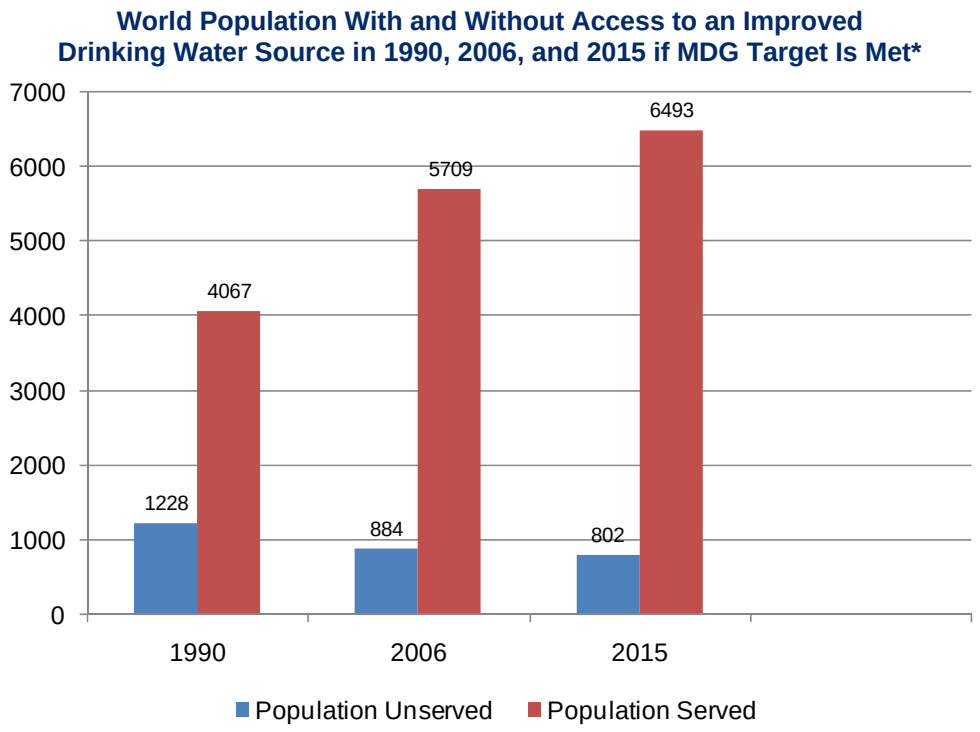
[2] UNICEF. 2009. "Diarrhoea: Why Children Are Still Dying and What Can Be Done." http://www.unicef.org/health/index_51412.html.

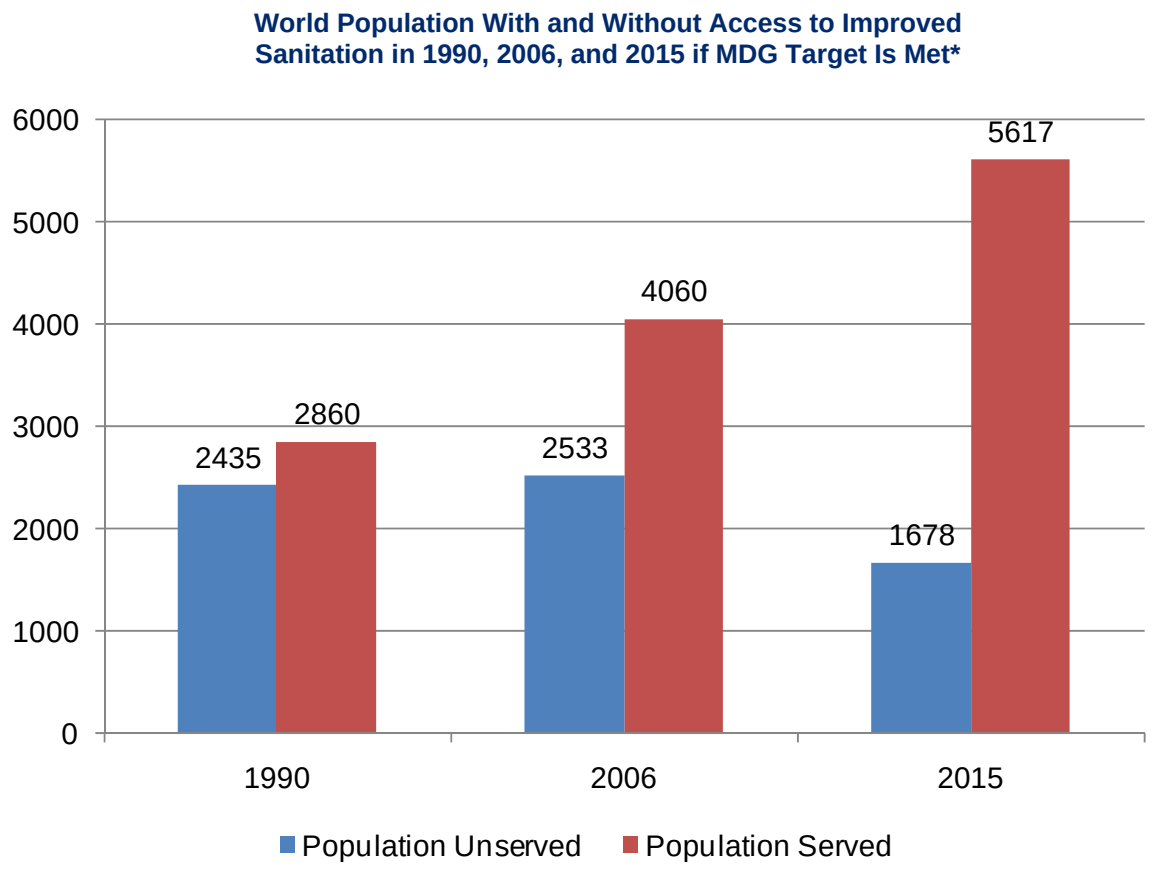
[3] Guerrant, D., S. Moore, A. Lima, P. Patrick, J. Schorling, and R. Guerrant. 1999. "Association of Early Childhood Diarrhea and Cryptosporidiosis with Impaired Physical Fitness and Cognitive Function Four to Seven Years Later in a Poor Urban Community in Northeast Brazil." *American Journal of Tropical Medicine and Hygiene* 61 (5): 707–713. Also see Guerrant, R., M. Kosek, S. Moore, B. Lorntz, R. Brantly, and A. Lima. 2002. "Magnitude and Impact of Diarrhea Disease." *Archives of Medical Research* 33 (4): 351–355.



Source: World Health Organization, and United Nations Children's Fund Joint Monitoring Programme, 2008.
**Target is not expected to be exceeded; therefore, the figure for the unserved is likely to be higher.*

Unsafe water and inadequate sanitation are often major causes of lost work and missed school days, perpetuating the cycle of economic and social stagnation in many countries. Women and young girls are particularly affected by lack of basic sanitation and a safe water supply. They are the primary ones who draw water or purchase it from vendors for household use, transport it home, store it for use, and use it for cooking, cleaning, and washing. Rural women may spend up to six to eight hours a day collecting water, particularly in the dry season. Many women and girls have to wait to relieve themselves until dark, often causing them to drink less during the day, resulting in a range of health problems. They sometimes confront the fear and reality of harassment and sexual assault. Girls, particularly during their menstruation period, are likely to miss school due to lack of proper sanitation facilities. Moreover, when household members are ill, women normally are the caretakers.

Poor households lose, on average, three hours every day as women and girls search for clean water or places to relieve themselves—time that could be better spent on more productive endeavors, such as work and school. The millions of cases of childhood diarrhea have a significant impact on the way mothers spend their time, on household expenses for treatment, as well as on lost work, wages, and productivity. Overall, infant deaths, lost workdays, and missed school are estimated to have an economic cost of about



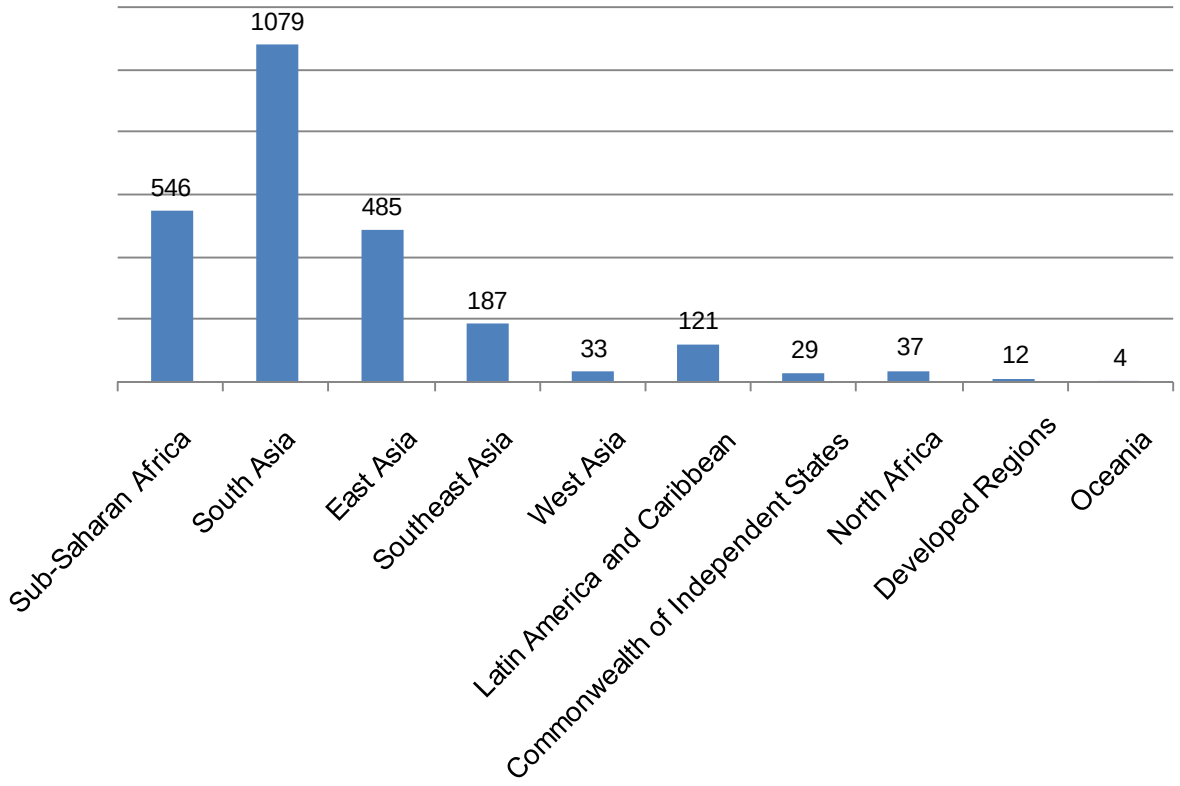
Source: World Health Organization, and United Nations Children's Fund Joint Monitoring Programme, 2008.
**Target is not expected to be exceeded; therefore, the figure for the unserved is likely to be higher.*

US$38 billion per year, of which more than 90 percent is related to inadequate sanitation. The environmental. impacts of inadequate sanitation include the economic costs of environmental degradation due to contamination of water resources from wastewater pollution. In Southeast Asia, for instance, these costs amount to more than US$2 billion per year.[4]

Like many people, you may think that simply providing a fresh, clean water supply will substantially reduce water-related diseases. What most people do not know, however, is that water alone is not enough. As Table B.5 illustrates, washing hands with soap and water, a key hygiene behavior, helps reduce the incidence of diarrheal disease by more than 40 percent. Yet, despite its lifesaving potential, hand washing with soap is seldom practiced and is not always easy to promote. Investments in health, child survival, education, water supply, and sanitation are all jeopardized if there is a lack of emphasis on hand washing with soap. Although soap is available in most households around the world, observed rates of hand washing with soap at critical moments (after defecation, after handling children's feces, and before

[4] Water and Sanitation Program. 2007. *Economic Impacts of Sanitation in Southeast Asia*. The World Bank.

Population Without Improved Sanitation, by Region, 2006 (in millions)



Source: World Health Organization, and United Nations Children's Fund Joint Monitoring Programme, 2008.

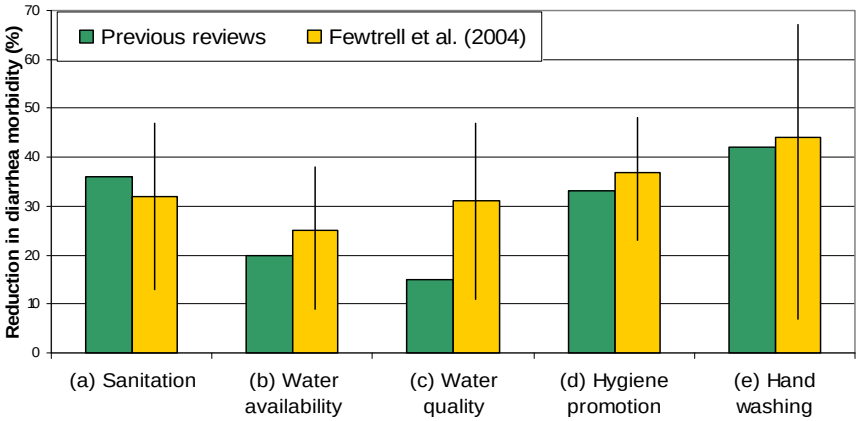
handling food) range from zero to 34 percent. For successful and sustained behavioral change to occur, it is vital to incorporate community-based and community-sensitive approaches that understand what motivates people to change. The introduction in schools of water, sanitation, and hygiene interventions, including hand washing with soap, is an entry point for children to understand and then take these good hygiene practices back into their homes and communities.

Increased Effectiveness

A World Bank evaluation of 122 water projects found that the effectiveness of a project was six to seven times higher where women were involved than where they were not.

Source: Cited in "For Her—It's the Big Issue." Evidence Report. 2006. Water Supply and Collaborative Council. www.genderandwater.org/page/5124.

Table B.5: Impacts of Water, Sanitation, and Hygiene on Diarrhea Morbidity



Previous reviews:

a – d Esrey SA et al. (1991) Bull WHO 69 (5): 609-621

e Curtis V, Cairncross S (2003) Lancet Inf Dis 3: 275-281.

Providing access to water supply is not just about service delivery—it relies upon finite and dwindling water resources. The world's rapidly increasing population requires more water than ever before to support domestic, agricultural, and industrial needs. Global water use will increase as much as 40 percent over current demand by 2020. Meanwhile, the quality and quantity of available water resources is dropping. It is estimated that three billion people in the world could be living under conditions of water stress by 2055, and 1.8 billion people could be living in regions with absolute water scarcity. Water stress and water scarcity constrain economic development opportunities, limit demographic movement, and affect basic human health.

DEVELOPMENT IMPACTS OF WASH INTERVENTIONS

WASH interventions not only address the MDG targets for the sector but can simultaneously tackle all of the MDGs. Poverty reduction, human health, environmental stewardship, status of women, and stability and security concerns all are linked to improvements in water supply and sanitation. Table B.6 shows the contributions of water supply and sanitation to the MDGs, as well as interventions in water resource management.

[5] Pacific Institute. 2008. State of Water 2008.

Contributions of Water Supply and Sanitation to the Millennium Development Goals

MDG and Relevant Targets	Contributions of Domestic Water Supply and Sanitation	Contributions of Sound Water Resources Management and Development
Poverty To halve the proportion of the world's people whose income is less than US$1/day	▪ Household livelihood security rests on the health of its members; adults who are ill themselves or who must care for sick children are less productive. ▪ Illnesses caused by unsafe drinking water and inadequate sanitation generate health costs that can claim a large share of a poor household's income. ▪ Time spent collecting water cannot be used for other livelihood activities.	▪ Water is a factor of production in agriculture, industry, and other economic activities that provide livelihoods for poor people. ▪ Investments in water infrastructure can be a catalyst for local/regional development. ▪ Reduced ecosystem degradation and reduced vulnerability to water-related disasters make livelihood systems of the poor more secure.
Hunger To halve the proportion of the world's people who suffer from hunger	▪ Healthy people are better able to absorb the nutrients in food than those suffering from water-and-sanitation-related diseases, particularly worms, which rob their hosts of calories.	▪ Water is a direct input to irrigation for expanded grain production. ▪ Reliable water is necessary for subsistence agriculture, home gardens, livestock, and tree crops. ▪ Fish, nuts, and other foods gathered in common property resources depend upon the quality and quantity of water in ecosystems. ▪ Cheaper food prices reduce urban hunger.
Gender Equality To ensure that girls and boys have equal access to primary and secondary education	▪ Reduced time, health, and caregiving burdens from improved water services give women more time for productive endeavors, adult education, empowerment activities, and leisure. ▪ Water and sanitation facilities closer to home, and some school facilities dedicated to girls, put women and girls at less risk for sexual harassment/assault while gathering water and searching for privacy. ▪ Higher rates of child survival are a precursor to the demographic transition to lower fertility rates; having fewer children reduces women's household responsibilities and increases their opportunities for personal development.	▪ Community-based organizations for water management can improve the social capital of women by giving them leadership and networking opportunities and building solidarity among them.
Child Mortality To reduce by two-thirds the death rate for children under 5	▪ Improved sanitation, safe drinking water sources, and greater quantities of domestic water for washing reduce infant and child morbidity and mortality. ▪ Sanitation and safe water in health-care facilities help ensure clean deliveries and reduce neonatal deaths. ▪ Mothers with improved water supply and sanitation services are better able to care for their children, both because they have fewer illnesses and because they devote less time to fetching water and seeking privacy for defecation.	▪ Improved nutrition and food security reduce susceptibility to diseases. ▪ Well-managed water resources help poor people make a decent living and reduce their vulnerability to shocks, which in turn gives them more secure and fruitful livelihoods to draw upon in caring for their children. ▪ Malaria is a leading cause of death among children, and better water management reduces mosquito habitats.

MDG and Relevant Targets	Contributions of Domestic Water Supply and Sanitation	Contributions of Sound Water Resources Management and Development
Maternal Mortality To reduce by three-fourths the rate of maternal mortality	▪ Accessible sources of water reduce labor burdens and health problems resulting from water portage, reducing maternal mortality risks. ▪ Improved health and nutrition reduce susceptibility to anemia and other conditions that affect maternal mortality. ▪ Safe drinking water and basic sanitation are needed in health-care facilities to ensure basic hygiene practices following delivery. ▪ Higher rates of child survival are a precursor to the demographic transition toward lower fertility rates, and fewer pregnancies per woman reduce maternal mortality.	▪ Improved nutrition and food security reduce susceptibility to diseases that can complicate pregnancy. ▪ Malaria is particularly dangerous to pregnant women, and better water management reduces mosquito habitats.
Major Disease To halt and begin to reverse the spread of HIV, malaria, and other major diseases	▪ Safe drinking water and basic sanitation help prevent water-related diseases, including diarrheal diseases, schistosomiasis, filariasis, trachoma, and helminthes. A total of 1.6 million deaths per year are attributed to unsafe water, poor sanitation, and lack of hygiene. ▪ Improved water supply reduces diarrhea morbidity by 21 percent; improved sanitation reduces diarrhea morbidity by 37.5 percent; hand washing can reduce the number of diarrheal cases by up to 35 percent; additional improvements in drinking water quality, such as point-of-use disinfection, would reduce diarrheal episodes by 45 percent.	▪ Improved water (and wastewater) management in human settlements reduces transmission risks of mosquito-borne illnesses such as malaria and dengue fever. A total of 1.2 million people die of malaria each year, 90 percent of whom are children under 5. ▪ Improved health and nutrition reduce susceptibility to/severity of HIV/AIDS and other major diseases.
Environmental Sustainability To stop the unsustainable exploitation of natural resources	▪ Adequate treatment and disposal of excreta and wastewater contribute to less pressure on freshwater resources. ▪ Improved sanitation reduces flows of human excreta into waterways, helping to protect human and environmental health.	▪ Improved water management, including pollution control and water conservation, is a key factor in maintaining ecosystems' integrity. ▪ Integrated management within river basins allows for approaches that preserve ecosystem health.
Slum Dwellers To improve the lives of 100 million slum dwellers	▪ Inadequate access to safe water and inadequate access to sanitation and other infrastructure are two of the five defining characteristics of a slum.	▪ Slum settlements are often built on sites particularly vulnerable to water-related disasters.

Source: UN Millennium Project Task Force on Water and Sanitation. 2005. Health, Dignity, and Development: What Will It Take? *London: Earthscan. Table 2.1, p. 18.*

Reaching the MDG targets on water supply and sanitation would ensure that 87 million additional people gain access to safe drinking water and 173 million additional people gain access to basic sanitation each year from 2006 to 2015. According to the World Health Organization, the global return on every dollar invested in water and sanitation projects, measuring health impacts alone, is US$4 and US$8, respectively. Looking at the broader range of economic impacts, evidence shows that each US$1 invested

in water supply and sanitation gives an economic return of between US$3 and US$34.[6] Adding rapidly deployable hygiene interventions targeted at the poor, such as improved household water treatment and storage, can generate even higher returns, up to US$60.[7] The health impacts of improved water supply and sanitation are in themselves highly significant. Safe disposal of feces leads to a one-third reduction in childhood diarrhea. Meeting the targets would translate into an average global reduction of diarrheal episodes of 10 percent and a total annual economic benefit of US$84 billion.[8] Sub-Saharan Africa (SSA) alone would save US$15 billion, or nearly two percent of average gross domestic product (GDP). Table B.7 shows the health impact of sanitation and hygiene interventions as measured by disability adjusted life years (DALYs), the international standard for comparison of burdens of disease.

The Health Impacts of Sanitation

Disease/Ailment	Living in Low-Income Countries	Total Disease-Attributable DALYs in All Age Groups
Diarrhea	A systematic review of studies estimated that the safe disposal of excreta can reduce diarrhea by 36 percent. Another review found that hand washing with soap can reduce diarrhea by 45 percent.	73 million
Acute Respiratory Infections	A systematic review of studies estimated that hand washing with soap reduced the incidence of respiratory infections by a mean of 23 percent. Of these studies, however, the only one conducted in a developing country found that hand washing with soap brought about a 50 percent reduction.	95 million
Malnutrition	Malnutrition has been estimated as an underlying cause in between 35 percent and 53 percent of all child deaths globally. Over half of this malnutrition-associated mortality is attributable to diarrhea and nematode infections caused by poor sanitation. Malnutrition is also a factor in stunted growth.	39 million
Neglected Tropical Diseases	Neglected tropical diseases such as trachoma, schistosomiasis, and nematode infections are all intrinsically linked to sanitation, as they are transmitted by fecal contamination and poor hygiene. These diseases affect more than 1 billion people.	19 million

Source: Water Aid. May 2009. Fatal Neglect: How Healthy Systems Are Failing to Comprehensively Address Child Mortality.

Other social and economic benefits include 272 million additional days in school, US$7.3 billion saved each year in medical costs, and an additional 320 million working days for people ages 15 to 59.

CONSTRAINTS TO PROGRESS

You may be wondering why so many people in the developing world lack access to drinking water and sanitation. The explanations vary across communities, countries, and regions, but a common set of political, institutional, financial, and technical challenges confronts most developing countries. One of the chief constraints is the lack of political will—meaning an absence of political leadership and government

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[6] World Health Organization. 2005. *Making Water a Part of Economic Development: The Economic Benefits of Improved Water Management and Services*.

[7] SIWI. 2005. *Driving Development by Investing in Water and Sanitation*.

[8] World Health Organization. 2004.

commitment to allocating sufficient national resources to the sector and to undertaking the reforms necessary to improve performance and attract investments.

Two types of institutional constraints impede expanding access to services—the lack of appropriate institutions at all levels and deficiencies within existing institutional arrangements. While institutional reform is often necessary for the expansion of water supply and sanitation services, it is usually not sufficient. Financial investment is also required, whether from national or subnational government tax revenues, user charges, cross subsidies from users who can afford to pay, private-sector investments, or official development assistance (ODA). Estimated investments toward the water supply and sanitation MDGs from all sources is US$15 billion a year, but an estimated additional investment of around US$11.3 billion per year is needed. There is no clear picture of how to fill the gap.[9] Water utilities in developing countries are often unable to generate sufficient cash flows to meet costs, much less make investments to expand services. Towns and municipalities typically have limited access to loan financing facilities. Expectations that the private sector will fill the gap are often overly optimistic, and ODA is relatively modest compared with what is needed.[10]

You might assume, as many do, that technology is the limiting factor in extending water supply and sanitation services. In fact, no breakthrough scientific discoveries or dramatic technological advances are required to meet the MDGs. One of the key lessons of the past several decades in WASH interventions is that technical issues, while important, are not as significant as other constraints. Table B.8 presents a wide range of available technologies that can provide safe, reliable water supply and sanitation services. What is important is to select the right technology based on the expressed priorities and needs; the institutional capacity to deliver services reliably; and the financial and technical capacity to sustain the service in a particular local context. Understanding demand is important because a mismatch between supply and demand often results in the installation of infrastructure that is too expensive or complex for communities to maintain or ill-suited for community preferences or customs. This is not to say there is no room for innovation. Technology has played, and will continue to play, an important role in improving access to water supply and sanitation, as is described later in this chapter.

Sanitation presents a special set of issues that may constrain service provision. As you may have noted already in these guidelines, “water supply and sanitation,” occasionally joined by “hygiene,” are words that often appear together. In practice, “sanitation” and “hygiene” often disappear during the planning, policymaking, budgeting, and implementation processes, while effort and resources are primarily

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[9] Hutton, G., and L. Haller. 2004. *Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level*. World Health Organization.

[10] WaterAid, 2008. “Think Local, Act Local: Effective Financing of Local Governments to Provide Water and Sanitation Services.” http://www.wateraid.org/documents/think_local_act_local_report.pdf.

Representative Small-Scale Water and Sanitation Activities/Technologies

Service	Small-Scale WASH Activities and Technologies
Water Sources	▪ Pond and spring improvements ▪ Hand-dug wells ▪ Small-diameter boreholes ▪ Wells with hand pumps ▪ Roof rainwater catchments ▪ Small dams and seasonal impoundments ▪ Rivers and streams
Water Distribution	▪ Simple spring-fed gravity feed water distribution systems ▪ Well or surface water source pump with storage tank and piped distribution to standposts or individual yard taps or connections ▪ Extensions of existing urban water lines into unserved or underserved peri-urban zones
Water-Use Points	▪ Showers ▪ Clothes washing basins ▪ Cattle troughs ▪ Hand washing taps
Individual Latrines	▪ Ventilated improved pit (VIP) ▪ Composting latrines ▪ Dehydrating latrines ▪ Pour-flush latrines ▪ Simple pit with or without cover
Community Latrines	▪ (See technologies above)
Sewerage	▪ Small-scale septic and leach field systems ▪ Settled and simplified sewers ▪ Water stabilization ponds ▪ Constructed wetlands ▪ Waterborne sewage to primary/secondary treatment ▪ Ecological sanitation (urine-diverting toilets, arborloo latrines)

allocated to "water supply." The reasons for this neglect are complex. However compelling the societal reasons may be for investing in sanitation—reduced disease burden, reduced public health costs, increase school attendance for girls, greater economic productivity—there is generally a low perceived priority, from political figures to poor household dwellers, for sanitation. This severely impedes a demand for improved services, particularly when the poor have more pressing priorities, such as food, water, and shelter. Other reasons include that the absence of a national-level institution with responsibility for promoting sanitation in most countries means sanitation falls through the cracks; the limited political and personal power of women—who have the primary responsibility for sanitation—means that the strongest advocates are absent from the decision making process; and debates about whether sanitation should be primarily a household versus a public responsibility can distract attention from action.

Like sanitation, hygiene is often overlooked in the development agenda. Infrastructure alone cannot ensure that the health and other benefits associated with improved water supply and sanitation services are realized. What matters is the way in which the infrastructure is used and the extent to which it is accompanied by efforts to promote changes in hygiene-related behavior. Some behaviors change almost automatically, such as using more water for washing if it is readily available. Other behaviors, usually ones simply not thought about, require large amounts of time and effort to change, such as the disposal of

young children's excreta, but have significant impacts. Most of the morbidity and mortality among children due to diarrheal disease can be prevented through the use of straightforward hygiene improvement actions. These actions are well defined and include the proper disposal of human feces, which can reduce diarrhea prevalence by 30 percent or more.[11]

Another constraint to progress in reaching the water and sanitation MDGs is the frequent lack of attention to gender differences as they relate to roles, needs, contributions, and primary channels of communication in WASH projects. This impedes the sustainability of WASH initiatives. For example, when toilets are designed by men, they often do not meet women's needs, such as for security and privacy. Thus, the facilities often go unused by the women and their children. Often, women are not heard in consultations or involved in management or decision making, particularly if they play a minor role in overall community decision making. They may well be marginalized under a demand-driven approach unless steps are taken to include them. A gender perspective is needed not only on personal roles and relations but on the wider institutional and policy issues. Experience shows that when such a perspective is used, the quality and sustainability of WASH projects are enhanced.[12]

Finally, a history of expensive failure created trepidation over time within the donor community about pumping additional resources into the sector. As programming has shifted from the traditional top-down approaches to meet output objectives to more community-based approaches, success has bred renewed interest in supporting water supply, sanitation, and hygiene intervention.

In the Mali Macina Wells project, women were not consulted in the planning of the wells or their management. Management of the wells was allocated to male community leaders, whereas women were give cleaning tasks. The systems and equipment were impractical for women, although the women were primarily responsible for water collection. In addition, the men failed to adequately fullfill their roles because water and sanitation were seen as a woman's domain.

Source: Green, C., with S. Baden. 1994. "Gender Issues in Water and Sanitation Projects in Mali," cited in Gender and Water. 2005. Charlie Seven Bridge. Swiss Agency for Development and Cooperation.

USAID AND WASH

Historically, involvement in WASH has been an important part of the U.S. Government commitment to improving the lives of poor people. A short history of USAID's early involvement in water and water-related activities begins in the 1960s, with an emphasis on irrigated agriculture, community water supply, and a handful of large dam construction projects. During the 1970s, the emphasis of USAID assistance shifted from dam construction toward community water supply and sanitation for health, and increased assistance to water user associations and community organizations. USAID responded to the UN-designated international drinking water decade in the 1980s with the implementation of the Water and Sanitation for Health (WASH) Project, which focused on child survival through clean drinking water supply, better hygiene, and enhanced wastewater treatment and sanitation. The WASH project continued on through 1994 and provided technical assistance in more than 85 countries. It evolved considerably from an emphasis on hardware (such as pumps, pipes, and their

[11] Fewtrell, L., R. B. Kaurmann et al. 2005. Water, Sanitation and Hygiene Intervention to Reduce Diarrheas in Less Developed Countries: A Systematic Review and Meta-Analysis. *The Lancet Infectious Disease 5(1): 42–52.*

[12] WaterAid. 2009. Seen but Not Heard: A Review of the Effectiveness of Gender Approaches in Water and Sanitation Service Provision. http://www.wateraid.org/documents/plugin_documents/wa_nep__gender_study_report_july_2009.pdf.

operation and maintenance) to the implementation of cutting-edge approaches for ensuring community participation and management and sustained behavior change.[13]

The Environmental Health Project (EHP) took up parts of the scope of the WASH project as well as other related projects and continues, to date, to focus on child health and reduced exposure to environmental health risks, including inadequate water supply, sanitation, and hygiene. Within EHP, the Hygiene Improvement Project is the latest generation of USAID health investments in water and sanitation that aims to reduce diarrheal disease and improve child survival. HIP builds on the mission's 30-year experience in water, sanitation, and hygiene by ensuring that infrastructure and water and sanitation technologies such as latrines, water pumps, soap, improved water containers, and water treatment options are available, and that policy, systems issues, advocacy, and financing schemes are addressed to ensure a conducive environment for sustainability.

Since 2005, a renewed focus on water supply, sanitation, and hygiene at USAID has been evident and is in line with international commitments, such as the MDGs, and other initiatives, such as the UN-designated 2008 International Year of Sanitation. This focus is consistent with, and responsive to, U.S. citizen interest groups and reflects U.S. congressional concern with the global WASH challenge. The catalyst has been the 2005 Paul Simon Water for the Poor Act (WFPA). The WFPA called for increased U.S. investment in water supply and sanitation and is linked to a $300 million congressional earmark in 2008 and $325 million for 2009.[14]

RESPONSE OF THE INTERNATIONAL DEVELOPMENT COMMUNITY

The response of the international development community to the global water supply and sanitation crisis has had peaks and valleys. Significant international focus and investment occurred during the Water and Sanitation Decade (1981–1990) and brought water to 80 percent of the world's population and sanitation to 50 percent. During the 1990s, however, because no additional gains were made, population growth led to an increase in the absolute numbers of people without safe water or sanitation. More recently, ODA for water supply and sanitation has risen since 2001, after a temporary decline in the second part of the 1990s. In 2006 and 2007, the Development Assistance Committee (DAC) members'[15] bilateral annual aid commitments to the water supply and sanitation sector rose to US$4.7 billion, double the 2002–2003 figure in real terms. Over the period 2002–2007, bilateral aid to water supply and sanitation increased at an average annual rate of 19 percent.

The region most in need of improved access to water supply and sanitation, Sub-Saharan Africa, received 26 percent of total aid. The next most needy region, South and Central Asia, received 20 percent of total aid for water over the period.

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[13] For a good summary, see *Lessons Learned in Water Supply, Sanitation and Health: Thirteen Years of Experience in Developing Countries*. 1993. WASH project. Washington, D.C.: USAID. http://www.ehproject.org/eh/eh_publications.html.

[14] See USAID: A Framework for Action.

[15] The DAC is a key forum of major bilateral donors. They work together to increase the effectiveness of their common efforts to support sustainable development.

Forty-nine percent of the developing countries with available data have achieved or are on track to achieve the improved water target, while 23 percent have achieved or are on track to achieve the improved sanitation target. Fourteen of 21 countries with available data in Europe and Central Asia have achieved the target to improve water access. In the Middle East and North Africa, 7 of 13 countries with available data are not on track. Progress has been much slower for the improved sanitation target, and no Sub-Saharan African country and almost two-thirds of countries in the other regions are not on track, based on available data.

The share of aid to water supply and sanitation in total aid (sector-allocable aid) is an indication of the extent to which donors' aid projects focus on the sector. For DAC countries, the share has increased over the period 2002–2007, rising from five percent in 2002–2003 to 7 percent in 2006–2007, demonstrating a trend toward renewed emphasis on the water sector in members' aid projects.

A significant portion of aid is allocated to countries in difficult situations. Afghanistan, Chad, Laos, Madagascar, Mali, Mozambique, Niger, and Zambia all suffer from poor access to water supply (less than 60 percent) and to sanitation (less than 55 percent) and received at least, on average, US$2.5 per capita over 2005–2006. However, numerous countries with low levels of access to water supply and/or sanitation received very little during the same period (for example, Angola, the Central African Republic, the Republic of Congo, Somalia, and Togo received less than US$0.5 per capita), while the countries with higher levels of access received more (for instance, Albania, Costa Rica, Iraq, Jordan, Lebanon, and Malaysia all received at least US$13 per capita).[16] Aid to the sector has been concentrated in certain countries, with the 10 largest recipients receiving 53 percent of the total. It is important to note that even if the water supply and sanitation targets were achieved by 2015, there would still be more than 800 million people without water and 1.8 billion people without sanitation in 2015.[17] While the international development community plans its water supply, sanitation, and hygiene interventions to meet the MDG targets, it needs to put in place institutions, systems, and policies that will endure past 2015.

REACHING THE WATER SUPPLY AND SANITATION MDGs

Are these investments in WASH making a difference? Yes and no. The good news is that the world is on track to meet the drinking water targets. It is estimated that more than 90 percent of the global population will be using improved drinking water sources by 2015. Worldwide, the number of people without access to drinking water has fallen below one billion for the first time since data were first compiled, in 1990. However, these numbers mask regions of slow progress, such as Sub-Saharan Africa (SSA), which is home to more than a third of those globally lacking access to improved drinking water sources (see Table below).

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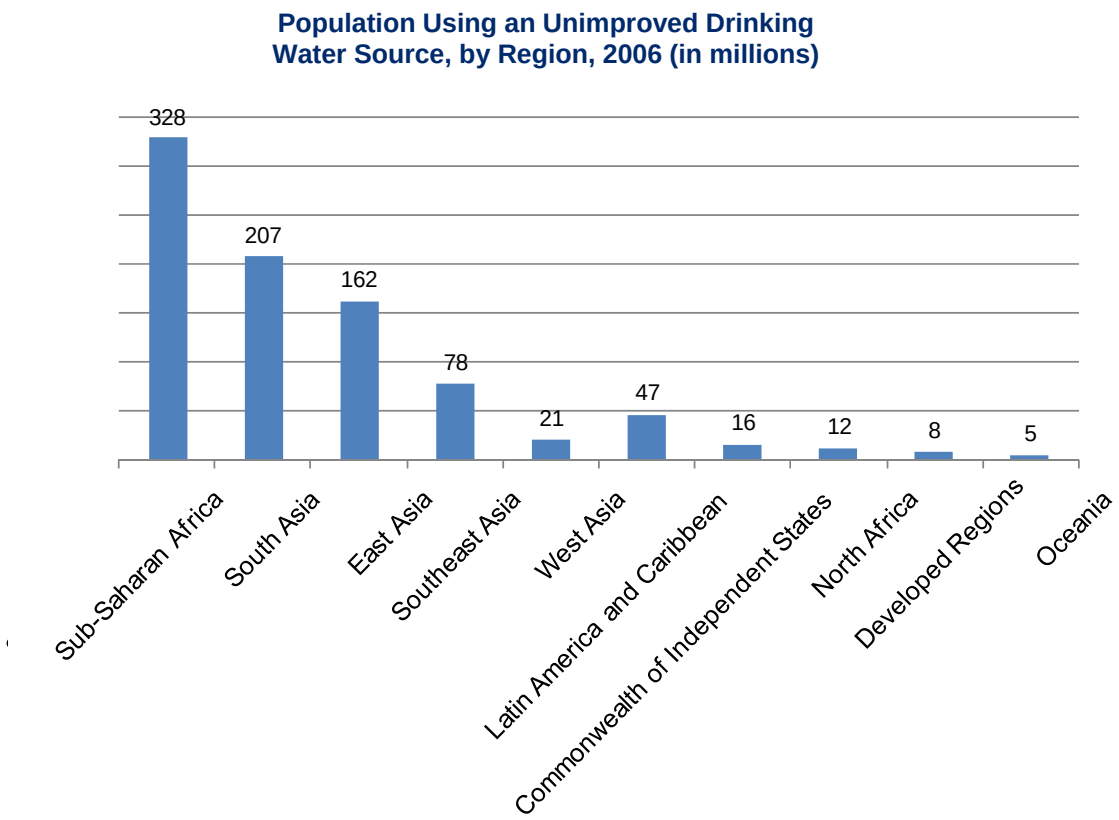
[16] Organisation for Economic Co-operation and Development. 2009. *Measuring Aid to Water Supply and Sanitation*. February. http://www.oecd.org/document/0/0,3343,en_2649_34447_23180544_1_1_1_1,00.html.

[17] Human Development Report. 2006.

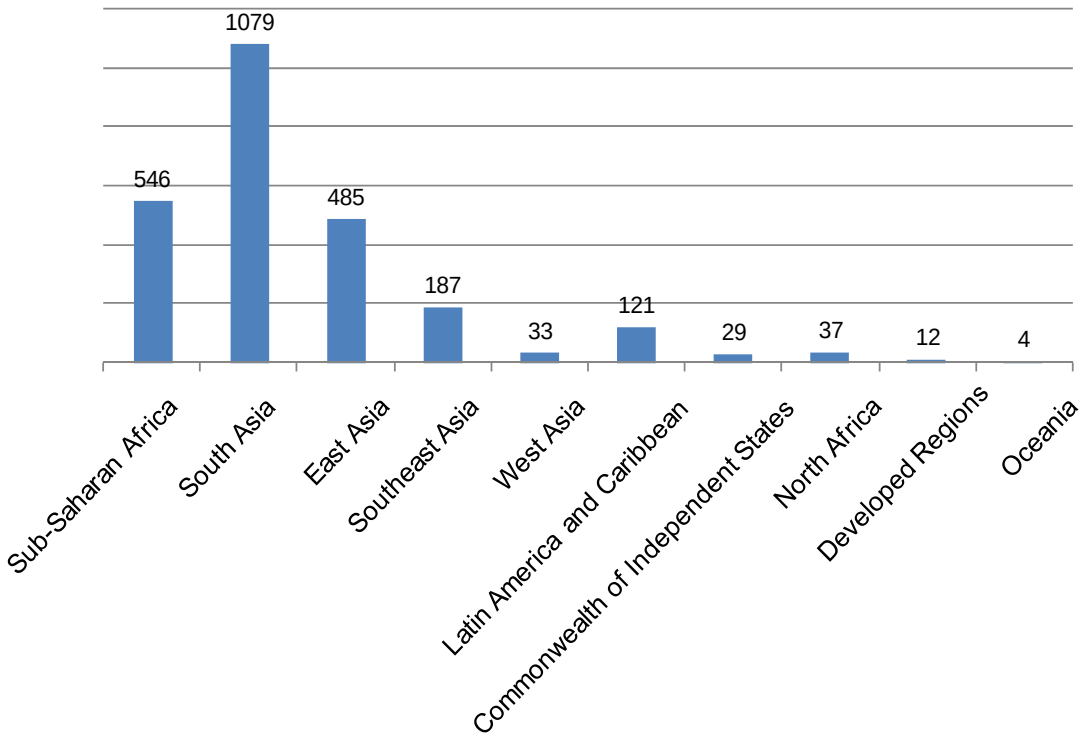


Source: World Health Organization, and United Nations Children's Fund Joint Monitoring Programme, 2008.

The bad news is that, under business-as-usual conditions, the sanitation target will be missed by an estimated 430 million people, with 74 countries off track from around the world (see Figure B.1).[18] Again, SSA is making the slowest progress regionally, in terms of percentage coverage, and will not meet the sanitation target until 2076. In sheer numbers, the sanitation challenge is most daunting for South Asia which will need to provide sanitation coverage for 43 million people a year, compared with its current rate of 25 million per year (see Table below).

[18] World Economic Forum. 2009. *Water Initiative: The Bubble Is Close to Bursting*. Draft for discussion at the World Economic Forum Annual Meeting.

Population without Improved Sanitation, by Region, 2006 (in millions)



THE U.S. GOVERNMENT RESPONSE

In 2008, the U.S. Government obligated US$815 million in 95 countries to improve access to safe drinking water and sanitation and promote hygiene (see Table B.11). This represented a 40 percent increase over 2007 and three percent of overall U.S. Government foreign assistance. Responding to the striking regional disparities in water supply and sanitation coverage, funding support to SSA nearly doubled over the previous year and now represents 43 percent of total USAID support. As a result of these efforts, in 2008, more than 4.6 million people gained first-time access to an improved water source, and more than 2.1 million gained first-time access to basic sanitation.

The U.S. Government is the second-largest bilateral donor (after Japan) to water and sanitation activities in developing countries, accounting for ten percent of all official assistance to the sector in 2006–2007.[19] The U.S. Government is also one of the largest donors to several multilateral development banks (such as The World Bank, the African Development Bank, and the Inter-American Development Bank) and intergovernmental organizations (including the UN agencies and the Global Environment Facility), which

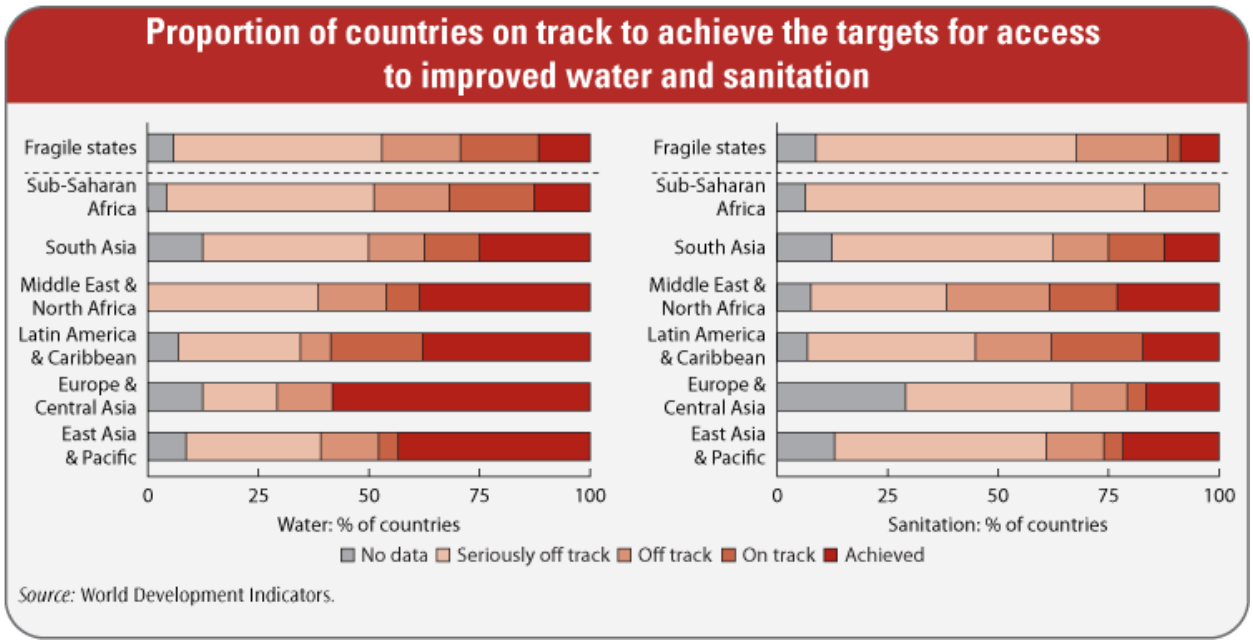
[19] http://www.oecd.org/dataoecd/2/60/42265683.pdf.

are significant contributors themselves to water and sanitation projects,[20] collectively providing nearly US$5 billion for water and sanitation–related activities in 2008.

Estimated USAID Water Obligations in FY 2008, by Region (U.S. dollars in millions)

Water for the Poor Act Objective	Africa	Asia	Middle East	Europe and Eurasia	Latin America and the Caribbean	Central Projects	Total
Water Supply, Sanitation, and Hygiene	$164.0	$67.6	$97.7	$6.7	$24.4	$29.6	$390.0 (78.5%)
Water Resources Management	18.5	24.1	8.4	0.7	10.0	2.7	$64.4 (13.0%)
Water Productivity	26.6	4.0	2.7	0.8	2.1	4.2	$40.4 (8.1%)
Disaster Risk Reduction	0	0	0	0	0	2.2	$2.2 (0.4%)
Total	$209.1	$95.7	$108.8	$8.2	$36.5	$38.7	$497.0

Notes: FY 2008 budget data represent best estimates from USAID analysis of information as of May 2009. In FY 2008, the regional bureau Asia and Near East split into two regional bureaus, Asia and Middle East. Source: USAID.



The WASH projects currently supported by USAID build on a growing base of programmatic experience with the behavioral, technological, political, and financial dimensions of WASH and include programming in access to hardware, hygiene promotion, and supporting the enabling environment.

[20] Senator Paul Simon Water for the Poor Act: Report to Congress. 2009. *www.ehproject.org/PDF/ehkm/wfp2009.pdf*.

WASH activities span the USAID programming spectrum and contribute to program outcomes in health, governance, environment, and transition initiatives. Examples of programming options are:

- Improving household and community-level hygiene and sanitation;
- Addressing gaps in handling sludge that ensure cradle-to-grave handling and disposal of feces;
- Integrating hand-washing hardware into latrine/toilet hardware packages;
- Building capacity of small-scale service providers;
- Strengthening water and sanitation utilities;
- Mobilizing domestic capital for infrastructure development; and
- Disseminating and integrating programming guidance on sanitation options for people living with HIV/AIDS.

Illustrative USAID WASH Activities

The new, US$16 million District Water, Sanitation and Hygiene Project in Timor-Leste will strengthen district government offices' ability to deliver water supply, sanitation, hygiene, and natural resource management services in rural areas.

The USAID Environmental Service Project in Indonesia supports improved management capacity in Indonesia's major sewer and wastewater treatment systems, community sanitation, and handling and treatment of sewerage sludge.

The EcoAsia Project partners with cities, utilities, and local communities to demonstrate sustainable, decentralized, and low-cost sanitation solutions.

PROVISION OF WATER SUPPLY AND SANITATION SERVICES

This section provides you with an overview of how countries provide water supply and sanitation services to their populations. Because water supply and sanitation services differ from one another thematically and spatially, the challenges and approaches will vary by subsector and geography. You will learn about the issues related to water supply and sanitation, by subsector and by context—urban, rural, and small town. Hygiene straddles the spatial distinctions and is discussed separately.

Urban Water Supply and Sanitation

The key challenges in urban areas, for both water supply and sanitation, include inadequate total coverage, weak institutional capacity to deliver needed services, exclusion of the poor, and lack of sufficient financial resources.

Urban Water

Today, just over half of the world's population lives in urban areas, and by the year 2025 this will rise to almost two-thirds. Even in Africa, viewed primarily as a rural-based continent, the share of the population living in cities is expected to grow from 30 percent to 50 percent between 2000 and 2025. Rapid urbanization, combined with population growth, has led to demand for water supply and sanitation services that far outstrips governments' abilities to provide these basic services. Globally, 12 percent of urban populations lack access to clean drinking water. Regionally, these numbers can be much higher.

All municipalities aspire to provide their residents (or some of them) with a piped water supply that provides sufficient water of suitable quality, directly to the house, preferably indoors. A public utility is

traditionally responsible for service delivery and acquires water by abstracting large quantities from major surface water or groundwater resources. The utility treats and disinfects (as needed) the supply and distributes the water under pressure to a piped network, which can deliver the water directly to the household, to the yard of the household, or to any other distribution point. The customer is billed for use, and, in a perfect world, revenues would finance the operation and maintenance of the system and the associated capital costs.

In reality, in developing country cities, just maintaining an existing piped water supply distribution system may be beyond the water utility's capacity, let alone expanding the system and household connections. The public water utilities often have poor performance records and have failed to increase access to many of the urban residents, particularly the poor. This could be due to vested interests (for example, water vendors, organized crime, corrupt public officials, and dishonest utility staff may have a vested interest in preventing better services for the poor); administrative and legal issues (for instance, the utility may legally be required not to extend services to illegal settlements); the utilities' low capacity and lack of autonomy; lack of appropriate financial policies; or physical and technical barriers. In addition, high initial investment costs (such as dams, boreholes, transmission lines, pumping stations, treatment plants, and networks) and inefficiencies such as high water loss, low collection efficiency, high staff cost, and low tariffs combine to further reduce public utilities' ability to respond to growing demands for services. It is not unusual for 40 percent or more of all water that enters the distribution system to be unaccounted for through theft, illegal hookups, and leakage, either through public mains or household connections.

The urban poor, often representing a major proportion of the population, generally are not connected to the main utility network, particularly if connection charges are high or if they cannot obtain access to service for lack of land tenure. To cope, they seek alternatives, either through self-provision (such as collecting rainwater or surface water from streams, using a hand-dug well or borehole) or by buying water from private, informal water vendors (including water tankers, water carriers, or privately provided standpipes). In filling the gap in service delivery, small-scale providers (SSPs) become a significant factor in increasing access. For example, in Sub-Saharan Africa, 30 percent to 60 percent of urban residents are served by SSPs. The costs to buy water from SSPs are usually higher than that charged by the utility. Poor households are only able to afford this by cutting back heavily on the quantity consumed, and thereby end up paying similar monthly amounts to households that enjoy network access. When the poor are served by a public utility, they tend to receive poor-quality water and intermittent services and are often not viewed as clients deserving a service or a choice.

Improving and expanding the delivery of urban water supplies requires interventions on a number of levels. Because most utilities must substantially reduce costs and increase revenues to become financially viable, improving and extending service delivery requires reforming the utilities into well-functioning and financially viable entities. Utility reforms take many shapes, but all emphasize common management principles; notably, efficiency, accountability, transparency, and the participation of communities in decision making. An essential ingredient for successful reform has proven to be real commitment, often on a political level, to improving utility performance, which involves organizational behavior change and improved water governance. Utility reform approaches include strengthening the institutional, legal,

> The municipal water and sewage utility in the capital of Chile has trained and licensed local women in poor areas to make and repair water and sewage connections. They promote and repair connections among women and charge them per job.
>
> *Source: WSP/EASP/Bappenas. 2007. Gender Perspectives in Sanitation and Hygiene. Republic of Indonesia.*

regulatory, and policy framework; conducting performance monitoring and benchmarking; reducing non-revenue water; implementing water conservation practices; improving business planning and asset management; recognizing and regularizing the activities of informal or alternative service providers; devolving a range of service delivery options; improving access to finance; creating public–private partnerships; and promoting appropriate technologies that are low cost and acceptable to the community and households, such as community/group water taps and private-sector community water kiosks.

One solution that has proven successful in terms of expanding access to water supply is small piped water networks. Considered an interim solution until the utility can fully serve the residents, small piped water networks have been used in India, the Philippines, and Vietnam. A private water provider, using materials conforming to the main utility's standards, delivers piped water services. The goal is to promptly provide affordable, safe, and reliable water to a community until the main utility is able to reach these consumers directly. Once connected to the piped system, customers pay a lower amount than they paid for various nonpiped sources.[21]

Several tools and mechanisms to bring about these changes have been developed. Baseline surveys of demand for service can improve the design of utility reform projects in terms of subsidies, service levels, and technical standards, thus strengthening the pro-poor impact.[22] Greater involvement of the private sector in water supply through innovative approaches such as public–private partnerships may improve the institutional efficiency of the provider. Innovative financing solutions such as microfinance for household connections, output-based subsidies whereby providers pay for water they deliver especially to poor customers, and the use of municipal development funds are effective in helping extend services especially to the poor. Creating a voice and client power strengthens the role of the poor in demanding access to services at the levels they require and can afford.

Urban Sanitation

The coverage of sanitation in cities is always much lower than that for water. Many countries assign a lower priority for sanitation than water, partly as a result of the high investment costs and partly because of the lower perceived benefits (individual and societal) of sanitation services compared with those of water supply investments. Political will has been sorely lacking when it comes to placing sanitation high on the international development agenda. As a result, global sanitation investment expenditures are lower than those for water supplies, constituting only 20 percent of the total invested in the water and sanitation development sector.

The standard sanitation technology in urban areas in developed countries is waterborne sewerage, which consists of the collection of urine and excreta from water-flushed toilets in sewers that is then transported to a wastewater treatment plant for reuse or ultimate disposal in rivers, lakes, or seas. This is an off-site approach, as the waste is removed from the community. Conversely, most sewage treatment facilities in most developing countries do not work and wastewater is discharged virtually untreated into receiving water bodies. Waterborne sewerage systems are usually too expensive for developing country cities, particularly in informal urban settlements, due to the infrastructure and geographic cost constraints as

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[21] See Asian Development Bank. 2008. "In the Pipeline: Water for the Poor." http://www.adb.org/Documents/Books/Water-Pipeline/Water-Pipelines.pdf.

[22] See The World Bank. 2008. *Understanding Demand When Reforming Water Supply and Sanitation: A Case Study from Sri Lanka*. Water P-Notes, Issue 5. June.

well as the relatively cost-prohibitive hookup expense for individual households. Paying for wastewater treatment at a centralized location can easily double the costs of a sewerage project. Lower-cost adaptations of traditional waterborne sewerage systems have been developed, including simplified, small bore, and condominial sewerage systems. These remain off-site, waterborne systems, but the collection of waste is significantly less expensive than with traditional systems.

More often, urban residents in developing countries, particularly those in informal and peri-urban locations, rely upon on-site sanitation technologies that collect and treat human excreta. The individual latrine is the most used on-site sanitation system and includes a number of variations, from a simple pit with or without a cover to ventilated improved pits, composting, pour-flush latrines, dry toilets, and biogas latrines. More sophisticated and expensive systems include flush or pour-flush toilets connected to a septic tank or pit latrine.

Many people have access only to unimproved sanitation options, which include a pit latrine without a slab or an open pit; hanging toilets placed over water bodies; "flying" toilets whereby people defecate into plastic bags and then dispose of them; or public and shared facilities. Although more of a rural practice, even in urban areas people resort to open defecation. Besides household-level on-site sanitation systems, very often sanitation facilities will be needed for an entire community. There is also a need for toilet blocks in public places where people meet, such as schools, markets, and bus stops. In some cultures, there is a preference for separate latrines for men and women or adults and children. In these instances, too, any combination of ventilated pit latrines or pour-flush latrines connected to leach pits, septic tanks, or a municipal sewerage system can be successfully implemented.

A concept that has developed in sanitation is that of a sanitation ladder framework whereby sanitation technologies are introduced in an incremental manner. As the name implies, the ladder progresses from low rungs consisting of the most basic technological solutions to higher rungs of more sophisticated and effective solutions. The aim is to get people on the ladder (stopping open defection) and to motivate them to climb upward in service level.[23]

Several improvements to the technology of basic on-site systems have been developed, including modification of pit latrines to be composting latrines; installation of simple urinals with separate collector systems instead of using pit latrines for urination; modification of flush toilets to use less water; separation of gray water from the black water of toilets; equipping cess (or drainage) pits with a safety zone of additional filter material to prevent groundwater contamination; and use of waste material to produce biogas. A sanitation project should seek to evaluate and confirm a range of good existing technologies and also to catalyze the development and expansion of new appropriate technical options that are affordable, responsive to preference, socially and culturally acceptable, safe, and environmentally sound. This can be facilitated by supporting promising researchers and innovators; promoting studies and pilot tests of new technologies in the context of an ongoing project; and testing innovations for replication against health, technical, and environmental standards. The best technologies often evolve out of the local context and are most successful where local organizations or people have been involved in such adaptations.

[23] See http://www.irc.nl/page/31737 for an illustration of the steps on the sanitation ladder.

A notable shortcoming of most on-site sanitation projects is that they seldom include management of the waste material. With no means or funds to empty pit latrines and septic tanks, people abandon them or bypass them when they fill up. This causes a dual problem—there is no longer a place to defecate, and the waste material contaminates the surrounding environment. There is room for technology innovation in urban sanitation, although, as mentioned before, this is usually not the limiting factor. Such innovations could address flooding, poor soils, high population densities, and removal of septic waste.

Sanitation infrastructure and wastewater collection and treatment are only a part of sanitation and are referred to as the hardware of the sector. Improved sanitation requires that software investments also be included; that is, interventions related to hygiene, training, and promotional and educational activities. These include changing sanitary and hygiene behaviors, such as hand washing and proper disposal of children's waste. As previously discussed, these behaviors greatly reduce morbidity and mortality rates from hygiene-related diseases and achieve public health impacts that are more immediate, cost-effective, and more equitably spread throughout society than those realized from wastewater hardware investments alone.

The public utility responsible for water supply is usually also responsible for providing sanitation services and experiences the same challenges as those described above for water services. As is true in the water sector, the informal sector often steps in to fill the service delivery gap. SSPs are often the primary group ensuring that some level of sanitation services is offered to the poor. Most new sanitation continues to be privately acquired by households through the market from small-scale providers. In the past, approaches by the utility to expand sanitation services used a supply-driven approach, which failed on many levels. Essentially, a predetermined solution deemed adequate for poor people was selected by central authorities and installed at little or no cost to the consumer. Such supply-driven approaches, however, do not generate demand for improved sanitation and behavior change on the household level, do not produce sanitation products or services sustainable beyond external support, and do not generate replication at scale.

More recent sanitation approaches are demand driven, based on the principle that communities, their need for basic services, and the limitations and quality of their resources should guide the design and implementation of any sanitation system. Sanitation marketing has been developed as a means to harness the power of the marketplace and offers real promise for accelerating demand and access to sanitation. Public–private partnerships for sanitation have proven to be successful, as well. Operating in partnership enables the private sector, nongovernment agencies, and civil society to provide technical, educational, and human resources that the government may lack in-house. Partnerships also are vehicles for key software aspects such as promotion, education, and training to ensure sustainability. There are a number of success stories of such partnerships successfully reaching the poor in urban slums.[24]

[24] See The Water and Sanitation Program. 2006. *The Mumbai Slum Sanitation Program: Partnering with Slum Communities for Sustainable Sanitation in a Megalopolis*. September. esa.un.org/iys/docs/san_lib_docs/WSP-Mumbai.pdf.

Rural Water Supply and Sanitation

Rural Water Supply

Access to water supply infrastructure in rural areas is only a fraction of that in urban areas, even when urban coverage is already low by international standards. About 750 million people lack access to improved water supply. This reflects not only a failure to reach many people in rural areas but also, and perhaps more significantly, a failure to maintain water services for those who have been reached. For example, while hundreds of thousands of pumps and taps have been installed in developing countries over the past 30 years, with the support of international agencies, a large percentage of this infrastructure (almost 50 percent in SSA) is now inoperable. Several reasons for this unacceptably high failure rate have been identified, including inappropriate technology; poor construction; lack of community involvement and subsequent sense of ownership; poor community organization or cohesion; lack of follow-up support and/or training; the unavailability or high cost of spare parts, energy, and professional support services; and the drying up of source water. For many years, the failure rate had been attributed to technological reasons alone. It has now become clear that social and institutional factors play equally if not more important roles.

Community Management by Men and Women

In Guinea-Bissau, women have been recruited and trained as mechanics for maintaining hand pumps. They are favored over men because they are less likely to seek income elsewhere. Fifty-three percent of the water-point committees are women, with 20 percent of them having management functions beyond their traditional task of cleaning the pump surroundings.

Source: Gender and Water Alliance. 2006. "For Her It's the Big Issue." www.genderandwater.org/page/5124.

In rural communities, water supply systems are generally community managed and sanitation services are privately secured on a household level. Local groundwater is the most widely used source of clean drinking water supply, often replacing traditional surface water sources. A major factor favoring groundwater as a source for drinking water is that in its natural state it is more protected than surface water and can often be used without treatment.

A range of technical options exists for water supply, and households typically use more than one of these options. Some communities may be connected to a simple spring-fed gravity feed water distribution system. Others may be supplied by a well or surface water source pump with storage tank and piped distribution to standposts or individual yard tops or connection. More basic service is provided by hand-dug wells, wells with hand pumps, rainwater collection, or surface waters. Maintaining the future quality of these water supply sources is an essential element of any water supply project and entails protection from contamination by keeping users, animals, and dirty buckets out of the water source. This requires good design and construction of the abstraction facilities, combined with hygiene promotion and community action to maintain good practice. Pollution inflows to the source water also need to be controlled.

While there may be some disinfection provided for the piped supplies to ensure adequate water quality, generally water treatment is practiced on a household level, if at all, using physical and chemical techniques such as boiling, filtration, and chlorination. This is referred to as point-of-use treatment, and, in the short term, these household-level interventions, combined with safe storage, can immediately improve health. They target households that may have access to a drinking water supply but it is of poor quality.

Unlike in the urban setting, the primary management model for rural water supply service is not utility based but rather relies upon community management. In this model, the community is responsible for the operation of its own water service after the implementing Mission has left. Many communities struggle with their management tasks because they generally do not have the specialized personnel, transport systems, spare parts, supply chains, or communications networks that facilitate the successful, uninterrupted management of a water supply system. Poor operation and maintenance is also related to insufficient funds, lack of incentives for private-sector supply chains, external donor reluctance to finance operations and maintenance, and poor financial management systems on the community level. Some new management approaches include public–private partnerships for service delivery.

Rural Sanitation

Rural communities have less than half the sanitation coverage of urban areas (see Table B.12). If current trends persist, nearly 1.7 billion rural dwellers will still lack access to improved sanitation by 2015. Waterborne sewerage is not an option in rural areas. On-site sanitation is the only feasible option, applying the technologies discussed above for urban sanitation. Open defecation is practiced widely, with regional variations. Eliminating open defecation requires behavioral change. Community-led total sanitation is an innovative approach for mobilizing open defecation communities to build their own latrines.

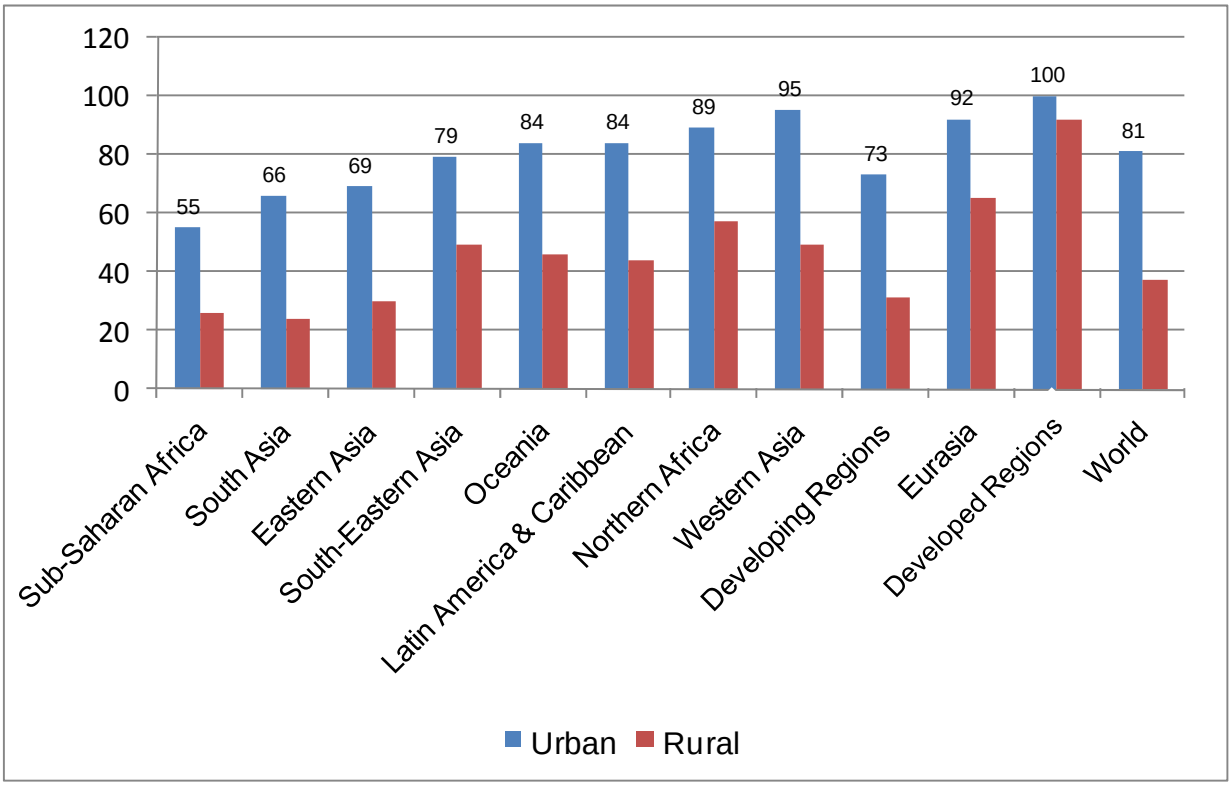
The challenges to expanding sanitation service include taking one-off community-based approaches to a regional or national level, and ensuring sustainability. As in urban settings, in rural areas the sanitation sector experiences low demand, low priority, and low visibility; fragmented institutional responsibility; a tradition of supply-driven approaches; inappropriate technical standards and norms; and lack of consensus on an approach. In addition, rural areas are less likely to attract qualified staff and have less fiscal power, lower literacy rates, weak media, and less-well-developed private and nongovernmental sectors. For households, sanitation presents relatively high investment costs, thus reducing demand. For communities willing and able to pay for sanitation systems in the long term, it is difficult to obtain financing for up-front capital.

Previous attempts to stimulate demand for sanitation have tended to concentrate on developing and promoting a particular latrine technology, subsidizing or providing free latrines, providing health education, or enacting or enforcing sanitation bylaws. Nowadays, sanitation projects are demand driven; are community based; are focused on the need to raise awareness; and emphasize the benefits of facility usage. Creating demand is a key approach to rural sanitation and is complemented by supporting the supply chain for products and services, promoting community-led total sanitation to eliminate open defecation, and promoting hygiene. Community Led Total Sanitation (CLTS) is an approach that centers on changing the sanitation behavior of whole communities. CLTS involves facilitating a process to inspire and empower communities to stop open defecation and to build and use latrines.

A significant obstacle to reaching the poor with rural sanitation has been the difficulty in scaling up these types of projects for rapid and large-scale provision of cost-efficient sanitation services without cutting back on project elements critical to sustainability and long-term social improvements.

After years of investments in rural water supply and sanitation systems, much has been learned about how to make them effective and sustainable. Key elements you should consider in programming include the following:

Rural Communities Have Less Than Half the Sanitation Coverage of Urban Areas



Rural Sanitation: Latrines

In its cheapest and most basic form, the pit latrine consists of a square, rectangular, or circular pit dug into the ground, covered by a hygienic slab or floor with a hole through which excreta falls into the pit. The latrine is covered by a shelter and fitted with a door and is situated away from water sources and some distance from the house. It requires little maintenance, despite the need for daily cleanliness. Technical options for sanitary facilities are ventilated improved latrines, double vault latrines, composting latrines, and the arborloo. A ventilated improved pit (VIP) latrine is a latrine that removes odors and prevents flies from breeding and escaping. Excreta is collected in a pit that has a vent pipe covered with a flyproof screen at the top. The compost latrine decomposes excreta, which then can be used as a fertilizer. It is used like a standard pit latrine, but additional ingredients such as soil and wood ash are regularly added. In an arberloo, once it is full, the latrine slab and superstructure are moved to a new pit site; the original pit is then topped up with fertile soil and a young tree is planted.

- Decentralizing management to an appropriate lower level, coupled with close community involvement in planning, financing, implementation, and operation, provides a solid foundation for sustainable services.
- Implementing rural water supply and sanitation within a broad development context allows institutions to respond to and support a range of community needs in a cost-effective and holistic manner.

- Actively engaging women in planning and establishing community-based management committees with a more equitable representation of women members and women in leadership positions results in better outcomes.
- Integrating sanitation and hygiene measures into rural water supply and sanitation projects ensures that health benefits from increasing water supply coverage are realistic.
- Addressing post-construction sustainability ensures that institutions, funds, and expertise are available to keep rural water supply systems viable and functional.

Small Town Water Supply and Sanitation

While urban and rural settings have their respective, relatively well-established approaches to maintaining water supply and sanitation services, small towns with populations from 2,000 to 200,000 have been relatively neglected. In this gray area, populations demand differentiated services but lack resources to manage and operate their water supply and sanitation systems. The urban utility model may not work due to size, but the community-based rural model is also inappropriate. Yet, getting it right is essential if service delivery to the poor is to increase, as one-third of the population of Africa and Asia lives in small towns where service provision is often characterized by sporadic government handouts for rehabilitation or expansion, followed by long periods of deterioration. Promising service delivery models for small towns of 2,000 to 50,000 may include water associations, ring-fenced municipal water departments, autonomous town water boards, small-scale private water companies,[25] and public–private partnerships.[26]

Hygiene Improvement and Promotion

Too often, the impact of water supply and sanitation interventions has been limited by the failure to understand and influence human behavior. Technology alone is rarely sufficient to solve the problem of achieving improved access to water supply and sanitation. In many instances, people have received latrines, improved water systems, or water treatment options but have not used them as intended. Lessons learned show that when water and sanitation projects do not take adequate account of individual and community behavior, the expected health benefits are not fully realized.

Hygiene improvement is an integrated approach combining access to hardware for water, sanitation, and household-level technologies; an enabling environment through policy improvement, public–private partnerships, and institutional strengthening; and hygiene promotion through behavioral change around three key hygiene practices: hand washing with soap, safe disposal of feces, and the safe storage and treatment of water in households at the point of use.

- **Hand washing with soap** is an effective means of preventing diarrhea when done properly and at critical times (after defecation, before eating, before handling food, after cleaning a baby's bottom, and before feeding a child) and can reduce the incidence of diarrheal disease by 35 percent to 47 percent. It has also been shown effective in reducing the incidence of acute respiratory infections by more than 40 percent.

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[25] The World Bank. 2007. *Principles of Small Town Water Supply and Sanitation: Part 1: Water Supply*. World Bank Working Note no. 13. December.

[26] The World Bank. 2008. *Engaging Local Private Operators in Water Supply and Sanitation Service*. World Bank Water P-Notes, Issue 5. June.

- **Safe disposal of feces,** using improved sanitation options such as latrines, has been shown to reduce the risk of diarrheal disease by 36 percent or more.
- **Simple household-level water treatment and safe storage** interventions can lead to dramatic improvements in drinking water quality and typical reductions in diarrheal disease of 30 percent to 50 percent or more. In many settings, both urban and rural, people have access to sufficient quantities of water but it is unsafe. Effective household water treatment and storage, if used correctly and consistently, can improve the microbiological quality of water. Low-cost technologies available for treating water in the home include chlorination and storage in an appropriate vessel, various types of filters, boiling, and solar disinfection.

Hygiene promotion encourages people to adopt safer practices, including the above, in the household. Such education is important because it provides the link between the technologies and their users by explaining why the new systems are so important and how to obtain the maximum benefits for their use. Hygiene promotion educates people about risky behaviors by looking at what motivates people to act, and builds on positive values such as those attributed to cleanliness. Social marketing can be a bridge between technology and behavioral change.

Hygiene promotion must begin before implementation, because it gives users the knowledge with which to make informed decisions. It helps, too, to create the demand necessary for all community-based activities. Because of social taboos regarding human excreta, demand for sanitation is often not openly articulated. But there are ways to ignite demand, as has been shown in the community-led total sanitation approach aimed at stopping open defecation.

USAID Programming in Water Supply, Sanitation, and Hygiene

In urban water supply and sanitation, the U.S. Government focuses on expanding services to cover the poor; providing services that are affordable and sustainable; improving utility performance; promoting hygiene; and supporting SSPs in partnerships with municipal authorities. Rural water supply activities include supporting community management of water supply systems, particularly for operation and maintenance; scaling up service delivery; and promoting household water treatment. Creating demand is a key approach to rural sanitation and is complemented by supporting the supply chain for products and services, promoting community-led total sanitation to eliminate open defecation, and promoting hygiene. In small towns, the U.S. Government seeks to develop appropriate service delivery models and financing. Additional activities include legal, regulatory, and governance reforms needed to operate and maintain such infrastructure. Some examples of good practice follow:

In urban water supply and sanitation, the USAID-funded ECO-Asia Water Supply and Sanitation Program has pioneered a strategy for utility twinning in Asia aimed initially at improving utility performance and expanding services. Through twinning, utility managers and staff share experience and gain practical knowledge. ECO-Asia facilitates twinning by identifying partners, developing twinning agreements and work projects, and supporting work project implementation. Partners work together to define needs and capabilities, roles and responsibilities, resource requirements, and expected outcomes. Examples of partnerships include King County Wastewater Management, USA, sharing with the Wastewater Management Authority of Thailand on optimizing urban water supply system operations and maintenance.

In Indonesia, ECO-Asia has improved the water supply and sanitation access of urban poor communities. Utilities in Manila and Phnom have demonstrated that community-run distribution systems can supply

bulk water provided by a water utility. In these schemes, the utility, which is prohibited legally from providing household connections to squatters, brings water only as far as community meters. The communities then take responsibility for construction of distribution piping to their homes. In this win-win solution, the poor benefit from lower connection costs and flexible payment options, while the water utility recovers costs and reduces administrative burdens.

In Marikina City, the Philippines, ECO-Asia is working with the municipal authority and the Manila Water Company to develop sustainable sanitation solutions that include septage management, infrastructure development, and citizen awareness. The project supports hygiene promotion campaigns, including special hygiene days for children and information outreach events. Manila Water Company is applying an innovative financing scheme to sustain sanitation services by levying surcharges on monthly water bills.

The USAID-funded Point of Use Water Disinfection and Zinc Treatment (POUZN) Project's objective in Uttar Pradesh (UP), India, is to ensure that households use a water treatment method at point of use (POU) in order to reduce the incidence of childhood diarrhea by engaging the private sector in collaboration with the public sector and the nongovernmental organization (NGO) community. The anticipated outcome is at least 100,000 households that regularly use one POU method. The project works through community-based self-help groups led by low-income women. POUZN gives target consumers a choice of options to ensure sustainable use of POU. The project ensured that microcredit was available to all those who preferred a water filter and obtained 76 percent overall POU use. POUZN is currently working with self-help groups and grassroots NGOs to reach 600,000 residents in 930 rural poor villages and 520,000 residents in 480 urban slums.

C REACHING THE POOR

POVERTY, WATER SUPPLY, AND SANITATION

Poverty is inextricably linked to water supply and sanitation. Of the 884 million people in the developing world living without access to safe drinking water, two-thirds live on less than US$2 a day. Almost 50 percent of the 2.5 billion people who lack basic sanitation fall below the same poverty line.[27] A large proportion of these poor live on less than US$1 a day and, as such, are considered extremely poor. Inequities between the rich and poor prevail and are particularly striking in Africa, where, for example, the richest are four times more likely to have access to improved sanitation than the poorest. Conversely, access to water supply and sanitation secures direct gains for the poor that help them exit poverty, such as improved health, averted health care costs, and time saved. On top of the costs of health care and lost productivity, the environmental degradation associated with water pollution due to poor sanitation hinders industrial growth, deters tourism, and compromises ecosystem functions and services—all of which affect the poor disproportionately.

Most people think that increasing access to water supply and sanitation services is intrinsically pro-poor. In fact, without a conscientious effort and concerted targeting, the impacts of many water supply and sanitation projects may not reach the poor. The extremely poor are often left out completely. Although the concept of pro-poor is easy to understand in the context of water supply and sanitation, it is difficult to obtain measurable criteria to identify the poor. In rural areas, where most of the world's poor reside, poverty is so prevalent that it is hard to single out the poor that should be targeted with improved services. In urban areas, the poor may be even harder to identify. Half of the people living in cities in the developing world live in slums, and of these 30 percent live on less than US$2 a day.[28] These poor are interspersed throughout slums and peri-urban areas. Many may live in informal settlements. Others live in pockets of poverty scattered throughout the city. More than two percent of urban populations are homeless. Also known as pavement dwellers, these people are economically poorer and socially more vulnerable than other urban poor. They are a socially diverse group, including children living on their own, the aged, the destitute, and the disabled.[29] Although often assumed to be vagrants, in fact the pavement dwellers often maintain a permanent presence but generally are not captured in poverty assessments, nor are they included in the sphere of influence of typical WASH projects.

What these guidelines mean by taking a pro-poor approach is to ensure at a minimum that access to water supply and sanitation is equitable and inclusive of the poorest of the population. Good practice is to specifically identify the poorest and most vulnerable, whether by means of testing or geographic targeting, and target them for improved access to safe drinking water and sanitation, whether this be through policy, technical, financial, or social interventions.

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[27] UNDP. 2006. Human Development Report.

[28] UN Habitat. 2000. *Pro-poor Land Management—Integrating Slums into City Planning Approaches*.

[29] Joshi, D., and J. Morgan. 2007. "Pavement Dwellers' Sanitation Activities—Visible but Ignored." *Waterlines*, 25(3). January.

There are three interrelated dimensions to poverty as it relates to drinking water and sanitation—health, livelihoods, and vulnerability. The health of poor people is affected disproportionately by contaminated water and poor sanitation services, setting up a cycle of illness and further impoverishment that has severe financial and personal costs. In developing countries, about 80 percent of health problems can be linked to inadequate water and sanitation.[30] Because poor people tend to live on what they earn on a daily basis and have no cash reserves to pay for a sudden illness, the loss of income and the inability to pay for the cost of treatment can push a family further into poverty and debt, thereby perpetuating the cycle of poverty.

Most of the world's poorest people, 800 million to one billion rural people, live in arid areas and depend directly on water resources for their livelihoods. These resources are generally common property and provide a significant share of food and household income for the poor. Pollution of surface- and groundwater resources directly translates into less food, income, and time for the poor. In rural areas, poor people have to work hard to get their water, often fetching if from a great distance and then using it sparingly. Time spent collecting water means less time available for productive activity on which one's livelihood depends. Household surveys in Kenya reveal that poor households there spend an average of 42 minutes daily collecting water, while the nonpoor spend a maximum of 15 minutes.[31]

Vulnerability is the third link between poverty and water supply and sanitation, and it takes several forms. Poor people are disproportionally at risk from environmental shocks and crises. Severe natural disasters such as floods, droughts, and hurricanes destroy or disrupt basic water supply and sanitation services. Changes in rainfall patterns and rising sea levels affect low-lying territories in developing countries most often inhabited by the poor. The poor are also the most affected by environment-based conflicts over scarce water resources.

Perhaps the most prominent aspect of vulnerability for the poor is exclusion from access to water supply and sanitation services. Many people assume that poor households do not access formal water supply and sanitation services because of price. However, research and practice consistently show a willingness on the part of the poor to pay for services, provided they are reliable and meet consumer preferences. In fact, the real problem is that the urban poor are particularly vulnerable to exclusion from formal services. They usually live in rapidly expanding, poorly planned, and illegal settlements with unclear property rights. Municipal utilities are often legally barred from servicing these areas. Geographic and technical constraints can render service delivery prohibitively costly. Most utilities have made efforts to provide a basic level of water service through public standpipes, but these services are often unreliable, inaccessible, and/or oversubscribed. Then, even when water and sanitation delivery is available, poor households may be unable to apply for a water or sewage connection without proof of a land title. When the expansion of networks is legally and technically possible, the formal private sector is often reluctant to provide services, because it perceives the poor to be high-risk clients unable to pay bills and liable to vandalize infrastructure. Moreover, many utilities do not understand who the poor are and what they can afford, and thus provide service levels based on technical standards rather than demand.

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[30] UN. 2000. Millennium Report.

[31] Gulyani, S., D. Talukdar, and R. M. Kariuki. 2005. *Water for the Urban Poor: Water Markets, Household Demand, and Service Preferences in Kenya*. Water Supply and Sanitation Sector Board Discussion Paper Series, paper no. 5. The World Bank Group. January. http://siteresources.worldbank.org/INTWAT/Resources/4602114-1203716020124/Discussion_Paper_5.pdf.

OBSTRUCTIONS TO ACCESSING IMPROVED SERVICES

Even if all the aforementioned hurdles could be overcome, the poor are still vulnerable to three cost-related issues that significantly obstruct their access to improved water and sanitation services.

First, because the poor resort to informal and illegal water supply service providers in the absence of access to the formal network, they typically pay higher prices for water than those serviced by the formal network. It is not uncommon for the urban poor to pay four to ten times more per liter than the metered rates of their wealthier neighbors.

Second, when access to the network is possible, the one-time connection fee tends to be prohibitively expensive for poor households. The poor, by definition, are unable to build up any reasonable level of capital to invest in infrastructure, supplies, or connection fees. In Uganda, household connections to the piped water supply cost about US$500, or more than a year's income—way beyond the means of a US$2 a day household. Similarly, a utility connection charge in Manila is equal to three months of income for the poorest 20 percent quintile.[32] When the connection fee is reasonable, the poor are pressed to meet periodic water bills often beyond their means.

The third cost-related problem is tariff structures that often work against the poor. Targeting the poor using tariffs is often difficult without also benefiting the provider's more affluent customers and hurting the financial viability of the service provider. Due to the high administrative costs of identifying and billing poor customers, many countries use varying designs of increasing block tariffs (IBTs), which increase the per-cubic-meter rate as consumption increases. Under an IBT, the first block of water used (usually 15 to 25 cubic meters) is provided to a household at a low price, often below the cost of service provision. Households that use a larger volume of water face higher prices per cubic meter. The IBT is based on the assumption that these users tend to be the higher-income households in a community.

In practice, IBTs have a mixed record in helping the poor gain affordable access to water supply services. First, the poorest households in a community generally do not have connections to the water network and thus cannot take advantage of an IBT. These households generally buy water from vendors who purchase (and then sell) water in the highest price block. Second, volumetric tariffs are only relevant where all connections are metered. Third, it is not always the case that higher-income households use more water than the poor—particularly where supply is limited to only a few hours per day. Fourth, it is fairly common for poor households to share water connections. A group of poor families thus might have collective consumption that pushes them into the highest-priced block of IBTs, leaving only wealthier households in the lower, subsidized blocks. Also, charging low tariffs that do not cover the cost of providing service creates a disincentive to connect poor customers, as the service provider will often lose money for every new customer it connects.

Other vulnerabilities affecting the poor relate to corruption and lack of a voice. Lack of legal status and poverty go hand in hand with political marginalization, low social status, and unequal power relationships—all features that make the poor vulnerable to corruption. Corruption within water governance exacerbates poor households' ability to access services. Water vendors, organized crime, corrupt public officials, and dishonest utility staff may have a vested interest in preventing better services

[32] Kayaga, S., and R. Franceys. 2007. "Costs of Urban Utility Water Connections: Excessive Burden to the Poor." *Utilities Policy*, 15: 270–277.

for the poor. For their part, in an attempt to reduce their vulnerability, the poor may resort to bribery to obtain a modest level of political protection and financial security and to access services otherwise unavailable to them.

Vulnerability is exacerbated by the weak organizational capacity of poor communities and their lack of voice. Municipal utilities and other service providers may be disinterested in the plight of the poor and instead focus on the middle class population. Without a voice, the needs of the poor are unheard or misunderstood.

PRO-POOR APPROACHES

While the constraints to reaching the poor with improved access to water supply and sanitation are formidable, they are not impossible to address. Much can and has been done to reach the poor. Some practical approaches are proposed below.

Common elements to successful pro-poor approaches are:

- Leadership and vision; that is, political will;
- Pro-poor governance, including a supportive policy and regulatory environment;
- Community engagement and ownership;
- Accessible financing alternatives; and
- Appropriate technology.

Tools and mechanisms have been developed to work with utilities to shift their focus to the poor, to help government agencies create the right mix of incentives for service providers to improve service, and to increase the voice of citizens in demanding better services.[33] Innovative approaches to address the lack of property rights have also been developed. Slum upgrading projects that address insecure tenure are one example of how water supply and sanitation can be integrated into other sector planning, such as urban development.

Reaching the Poor with Output-Based Approaches

Subsidies have traditionally been paid to help utilities cover their costs. The problem with this approach is that it remunerates the utilitiy on the basis of its costs, not its results. A better approach, especially when a private operator is involved, may be to make payment contingent on the provision of outputs. These outputs can include delivery of water to a household, connection of new households in poor areas, or treatment of specified quantities of wastewater to the required standards.

One example comes from Paraguay, where private operators are paid a fixed amount from a government fund for each new water supply connection. In Chile, the government assists low-income households by paying part of their water bill. Municipalities pay subsidies to private and public water companies from a national fund where water is supplied to low-income households. The central government allocates the subsidies to each region according to local tariffs and the estimated number of households likely to pay water bills greater than 5 percent of household income. The local municipalities assess eligibility for the subsidies, with the water company billing the recipient net of the subsidy amount and billing the municipality for the remainder.

Restrictions related to titling and land tenure can be waived and alternative methods found for reducing the associated risk. For instance, in Tanzania, despite the fact that 70 percent of Dar es Salaam is unplanned or informal, the utility has no legal constraint to developing water supply systems in these areas.

Affordability is a key to pro-poor approaches. The main ways to make services more affordable for poor people are through tariff structures, cross subsidies, and targeted subsidies. As previously discussed,

[33] For example, see Water and Sanitation Program. 2009. *Improving Water Supply and Sanitation Services for the Urban Poor in India*. March. http://www.wsp.org/UserFiles/file/SA_GUIDANCENOTES.pdf.

pricing policy is an important instrument for improving services to the poor. Tariff structures should help, not hurt, this population.

A common tool to reach the poor is a subsidy that is a form of financial assistance paid to an individual, a business, or an economic sector in order to achieve certain policy objectives. Subsidies are promoted on the basis of a number of types of arguments, including moral and economic. The IBT is a type of subsidy in that it bills specific customers only a portion of the cost of providing services. The use of public money to construct new infrastructure is one of the most familiar forms of subsidy. Paying for part or all of the cost of household latrines is common in rural areas. In urban areas, subsidies, in the case of sanitation, are used to pay for shared elements of networks, such as sewers.

A general problem with infrastructure subsidies is that inadvertent targeting may occur because particular groups, such as those with land tenure or those who are literate and can apply for subsidies, benefit disproportionately. A full or partial subsidy for infrastructure investments may be justified in reaching the poor as long as poor customers can pay tariffs that cover the costs of operation and maintenance.

Another type of subsidy for water supply entails the government subsidizing consumption directly by providing coupons to the customer or by making transfer payments directly to the provider on behalf of specific customers. In many developing countries, subsidizing access rather than consumption has proved to be more effective. Household connection fees, for example, may be subsidized. Several countries have introduced transparent, targeted subsidies for investments that expand services to the poor, including Colombia, Paraguay, the Philippines, and Uganda.

In the case of sanitation, subsidies have had several unintended negative consequences. Many subsidized latrines, for example, are unnecessarily expensive. Subsidies can also distort other sources of funding, stifle innovation, and redirect funds away from other high-priority social sectors.[34] Other subsidies simply are not sound financially.

Experience has identified several principles of smart subsidy design: Subsidies should achieve the intended policy outcome, reach the intended target group, be financially sustainable, and be implemented in a transparent manner. Additionally, pro-poor governance for basic services has been facilitated by organizing poor communities and giving them a voice. There are now examples from around the world of community-based organizations and their federations helping poor people take action on their own behalf.[35]

Adopting a pro-poor approach to water supply and sanitation also means paying attention to the appropriateness of the technology chosen. Standards may need to be revised and adjusted to deliver an output that responds to local needs and is affordable. An accurate assessment of consumer demand is necessary, and the users need to be consulted on the type and level of service desired. Flexibility in service standards provides incentives to experiment and to cut costs while meeting basic quality requirements. Coupled with a competition framework that allows a wide range of service providers to compete on a level playing field, flexibility can generate new technical solutions. Alternative service

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[34] Evans, B., C. van der Voorden, and A. Peal. 2009. "Public Funding for Sanitation: The Many Faces of Sanitation Subsidies: A Primer." http://www.irc.nl/page/49930.

[35] Water and Sanitation Program. 2009. "Global Experiences on Expanding Water and Sanitation Services to the Urban Poor." August. http://www.wsp.org/UserFiles/file/Accompanying_Volume_to_Global_Guidance_Notes.pdf.

delivery mechanisms that have been developed include public–private partnerships, prepaid meters, and water kiosks. These have met with varying degrees of success. For example, prepaid water meters allow households a free basic monthly allowance of a given quantity of water before shutting off automatically. Residents then have to pay for more water. While supported by some, this approach is not without controversy. In April 2008, a Johannesburg court found that forcibly installing prepaid meters denied people their constitutional right to water and that the free basic water allowance (calculated at 25 liters per person per day) was insufficient for township residents.[36]

PRO-POOR ACTIVITIES

Considering the obstacles to reaching the poor, the following activities are designed to be pro-poor.

Financing infrastructure that overcomes the physical, technical, and financial constraints to reaching the poor:

- Provide a range of affordable technologies for poor households.
- Include safe storage and point-of-use household water treatment and appropriate on-site sanitation.
- Build capacity to ensure sustainable operations and maintenance of systems that service the poor.
- Mobilize pro-poor financing for infrastructure improvements via any number of mechanisms, such as social responsibility funds, credit directed to providers of products and services, subsidies for household connections, and loans to individuals and households.
- Support innovative service delivery alternatives, such as small-scale providers, and facilitate public–private partnerships.
- Promote competition and encourage independent initiatives to improve access to services for the poor.
- Develop appropriate operational and service standards to meet the needs of poor consumers.

Giving a voice to the poor:

- Increase demand among the poor for water, sanitation, and hygiene services.
- Educate poor populations about the benefits of WASH services, including through local school projects and broader community outreach.
- Support communities in organizing connection campaigns, frequent collection of bills, and other activities that make household connections a feasible solution.
- Organize communities without access to piped services to appoint and negotiate with vendors to ensure fair prices.
- Apply gender equity and leadership approaches.
- Support innovative behavior change methods that target whole communities, such as social marketing for WASH services and products, sanitation marketing, and community-led total sanitation.

Strengthening political will and eliminating administrative and legal constraints:

[36] International Water and Sanitation Centre. 2008. "South Africa: Could Water Meters Be Unconstitutional?" January 22. http://www.irc.nl/page/38727.

- Strengthen utilities to embody common management principles that benefit the poor, such as accountability, transparency, and the participation of communities in decision making.
- Promote regulatory frameworks that account for the poor, such as providing a framework for competition so that a wide range of service solutions is possible; creating incentives (or obligations) for utilities to extend services; establishing a tariff level and structure that encourages higher access to services without jeopardizing financial stability; and establishing a framework to deal with consumer issues.
- Urge government, municipalities, utilities, and their partners to develop specific policies, strategies, and plans for improving access to service for low-income communities.
- Release bottlenecks in urban development policy, such as property rights in informal settlements.

Strengthening the capacity and accountability of service providers:

- Support policy with legislation and regulations that enable utilities to deliver services to informal settlements.
- Define rights to water, support efforts to increase knowledge of rights and service standards, and strengthen poor people's capacity to claim and enforce their rights.
- Promote the role of consumers, consumer associations, and community organizations that give voice to the poor.
- Improve monitoring and set transparent targets for access to sanitation and water for the poor.
- Incorporate pro-poor considerations into national and subnational action plans.
- Strengthen accountability between the state and civil society.

Pro-Poor Consultation Pays Off in Nepal and Colombia

When a private-sector participation contract was being considered for Kathmandu, Nepal, it was evident that the service providers knew little about their potential customers, especially poor households. There were conflicting opinions about the number of poor people in the service region, the type of service they were receiving, and the desired improvements. When the team implemented a project of surveys and consultations with local civil society groups, the results showed that many preconceptions were incorrect. For example, officials had argued that a heavily discounted lifeline block tariff was a good way to ensure poor people would benefit from the reforms. In fact, since only 51 percent of the poor had household connections to the water supply, this was not the case. The consultation process therefore recommended avoiding consumption subsidies and instead focused on expanding access for the underserved population.

In Colombia, national regulations require that water utilities bill monthly. In the town of Cartagena, the operator found that the billing regime made it difficult for low-income workers, especially those paid by the day, to manage bill payments. Through consultation, it became clear that if bills were sent twice a month, these households would find it easier to pay, benefitting both them and the operator. The regulator refused to adjust the national standards, but by working with community organizations that organized to collect payment twice monthly, the operator was able to achieve the same result. It was only through consultations and engagement with local organizations that the problem was identified and the solution developed.

Adapted from United Nations Environment Programme. 2007. "Half Full or Half Empty?" http://www.unepfi.org/fileadmin/documents/half_full_half_empty.pdf.

D CASE STUDIES

1. PERI-URBAN SANITATION AND HYGIENE IN PERISTAN

USAID ENGAGEMENT IN PERISTAN

Step 1:

Understand the USAID and National Context

Peristan is a water-scarce country with arid and semi-arid lands over 80 percent of its area and with less than 1,000 m^3 per capita of renewable freshwater supplies. Rainfall variability results in limited socioeconomic opportunities for the population of three million. The population is growing annually at 2.5 percent and livelihoods are threatened by the unsustainable consumption of regional natural resources. Productivity is decreasing and the potential for conflict over water and other resources is increasing. As a result of unemployment and hardship, rural populations are rapidly moving towards urban areas. They generally settle in informal squatter settlements on the outskirts of the city, beyond the reach of government structures and service delivery. The urban/rural population breakdown of 55/45 percent, respectively, reflects growing urbanization. The administrative structure of the country includes 10 regions, each with a city center.

The president of Peristan was a prominent regional spokesperson during the 2008 International Year of Sanitation setting a target, in line with the Millennium Development Goals (MDGs), to improve access to sanitation in the rural areas from 15 percent to 45 percent and in the urban areas from 40 percent to 70 percent, by 2015. She has recently demonstrated real commitment by establishing a budget line of USD 200,000 for each of the five years from 2010-2015.

USAID began working in the country in 1995, when Peristan's socialist president was overthrown and the country declared a democracy. The USAID mission staff totals 15 with four foreign services officers, six PSC, and five FSNs. The technical expertise in the mission includes health and food security, health systems strengthening and economic growth. From 1996 to 2009, USAID worked to expand access to quality healthcare and to strengthen the public health system in the country. It also supported projects to strengthen the role of civil society and rehabilitate infrastructure such as renovation of rural health posts and health centers, capacity building of health care providers to provide quality care and institutional and financial strengthening for health administrators and managers of health facilities. The country mission currently has a budget of $40 million. It is expected to have a $6 million earmark over three years for water supply, sanitation and hygiene programming.

The USAID Mission's departments include: 1) Democracy and Governance (10 percent) with most projects focused on strengthening capacity of key ministries, 2) Economic Growth (20 percent) focused on livelihoods and small businesses value chains, and 3) Health (70 percent). The USAID health portfolio over the past five years has focused on improvement in public, maternal and child health. USAID has worked closely with three partners–the Ministry of Health, an international NGO called Helps Inc., and a local Faith-based organization called Eyewatch. Technical specialists from the three organizations worked with community-extension workers (CEW) and the national health extension project to increase

community participation in rural and urban areas targeting basic healthcare services in 3 out of 10 administrative regions in the country, adjacent to one another (One, Two and Three). USAID's strategic plan for FY10 had been to move into three more regions in order to scale up the successes achieved from 2003-2008, thus sustaining investments in health. However, currently USAID is rethinking its strategic plan because there have been recent reports (2009) from Region One, of increasing diarrheal diseases in children under five. For the first time in 10 years the infant mortality rate has risen due to increased deaths from diarrheal diseases. This situation is threatening years of successful USAID programming in health in Region One.

THE WASH SECTOR IN PERISTAN

Step 2:

Describe the WASH Context

In all three USAID focal regions, rural populations are resettling in peri-urban settlements of the regional city center, in hopes of more opportunity and a better life. Blue Town is the city center of Region ONE is the largest city in the country and is representative of the other two regional city centers in the USAID sphere of health sector programming. Blue Town covers a total land area of 70,000 hectares and has experienced significant growth in population over the past five years. The current population of about 300,000 (district health census 2009) is up from 105,000 in 2004, largely as a result of urban migration. People are attracted to the city by its promise of employment. In the absence of any organized urban development strategy or adequate housing, the influx of people from far off villages has led to the rapid rise in squatter and informal settlements with make-shift living quarters. About 125,000 people, or almost half of the city's population, live in these peri urban areas. Delivery of basic services provided by the city has been unable to keep pace with population growth particularly in the peri urban area.

The national WASH context in terms of access to safe water and basic sanitation services is 65 percent and 35 percent, respectively, according to official figures for 2008 (Joint Monitoring Programme). The breakdown by urban and rural settings is 70/30 percent for water supply and 40/15 percent for sanitation. Peristan is off track to reach the MDGs for either water supply or sanitation by 2015. Strong political support for sanitation has recently catalyzed efforts to increase access to sanitation in the next five years.

In Blue Town, the local level WASH context is 50 percent of the residents connected to a piped water supply, mostly in the city core, and only 40 percent of the population connected to a sewerage system. In the peri urban areas, there are very few household connections to the piped water supply supplying the core city residents. The city provides several community water standpipes/kiosks but they service very few residents and the supply is inconsistent. Peri urban residents rely on private supplies of drinking water, usually from shallow wells, or water venders. The supply of water to community water standpipes is inconsistent. The supply by private venders is expensive and the quality unregulated. The supplies provided by the shallow wells, when monitored, usually do not meet microbiological drinking water standards. Extraction of ground water from the private wells is not monitored. It is observed that the wells have dried up in some areas, however, suggesting a depletion of groundwater resources. No one in Blue Town is connected to a sewerage system. Instead they use on-site sanitation facilities, private or public, or indiscriminately disposal of human waste, e.g. open defecation, "flying toilet." Children's feces is openly disposed of because households often have no other means of disposal and/or available latrines are not "child friendly." Public sanitation facilities are often dirty and unkempt. There is no system for removing the waste from private or public latrines. Local schools rely upon shallow wells for drinking water and are

lacking adequate sanitation facilities for the number of students (also increasing). There is no solid waste collection in peri urban areas.

IDENTIFYING THE WASH PROBLEM

Step 3:

Identify Priority WASH Problems

During the project identification process you conducted desk reviews of WASH sector reports, intensive consultation with national and local WASH authorities and experts, public consultation in the peri urban settlements, and donor consultation. In late 2008, you asked the USAID Child Health contractor to take the lead with a multi-donor forum including UNICEF and the World Bank Water and Sanitation Program tasked with investigation of Peristan's peri-urban water supply, sanitation, and health situation. In collaboration with the regional Ministry of Health, the multi-donor task force assessed the WASH and health situation in Peristan's peri-urban settlements, with a focus on Blue Town. Key findings of the task force and your review of other background information are:

Because of rapid growth of Blue Town, the onetime sufficient resource of 20 mostly female community extension workers (CEWs) in Region One has been unable to keep up with their work of educating and mobilizing the community on public health issues, disease prevention and environmental sanitation, and small garden farming. These issues are most significant in the peri urban settlements. CEWs note that there women are particularly vulnerable to the lack of sanitation, forcing them to wait for nightfall or early dawn to defecate and urinate in the open. With the lack of safe sanitation, women's dignity, safety and health are at stake.

Water supply service delivery is poor in peri urban areas. Access to sanitation coverage falls well behind access to water. Poorly functioning sanitation facilities have led to contamination of ground and surface waters in the peri urban area of Blue Town. The mayor of Blue Town has ignored the demand for improved services by peri urban residents.

Over the last 3 years there have been erratic outbreaks of water related diseases in Blue Town, hitting the peri urban settlements the hardest. Of particular concern are cholera and typhoid, which disproportionately affect children under five. These outbreaks resulted in increases in health center admissions and mortality in the peri urban settlements, and have negatively affected Blue Town's already modest health sector budget.

Peristan has made major reforms to its water supply and sanitation service provision through the passage of its 2002 Water Act. These reforms have been more successful in some regions than others. Region One seems to have had less success with WASH sector reform. This is evident by the poor financial situation of the sector, deteriorated infrastructure, unmet demand for services, citizen unrest with service delivery, and outbreak of WASH related diseases. There is no national sanitation policy in place..

These findings can be synthesized into the following problem statements:

1. Access to safe drinking water via household connections to the piped water supply network in peri urban areas is significantly lower than that in the city core. Thus peri urban residents rely upon alternative sources, often of poor bacteriological quality, for drinking, bathing, washing, cooking.

2. There is a lack of access to basic sanitation and adequate hygiene in peri urban areas. Lacking access to a sewerage system, sanitation in peri urban areas is a household responsibility. There is

low demand for improved sanitation facilities. Open defecation is practiced. Public and community toilets are scarce and often in disrepair. School attendance of girls has been observed to decline in areas where there are no school sanitation facilities. Hygiene practices including handwashing at critical times, safe storage of drinking water, and household level water treatment are virtually non-existent. The peri urban community sees no relationship between health, hygiene and sanitation. Poor hygiene in combination with inadequate sanitation facilities (and lack of a safe and reliable source of water) creates environmental health risks.

3. Outbreaks of water and sanitation related diseases are increasing in the peri urban areas. Human and financial resources for health extension and treatment are strained. Blue Town is the hardest hit.

ANALYZING THE WASH PROBLEM

Step 4:

Analyze WASH Problems and Select One for USAID Intervention

The six selection criteria were applied to each of the three problems identified in the WASH sector in Peristan. The analysis for each of the three problems is as follows:

Problem 1: Household connections to the city's piped water supply network are lacking in peri urban areas.
The costs for the city to expand the network to the peri urban area (Blue Town) are very high due to the high density of the region. Improved access to water supply fits the earmark but not the Mission's strategy, directly. There is no champion for improving access to drinking water because the NGOs once active in the sector have left Blue Town due to interference from the local government. The World Bank has a new project to finance expansion to an additional 50,000 per urban residents of Blue Town.

Problem 2: There is a lack of access to basic sanitation and poor hygiene in peri urban areas.
There are serious impacts on Peristan's development progress related to this problem. Poor sanitation and hygiene in the peri urban areas have led to bacteriological contamination of surface and ground sources of drinking water. Given the scarcity of water resources in Peristan, contamination of water supplies has serious negative implications for environmental and social development. Conflict over already scarce resources has erupted on the local level already. Health problems related to poor sanitation and hygiene conditions are significant and serious, e.g. cholera outbreaks. With no easily accessible household latrines, and a lack of public toilets, women wait to relieve themselves for inordinately long periods with negative health impacts. Improvements to sanitation would fit the earmark and relate to the Mission's health strategy particularly in regard to child health. Improved access to basic sanitation and improved hygiene will help ensure that the health gains realized by existing USAID health projects will continue to be realized. Improved hygiene relates directly to the Mission's health agenda and builds on the health sector programming of the past five years. Hygiene promotion, which will be required to create demand for sanitation, fits naturally within the mandate of the existing community health extension program and provides an opportunity to build on linkages between health, basic services, and education. While the mayor of Blue Town is reluctant to address these issues, the president of Peristan is a champion and on record as supporting improved access to sanitation. There is some history of community involvement on the topic which can be used to sway local officials, as needed. Sanitation can be an entry point for strengthening of civil society. UNICEF is active in school sanitation but there is no donor working on the household or community level to improve sanitation and hygiene.

Problem 3: Outbreaks of water and sanitation related diseases are increasing. The social costs of WASH related health problems in Peristan are large and growing. The burden of disease particularly for children under five, related to diarrheal diseases is growing and threatening to wipe out the gains in infant mortality realized in the past five years in part due to USAID's programs. These diseases significantly strain the budgets and human resources of the towns affected with the poor suffering disproportionately. Mothers are spending more time taking their children for care instead of working, children spend less time in school, the household budget is being taken up by health care bills. Interventions to improve maternal and child health are directly related to USAID's and the Mission's strategies and meet the earmark. The Ministry of Health, local and international NGOs, and civil society organizations are supportive of efforts to reduce WASH related diseases. The Faith based NGO, Eyewatch, is concerned about the status of children and is ready to support any program that invests in improving WASH practices in Blue Town and other peri urban settlements. They have pledged to leverage funding from their parent organization.

The above analysis using the six selection criteria leads you to conclude it would be prudent to tackle the lack of access to basic sanitation and poor hygiene in peri urban areas. This fits with the USAID and Peristan health strategies and the government's development progress. It also provides an opportunity for mobilizing local community and NGO commitment. The problem statement is: **There is a lack of access to basic sanitation and poor hygiene practices in peri urban settlements in Peristan.** By addressing this problem, the outbreaks of disease are expected to be reduced. While important, you determine the drinking water supply problems are best addressed by other donor programs.

DEFINING THE PROJECT COMPONENTS

You next conduct an analysis of the problem – lack of access to basic sanitation and poor hygiene in peri urban areas – to reveal its underlying core causes. You ask yourself why this problem is happening and consider six categories of possible core causes: 1) policy, legal and regulatory; 2) behavioral, 3) institutional; 4) financial: 5) infrastructure and 6) environmental. You apply the selection criteria to each of the core cause categories to determine the highest priority core causes.

Step 5:

Assess Causes of the Problem and Determine Those of Highest Priority

Policy, Law, and Regulation

Of the policy, legal and regulatory aspects it is the "policy" dimension that relates most to this problem. In the absence of a national sanitation and hygiene policy, there is no foundation on which to improve access to sanitation on a scale that matters. There is no policy that clearly assigns responsibility and roles for sanitation to any entity; no allocated budget for sanitation; and no targets or goals to achieve. There is no incentive for the water and sanitation service providers to extend services to anyone, and particularly absent are incentives to reach the poor. There is no policy to guide financing of the sanitation and hygiene sector. Furthermore, without a sanitation policy, the peri urban residents have no legal recourse to demand improved services from the city.

Applying the selection criteria to this cause, you determine that despite the President's stated goal to improve access to sanitation, Peristan's WASH development progress is obstructed by the lack of a policy to support the target set. Fortunately a sanitation policy, which also includes hygiene issues, is in preparation in the country by the Ministry of Health. Adoption of the new sanitation and hygiene policy

will provide the basis for new sanitation programs and services as well as a hygiene improvement framework. Strengthening of the policy framework for sanitation is consistent with the Mission's strategy.

Behavior

Many peri urban households resort to unsafe practices for the disposal of human feces. There is low demand for improved latrines because peri urban residents have other, higher priorities. Each household does not have access to its own latrine. This is due to cost factors, lack of demand, and technical difficulties serving some areas. Informal slumlords contribute to the situation when they are either unaware and/or noncompliant with building codes and regulations around ventilation, drainage, safe water and sanitation. Where there is willingness to pay for improved sanitation services, there are not always adequate skills, services and products available. Soap, for instance, is not readily available or affordable. On site latrines an underlying factor related to the existing hygiene practices, or lack thereof, is a basic lack of knowledge about the links between hygiene, sanitation and health. In addition there is a lack of social norms to reinforce positive hygiene and sanitation practices. Lack of sufficient water resources also contributes to poor hygiene. In a water scarce region where it is difficult and costly to secure water, and it is necessary to haul water for some distance, it is uncommon to allocate water for hygiene and handwashing on a household level. Household level behaviors such as treating unsafe drinking water prior to use are unknown or not practiced. Handwashing is non existent. Households resort to storing drinking water (which they secure from kiosks and public standpipes when available and/or shallow wells or private vendors) in their homes due to the inconsistent supplies at the public water standpipes and these supplies become contaminated when not safely handled. Thus poor sanitation and hygiene, even if the drinking water supply is safe at its source, becomes contaminated at the household level.

The health outcomes which would support continued growth and development in Peristan rely upon the uptake of improved sanitation and hygiene behaviors. Interventions to address these behaviors are consistent with the earmark and directly related to USAID's health programming in Peristan. The Ministry of Health is fully on board to refocus the work of the CEW's and the NGOs are supportive of hygiene promotion and education. You decide that addressing the core cause of behavioral issues and helping people adopt healthy behaviors and practices in relation to drinking water and sanitation, although a complex and difficult endeavor, is essential in order to realize USAID's health objectives in Peristan.

Institutions

The institutional organization of the sanitation sector is weak. The agencies responsible for water service provision also provide sanitation services to the core city largely through a sewerage system but the peri urban communities are not connected. City authorities cite the expense of extending services to peri urban areas as one reason for inaction. Since there is no policy framework in place for sanitation, no institution takes on sanitation in the peri urban areas. Informal service providers fill the gap to some extent, but their activities are unregulated, uncoordinated, and haphazard.

The impact of this core cause on Peristan's development progress relates to the overall impact of poor WASH conditions as described before. Addressing institutional issues directly would require major reform of the agencies responsible for service delivery which is beyond the current scope of USAID's Mission. While the peri urban residents are pressing for improvements in WASH service delivery, their primary concern is with water supply not sanitation. Other donors are better positioned to press for WASH sector reform. The World Bank project to extend water supply to the peri urban areas is conditional to WASH sector reform.tutional core causes. Although institutional issues are an important

aspect of WASH and service delivery, you decide that this is best approached first by establishing a policy framework to guide the institutional approach. There are other avenues USAID might take in a WASH project that will indirectly impact the institutional core causes, while supporting the objectives of the mission, e.g. creating demand for sanitation.

Finance

On a city level, the local authorities maintain they do not have the financial resources to expand sewerage services to the peri urban areas. In fact, there are insufficient financial resources to pay for the operation and maintenance of the few existing public and community toilets. This is due in part to an ineffective tariff structure and low collection rates. Peri urban residents do not have sufficient funds to install toilets nor can they afford pay for use public toilets, as currently operated. In the absence of a sanitation policy, there are no directives for sanitation subsidies No household level loans are available through either local banks or NGO lending. Local entrepreneurs who might fill the gap in sanitation service delivery are also limited in the extent of their services by lack of finance. There is an added financial dimension to the problem in the peri-urban areas. The 2009 Blue Town budget allocations have been eaten up by increased admissions to health centers and the fiscal demands of interventions to treat the cholera outbreaks.

Poor financial management of the WASH utilities contributes to the overall poor performance of the sector and presents obstacles to development. Tackling financial reforms may involve increasing tariffs and collection rates. Both require political will and commitment not currently present in Blue Town. Improving the financial situation of the local authorities to provide sanitation services must be rooted in WASH sector reform which is outside the scope of the Mission's strategy. However it is tied in to other donor programs that will extend service delivery for water supply and require overall WASH sector reforms.

Infrastructure

Sanitation infrastructure in the peri urban areas is, by default, a household level responsibility with on-site basic latrines the starting point. Households construct these latrines themselves or else engage an informal small scale service provider. Sine this is an ad hoc endeavor, there are no technical standards applied and no regulation of construction or maintenance. As a result, the basic on site household systems, usually pit latrines, are poorly designed, constructed, and maintained. The public toilets provided by Blue Town authorities were constructed without the input of the communities. Thus the location, design, and cost per use, were not vetted by the local residents. Public facilities are not equipped for use by small children. There are no handwashing facilities. There is no operation and maintenance plan in place for the public toilets. They are either underutilized and/or out of order. There are no official provisions for fecal sludge removal and treatment. Opportunities for recycling and/or reuse of human excreta are missed – latrine designs do not incorporate ecological sanitation. Most public facilities are in a state of disrepair. Open defecation is widely practiced. School sanitation facilities are poor.

Infrastructure for the safe disposal of feces and basic sanitation services is a key element of development and in its absence, as has happened in Peristan, the health of the entire population and the environment are at risk. Contamination of water resources because of inadequate environmental infrastructure poses a significant threat to the economic development of Peristan, a water scare country. Improved access to basic sanitation services, a USAID objective and earmark, requires appropriate infrastructure options, missing in Peristan. While large scale sewerage infrastructure is beyond the scope of the USAID strategy, on-site household level sanitation infrastructure meets the earmark and is in line with the Mission's

strategy to improve maternal and child health. Peristan's presidential commitment to increase access to basic sanitation supports interventions in infrastructure. Interventions in sanitation infrastructure would support other donor programs in the WASH sector.

Environment

Local environmental protection laws are not being enforced. Indiscriminant and unregulated dumping of human wastes into the surrounding environment is contaminating land, soil, and water resources. Poorly functioning pit latrines in household and public locations contribute to contamination of the local environment. Inappropriately sited pit latrines contaminate the household wells used for drinking water. There are no solid waste collection services. Over extraction of ground water resources is evident.

The ongoing contamination of land, soil, and water resources by human wastes poses a significant threat to the economic development of Peristan, a water scare country reliant upon its natural resource base for growth. While the Mission has not actively engaged in protection of the water resources in Peristan, this is within its scope. There is no national or local advocate for environmental protection, water conservation, or improved water shed management, despite the scarcity of water in Peristan. There are no donor activities supporting the environment sector.

Based on the analysis, the core causes of the problem best addressed by USAID are policy, legal and regulatory; behavioral; and infrastructure:

- **Policy, Legal and Regulatory.** You decide that USAID should support further development of the national sanitation and hygiene policy and actively engage in building capacity for its implementation. Supporting the policy framework will have a spill over effect in improving the institutional, financial and environmental core causes of the problem.
- **Behavioral .** You choose behavioral core causes as a priority because no sanitation project can be successful if people do not use the services and facilities provided consistently and correctly.
- **Infrastructural .** Peristan's citizens may have the protection of a sound national sanitation and hygiene policy and may adopt behaviors that reduce environmental risks to their health, but if they don't have access to basic sanitation and hygiene infrastructure it will be impossible to realize the gains that improved sanitation and hygiene can bring about. You decide that USAID should support improvements to basic sanitation and hygiene infrastructure.

Each of the three selected core causes is important to the continued economic development of Peristan; fits with the the USAID and Mission stratgies; is within the ability of the Mission and Country to fulfill; has a champion in country; is supported by Peristan's president; and complements or builds on other donor programs. The Mission's existing working relationship with the Ministry of Health, the key implementing agency for hygiene interventions, will facilitate the interventions in the policy and behavioral issues.

DEFINING THE PROJECT COMPONENTS

To address the problem of a lack of basic sanitation and poor hygiene practices in peri-urban areas, you organize your WASH project design by selecting project components aligned with the three problem core causes.

Step 6:

Organize the Project into Components

Core Cause	Component
Policy, Law, and Regulation: The policy framework is missing but in preparation. Policy framework not well thought through or clearly articulated. WASH legislation incomplete or outdated. Regulatory structure not well defined or supported with standards and enforcement procedures.	Encourage Policy, Legal and Regulatory Reforms
Behavior: Inconsistent or inadequate sanitation and hygiene practices and coverage	Promote Improved WASH Behaviors
Infrastructure: Inappropriate technology choice or design, poor quality construction and materials, lack of basic infrastructure	Fix Infrastructure and Technology Problems

PROJECT ACTIVITIES

To address the problem of basic sanitation and poor hygiene practices in peri-urban areas you selected three project components:

- Encourage Policy, Legal and Regulatory Reforms
- Promote Improved WASH Behaviors
- Fix Infrastructure and Technology Problems

Step 7:

Select Project Activities

Using Annex D of the guidelines, you selected activities to support the objectives of each of the three project components. Note the two shaded activities. One comes from another core cause section and reminds you not to be limited by the categorization process used in Annex D. The other is not included in Annex D but responds to the local situation, i.e. a new policy is about to be put in place, Peristan needs assistance in start-up of its implementation.

Core Cause	Project Component	Selected Activities
Behavior: Inconsistent or inadequate sanitation and hygiene practices and coverage	Promote Improved WASH Behaviors	▪ Apply proven methods for social mobilization: social mobilization methodologies apply a participatory approach to engage populations to identify problems, solutions and actions'. Improved sanitation and hygiene practices are best achieved when solutions are reached using participatory approaches. ▪ Promote household drinking water treatment (Point-of-use (POU) treatment) through Private markets and public channels: Treating water at the POU reduces the risk of diarrheal disease by 30-40 percent. A variety of methods exist and allows households to decide which best fits its needs and economic circumstances. ▪ Sanitation marketing: Harness the power of the nascent market place to catalyze household uptake of sanitation services and products. Work with the private sector to make the desired technical solutions available. Develop financial instruments to enable a household to purchase sanitation goods and services they desire. Work with the government to support the market through policy, norms, and promotion. ▪ Build public private partnerships for handwashing with soap: engage the private sector in improving the health of the public through making available affordable products (e.g. soaps and tippy taps) and messages. ▪ Promote sanitation and hygiene through linked messaging: Work with Blue Town and other local governments to link messages where appropriate on health promotion, sanitation laws ▪ Encourage Small Scale Private Sector Providers(SSPs) for Sanittaion: Support new policies/regulations which bring SSPs into the formal delivery of sanitation services; provide microfinance to help SSPs establish their business; provide training to SSPs in design and construction, and customer relations.
Policy, Law, and Regulation: Policy framework not well thought through or clearly articulated.	Encourage Legal, Policy, and Regulatory Reform	▪ Support development of national sanitation and hygiene policy: Support the development of a new sanitation and hygiene policy. Ensure there are mechanisms to meet the needs of peri-urban areas and that the policy is easily accessible to all residents. ▪ Assist the Ministry of Health with the roll out and implementatio of the new policy. This could include training, capacitiy building, development of related laws and regulations, and enforcement activities.
Infrastructure and Technology: Inappropriate technology choice or design and poor quality construction and materials	Fix Infrastructure and Technology Problems	▪ *Select and build appropriate household sanitation facilitiess:* Partner and work with NGOs and local council to help community members select appropriate, affordable household latrines. Provide training to household members or local masons to construct and maintain household latrines. Develop cost recovery mechanisms for construction, O&M of household latrines. Include fecal sludge management. ▪ *Introduce community and public toilets in slums and peri-urban settings:* Partner and work with NGOs and local councils to cost share construction of community latrines; provide training to interested local masons and use social mobilization technique to introduce and arrive at consensus on minimum payment for use and maintenance of public toilets.

CROSS-CUTTING THEMES

Now that you have the project components and activities in place, you consider the project design one more time in terms of eleven "Cross-Cutting Themes (CCT)" representative of USAID priorities and interests. You decide that the following seven CCTs are relevant to the new WASH project based on your understanding of the problem, core causes and activities; and your local conditions.

Step 8:

Determine the Most Relevant Cross-Cutting Themes

Build Capacity: The new WASH project supports new policies and approaches that will require capacity building for successful implementation.

Cultivate Leadership: Working in sanitation, which is often the "poor cousin" to water supply, requires that leaders emerge and be trained in new approaches and techniques.

Strengthen Civil Society: Inadequate sanitation and hygiene are hallmarks of poverty and slum or peri urban conditions. Lack of legal status, weak organizational capacity, and poverty go hand in hand with political marginalization, low social status and unequal power relationships. Without a "voice," the needs of the unserved in the peri urban areas have gone unheard or been ignored. By strengthening civil society, the unserved can be brought to the decision making table.

Encourage Consultative Stakeholder Participation: The relationship between the local politicians and the peri urban communities is poor and the NGOs which supported consultative planning have been challenged by local authorities. Not surprisingly, existing sanitation facilities in Blue Town demonstrate that the community to be served was not involved in the identification, planning, or implementation of service provision.

Implement a Gender Equity Strategy: It is documented that impacts of inadequate sanitation and hygiene disproportionately impact women and children in Blue Town.

Adopt Pro Poor Strategies and Policies: There is no requirement that the city authorities provide sanitation services to the poor in Blue Town. There are no incentives to do so and no pro poor sanitation targets against which to be held responsible. The poor are disproportionately impacted by the lack of access to sanitation.

Implement a Results, Reporting, and Evaluation Program: Reporting on the The Paul Simon Water for the Poor Act includes the number of people in a target area with access to improved sanitation facilities as a result of USG assistance – an indicator of the success of the new WASH project.

Step 9:

Incorporate the Cross-Cutting Themes into the Design

Cross-Cutting Theme	Meeting Requirements
Build Capacity	The project includes an activity to build the capacity to implement a new national sanitation policy. It also works with NGOs and small scale providers to increase their capacity to deliver sanitation and hygiene services. Bidders will be requested to present a training program with specific targets and competency levels.
Cultivate Leadership	Training for peri urban, district, municipal leadership on their roles i WASH. Training will focus on management skills, customer accountability, and governance.
Strengthen Civil Society	The civil society entities that could play a role in the new project need to be identified. Bidders will be requested to present a strategy for involving civil society in the project.
Encourage Consultative Stakeholder Participation	Bring local users/consumers into activities related to improved service delivery, promotion of hygiene behavior, technology choice, and the policy framework. A forum for stakeholder participation will be established
Implement a Gender Equity Strategy in Water, Sanitation, and Hygiene Programs	Ensure women's participation in selection of technology Target women heads of households for microfinance activity Support women owned businesses in activities to help small scale providers. Women will be targeted in leadership training.
Adopt Pro-Poor Strategies And Policies	Require that bidders submit plans for ensuring that the poor receive access to services. This will include affordability strategies for household connections, hook ups, and services. Consider pro poor subsidies. Propose activities that offer employment to the poor
Implement a Results Reporting, Monitoring and Evaluation Program	Bidders must present monitoring and evaluation systems that will report on progress, outputs, and impart indicators for relevant earmarks

WORKSHEET 1
STEP 4: IDENTIFY THE WASH PROBLEM

Problem No. 1

Problem Statement: Households in peri-urban areas lack connections to the city's piped water supply network.

Priority Criteria	1 Relative Importance	2 Assessment	3 Comments
Impact on the Country's Development Process ▪ At this early stage, you will want to consider the overall impact of the problem on the nation's political, economic, and social standing. ▪ How would addressing this problem improve the country's development or progress? ▪ Are the impacts among the country's most important? Does the problem affect large segments of the population, a large region or major cities? ▪ Or would its impact be focused on a small group and what does that mean for issues of equity within the population?	1 ② 3	○○○●○	Provision of basic services such a safe drinking water supplies is essential for economic development. Peristan is off-target for reaching the water MDG. The poor residents of peri-urban settlements are the most impacted. This is a large and growing population.
Fit with Agency and Mission Strategies ▪ Does this problem explicitly fall within the priorities of the Agency and the Mission? ▪ Is it driven by an annual earmark? ▪ Can the Mission use a project on this problem to fulfill earmark requirements? ▪ How does it support the Paul Simon Water for the Poor Act? ▪ Is this an addition to the Mission's strategy? ▪ Is it likely to gain support in USAID/Washington? ▪ Is it a priority of the Water Team? ▪ Is the implementation area with the Mission's high priority geographical areas in the country?	1 2 ③	○○○○●	This problem fits the USAID and Mission earmarks. Increasing coverage of water to peri-urban residents would meet both WfPA objectives but also support the health objectives of the Mission's strategy.
Ability of Mission to Address the Problem ▪ Does the Mission have a competitive advantage working in this area, when compared with the work of other offices in the Mission or of other donors? ▪ What strengths does the Mission bring? ▪ Are there skills in the Mission to support the project, including new direct hire staff who may have familiarity with the technical issues in other countries? ▪ Does the Mission have established relationships with the sectoral institutions responsible for dealing with the problems? ▪ Are there adequate budget and time to tackle the problem? ▪ Can the problem link to other Mission projects or other USAID regional projects to leverage their resources? ▪ Are there in-country expertise to provide technical services during design and implementation, in the form of consulting firms, NGOs, and individuals?	1 ② 3	○●○○○	The Mission has no dedicated staff for drinking water supply or conservation and protection of water resources. The problem links well to the Mission's health program, in theory, but in practice it is more likely the poor sanitation that is threatening health gains, not access to drinking water. There are readily available vehicles to access for procurement.

Priority Criteria	1 Relative Importance	2 Assessment	3 Comments
▪ Are there vehicles that the Mission can access for procurement?			
Champion in Mission and Country ▪ Is there genuine interest in and support for the tackling the problem? ▪ How senior is that support? ▪ What deep in the support? ▪ Is there pressure from the within or outside the government to work on the problem? ▪ Is there narrow or broad public support to address the problem? ▪ What is the government's response to this outside support—is it welcomed or seen as agitation? ▪ Does this problem carry a moral imperative—that it would be the right thing because it is at the heart of slow development in the country.	① 2 3	○●○○○	Some local NGOs have supported community endeavors to secure improved access to drinking water. However, they have left Blue Town when they could not get local political support.
Political Will ▪ What is the evidence that the government would support the work? ▪ Is it a stated priority? ▪ Are there convincing counterparts to work with? ▪ What is the Mission's history working with them? ▪ How transparent or corrupt are the potential partners? Is there funding from the government to contribute to the solution? ▪ Have any potential solutions between translated by the government into recurring budget line items?	① 2 3	○●○○○	National government is focusing on increasing access to sanitation not drinking water. The local authorities have ignored residents' pleas for improved services. No moral imperative is evident.
Other Donor Efforts ▪ Have other donors worked on the problem? ▪ If so, would they be good partners? ▪ Would they welcome a partnership with USAID? ▪ If the problem is being addressed by others, is there a legitimate role that USAID can lay claim to? ▪ Or would anything USAID does be a duplication? Have donors already carved out regions of the country they claim? ▪ Or are there genuine opportunities for partnership with other donors? ▪ And could this partnership be carried out through an existing coordinating mechanism? ▪ If not, would other donors be open to creating this kind of mechanism?	1 2 ③	○○○○●	The World Bank is investing $10 million in water supply infrastructure and institutional capacity building in service delivery in peri-urban areas of Peristan. They are promoting some key WASH reforms that will have significant impacts on improved service delivery and accountability. There are opportunities to partner with the Bank either in water supply itself, or to complement their work by USAID tackling sanitation.

WORKSHEET 2
STEP 5: DEFINE THE COMPONENTS

Problem Statement: Fast growing peri-urban areas in Peristan lack access to basic sanitation and hygiene.

Core Cause	Selection Criterion		Comments
Policy, Law, Regulation	Impact on the Country's Development Process	1 2 (3) 4 5	The health and environmental costs of the poor sanitation and hygiene situation in peri-urban areas are already evident and will only increase if nothing is done to improve the situation. A national sanitation and hygiene policy is being developed, and will be implemented, by the Ministry of Health. Support for both the development of the policy and capacity building for its implementing will be largely within the Ministry of Health. Thus, the Mission's longstanding and positive working relationships with the national and local level health authorities will facilitate project success. On the national level, the support of the President is key to working in the sanitation sector. The lack of commitment and interest by local level authorities needs to be addressed. It can be overcome, in part, by giving a voice to and empowering to the peri-urban residents and local NGOs. No donors are working to strengthen the policy, law or regulatory framework in sanitation and hygiene.
	Fit with Agency and Mission Strategies	1 2 3 (4) 5	
	Ability of Mission to Address the Component	1 2 3 (4) 5	
	Champion in Mission and Country	1 2 3 4 (5)	
	Political Will	1 2 (3) 4 5	
	Other Donor Efforts	1 2 3 (4) 5	
Behavior	Impact on the Country's Development Process	1 2 3 4 (5)	Poor sanitation and hygiene behaviors practiced in peri-urban areas contribute significantly to environmental health risks. As a result, the gains from USAID's health sector interventions are losing ground. USAID has extensive experience in addressing sanitation and hygiene issues on a community and household level. While the President supports increased coverage for sanitation Infrastructure, she is not aware of the linkages between sanitation and hygiene behaviors. The project will need to ensure that national and local authorities underside the importance of the "software" of sanitation.
	Fit with Agency and Mission Strategies	1 2 (3) 4 5	
	Ability of Mission to Address the Component	1 2 (3) 4 5	
	Champion in Mission and Country	1 (2) 3 4 5	
	Political Will	1 (2) 3 4 5	
	Other Donor Efforts	1 2 3 (4) 5	

Core Cause	Selection Criterion		Comments
Institutions	Impact on the Country's Development Process	1 2 3 4 5	Currently, the institutional framework for sanitation is vague, thus exacerbating the development problems mentioned above. However, the new national sanitation and hygiene policy is an opportunity to clarify responsibilities for overall sanitation as well as peri-urban service delivery. Strengthening the institutional framework and Peristan's ability to deliver services is complex, involves numerous agencies and actors, and demands reform of many institutional functions. Neither the national nor the local governments have indicated support of broad WASH sector reform. The World Bank's support to the water sector is contingent on implementation of several reform measures that would positively impact the sanitation sector. The Peristan Peri-urban Sanitation and Hygiene Project should benefit from some of these reforms, including improved cost recovery and collection. These improvements could translate into more funds for sanitation improvements.
	Fit with Agency and Mission Strategies	1 2 3 4 5	
	Ability of Mission to Address the Component	1 2 3 4 5	
	Champion in Mission and Country	1 2 3 4 5	
	Political Will	1 2 3 4 5	
	Other Donor Efforts	1 2 3 4 5	
Finance	Impact on the Country's Development Process	1 2 3 4 5	A lack of finance underlies the lack of uptake of improved sanitation and hygiene practices. It is a significant barrier to expansion of services to the poor. The draft policy framework could introduce new financing options for a range of stakeholders There is no national or local champion for reforms to address financial management. Increasing taxes or collection rates is politically unpopular and not supported on a national or local level. The World Bank Water Supply Project in Peristan will require full cost recovery and this will spur financial reform. This is beyond the scope or capacity of the Mission.
	Fit with Agency and Mission Strategies	1 2 3 4 5	
	Ability of Mission to Address the Component	1 2 3 4 5	
	Champion in Mission and Country	1 2 3 4 5	
	Political Will	1 2 3 4 5	
	Other Donor Efforts	1 2 3 4 5	
Infrastructure	Impact on the Country's Development Process	1 2 3 4 5	The coverage of peri-urban residents with either household or community level sanitation infrastructure is well below the national urban average and holding back progress on reaching the sanitation MDG. Peri-urban residents are in a vicious cycle. Poverty limits their demand for improved sanitation services while poor sanitation and hygiene are taking a huge toll on household income due to health care costs, inability to work, and depletion of natural resources. Lack of demand limits private sector initiatives and entrepreneurs who otherwise might fill the service delivery gap. Creating a demand through sanitation and hygiene promotion is only effective if the sanitation and hygiene sanitation and services are available. The President supports increased sanitation coverage and her interest will catalyze resources for infrastructure. Other donors are working on school sanitation behaviors and infrastructure. There is no donor addressing peri-urban sanitation issues.

Core Cause	Selection Criterion		Comments
Environment	Impact on the Country's Development Process	1 2 3 4 5	The depletion and contamination of water resources in a water scarce country can significantly derail economic growth and development and exacerbate existing political tensions. The Mission and USAID/Washington have expertise and experience with protection of water resources. There is no national champion for protection and conservation of water resources. No other donors are working directly on environment related issues.
	Fit with Agency and Mission Strategies	1 2 3 4 5	
	Ability of Mission to Address the Component	1 2 3 4 5	
	Champion in Mission and Country	1 2 3 4 5	
	Political Will	1 2 3 4 5	
	Other Donor Efforts	1 2 3 4 5	

WORKSHEET 3
STEP 7: SELECT ACTIVITIES TO IMPLEMENT

Component	Activity	Selection Criterion						Comments
		Impact on Country's Development Process	Fit with Agency and Mission Strategies	Ability of Mission to Implement the Activity	Champion in Mission and Country	Political Will	Other Donor Efforts	
1. Strengthen the Policy Environment for Sanitation and Hygiene	Support development of national and sanitation and hygiene policy	1 2 ③	1 2 ③	1 2 ③	1 2 ③	1 2 ③	1 2 ③	Meeting the sanitation MDGs requires that an underlying policy framework be in place and implemented. Focusing on sanitation and hygiene will support the Mission's health agenda. The framework will support objectives of other donor WASH programs.
	Encourage Small Scale Private Sector Providers (SSPs)	1 ② 3	1 ② 3	1 ② 3	① 2 3	① 2 3	1 2 ③	SSPs are already playing a major role in filling the gaps in service delivery. Legitimizing their initiatives will help improve access to sanitation while stimulating the local market.
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	

Component	Activity	Selection Criterion						Comments
		Impact on Country's Development Process	Fit with Agency and Mission Strategies	Ability of Mission to Implement the Activity	Champion in Mission and Country	Political Will	Other Donor Efforts	
2. Sanitation and Hygiene Promotion	Apply proven methods for social mobilization	1 ② 3	1 ② 3	1 2 ③	① 2 3	1 2 ③	① 2 3	Social mobilization is important to bring about behavior change. USAID has experience with these activities. The political will to improve sanitation may not extend to the "software" of sanitation. No other donors are engaged in these activities.
	Promote household drinking water treatment	1 ② 3	1 2 ③	1 2 ③	① 2 3	① 2 3	1 2 ③	Point of use (POU) treatment is an area of expertise for USAID and is a proven intervention to improve health. Local and national authorities are not aware of these linkages. POU can fill the gap while donor projects for water infrastructure are in implementation.
	Sanitation Marketing	1 2 ③	1 2 ③	1 2 ③	① 2 3	1 2 ③	1 ② 3	Creating a demand for sanitation is needed as none exists. USAID has expertise in this area. It is consistent with the Mission program to improve child and maternal health.
	Build Public Private Partnerships for hand washing with soap	1 2 ③	1 2 ③	1 2 ③	① 2 3	① 2 3	1 2 ③	Handwashing is a key element to improved health and demonstrably cost effective. USAID has expertise in this area; local authorities may need to be convinced of its importance.
	Promote sanitation and hygiene through linked messaging	1 ② 3	1 2 ③	1 2 ③	① 2 3	① 2 3	1 ② 3	Sanitation and hygiene can easily be incorporated into the ongoing health extension workers' programs. National and local authorities may need to be convinced and trained.

Component	Activity	Selection Criterion						Comments
		Impact on Country's Development Process	Fit with Agency and Mission Strategies	Ability of Mission to Implement the Activity	Champion in Mission and Country	Political Will	Other Donor Efforts	
3. Rehabilitate and Expand Household and Public Sanitation Infrastructure In Peri Urban Areas	Select and build appropriate household sanitation facilities	1 2 ③	1 2 ③	1 2 ③	① 2 3	1 2 ③	1 2 ③	Improved sanitation can have significant development impacts, e.g. health, economic, social and environmental. Improved health is consistent with the Mission agenda. Infrastructure investments will support other donor WASH programs, e.g. school sanitation.
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
4.		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	

Areas of Weakness Requiring Adjustment

1. Support development of national and sanitation and hygiene policy: Review of the selection criteria indicates gaps in this activity. The activities to support the national sanitation policy need to include support to the implementing agency, the Ministry of Health, in the roll out of the new policy and its application. Without strengthened capacity within the Ministry, the policy will not be effective. Activities to train national and local authorities on the policy implications; establish inter agency approaches to policy application; and public consultation on the new policy will be added to the project design.

2. Encourage Small Scale Private Sector Providers (SSPs): The selection criteria revealed that there is no champion for this activity or political will. In fact, in Blue Town city authorities have tried to shut down some SSPs resenting their intrusion in the market. Yet the SSPs provide an essential role in service delivery. This activity will need to also tackle the policy and regulatory environment in which the SSPs work. This could include establishing partnerships between the local authorities and the SSPs to improve sanitation service delivery; improving access to micro finance for the SSPs; etc. Local authorities will need to be actively engaged in this activity.

3. Sanitation and Hygiene Promotion: Application of the selection criteria discovered that while the activities under this component are essential to realize the health benefits USAID and the Missions seek to achieve with improved access to basic sanitation, the local and national authorities have not revealed a demand for, or support of, these types of activities. Creating and building awareness of the links between sanitation, hygiene and health must be added to the mix of activities. This could take the form of a project kick-off workshop involving a wide range of stakeholders which focuses on the objectives of improved health as they relate to sanitation. A training program which lasts the duration of the project could strengthen understanding and create a demand for sanitation and hygiene programming, not just on the household and community level, but on the municipal and national level. Early on, a sanitation and hygiene champion should be identified and actively engaged in the project.

WORKSHEET 4
STEP 9: INCORPORATE THE CROSS-CUTTING THEMES INTO THE DESIGN

Cross-cutting themes with application to the Project Design:

1. Build Capacity
2. Strengthen Civil Society
3. Encourage Consultative Stakeholder Participation
4. Implement a Gender Equity Strategy
5. Adopt Pro-Poor Strategies and Policies
6. Implement a Results, Reporting and Evaluation Program

Cross-Cutting Theme	Related Activities	Do the Activities Advance the Cross-Cutting Theme?
Build Capacity ▪ Have you adequately built into the design formal and informal opportunities **for** training, skills building, or on the job training for career advancement? ▪ What is your targeted group? ▪ Have to gone beyond government staff to include the private sector or NGOs ▪ Is the focus on individuals or entities? ▪ Have you set specific targets for participation or for competency levels? ▪ What will happen when the project ends? ▪ How will these new capacity be sustained and further enriched? What are the specific skills-building needs ▪ How do those relate to inadequate or disappointing performance of an entity?	1. Promote Household Level Water Treatment 2. Build Public Private Partnerships 3. Encourage Small Scale Providers 4. Sanitation Marketing	These activities increase the capacity of households and the private sector. What is missing in the design is capacity building for the implementing agency for hygiene, the Ministry of Health; the municipal authority responsible for sanitation service delivery, and NGOs. Support for the roll out and implementation of the policy; technical assistance for the development of related guidelines and regulations to support the new policy; and training of those responsible for implementing the new policy should be provided under the new project. Sanitation marketing will support the private sector
Cultivate Leadership ▪ What are the most evident leadership weaknesses and how will the activity address it? ▪ What explicit tie is made between leadership and political will? ▪ How will improved leadership promote better institutional performance and service delivery? ▪ Have you made recommendations for the type of leadership training to be given? ▪ What models have proved successful in the context of your project's goals? ▪ Have women been sufficiently included in the design as potential future leaders? ▪ How has leadership cultivation gone beyond training and travel? ▪ What transformational changes does the project aspire to? ▪ Will it be a model for other sectors? ▪ What are the appropriate centers to target, beyond government? ▪ How will the project identify individuals?	Not Applicable	

Cross-Cutting Theme	Related Activities	Do the Activities Advance the Cross-Cutting Theme?
Strengthen Civil Society ▪ Have you identified the entities that currently or potentially will play an influential role in the sector? ▪ Have activities accounted for their incorporation into the project? ▪ How will the project determine funding priorities for civil society groups? ▪ How will it handle reluctance or hostility from the government for their inclusion? ▪ What role have they played during the design and how can that be augmented? ▪ What are the legitimate roles for civil society groups in the implementation of the activities?	1. Apply Proven Methods for Social Mobilization 2. Encourage Small Scale Service Providers 3. Support Development of a National Sanitation Policy A 4.Select and Build Appropriate Household Sanitation Facilities	Social mobilization will engage the local population in problem identification, solutions, and actions. The local private sector will be supported by project activities. Activities related to the development of the sanitation policy will promote a local level participatory process & public consultations.. Introduction of community public toilets will be contingent on community demand, financing, and O&M. The design currently lack activities to support and empower local community groups and NGOs.
Encourage Consultative Stakeholder Participation ▪ Will the project establish a forum for stakeholder participation? ▪ Will it be informal or formal? ▪ Does one already exist that can be strengthened? ▪ If not, can one be formed? ▪ Will it build on the efforts of other donors? ▪ What role did stakeholders play in project design and how will that be increased? ▪ What specific role can key stakeholders play on each activity? ▪ How do the activities move beyond passive consultation to active engagement? ▪ How will the activities identify and engage leading experts and citizens? ▪ How has it accounted for increased women's participation? ▪ Are there special measures or funding set aside to encourage their involvement? ▪ How will the project ensure that implementation is not dominated by a small, influential and unrepresentative group?	1. Apply Proven Methods for Social Mobilization 2. Develop Sanitation Policy 3. Promote Household Drinking Water Treatment 4. Build Public Private Partnerships for Handwashing 5. Introduce Community Public Toilets	The WASH consultative group that formed to investigate WASH conditions as part of the project identification will be expanded to include civil society and NGOs representatives. This group will provide technical review of the project design and, in a modified form, continue on for the life of the project as in an advisory role. Support for the sanitation policy includes ensuring a participatory process for the review and adoption of the policy. The infrastructure component will provide at least two options to households in the selection of technology—VIP latrines or small scale appropriate sewerage technologies, e.g. condominial sewerage.
Promote Transparency and Combat Corruption ▪ How do project activities actively counter corruption and promote openness? ▪ How will they deal with government or non-government hostility or stonewalling? ▪ What will the project do if it identifies attempts to corrupt implementation through inappropriate or illegal use of funding or other resources? ▪ How will decision making be open and honest? ▪ What plans exist for clear lines of authority between the project and stakeholders? ▪ Will the project identify local, honest brokers as guides through potential minefields?	Not Applicable	

Cross-Cutting Theme	Related Activities	Do the Activities Advance the Cross-Cutting Theme?
Implement a Gender Equity Strategy ▪ How has the design dealt with differences in gender roles? ▪ How has that informed the engagement of men and women? ▪ Have women been adequately involved in the design of the new project? ▪ How are they been seriously incorporated into project activities? ▪ Do activities envision their playing roles which define and use project resources? ▪ How are they beneficiaries of funding and other project largess? ▪ Do both men and women play potential leadership roles? ▪ Does the understanding of women's roles go beyond a superficial presentation of them as water collectors and users? ▪ What activities deal directly with woman as household managers and determiners of hygiene practices in the household? ▪ How are differences in ethnicity, wealth, education and other status indicators used to inform implementation? ▪ Are targets clear and reasonable? How have financial opportunities been included as incentives? ▪ Will the activities move government ahead in acknowledging women's rights and legitimate roles or do they support the status quo? ▪ How do activities improve women's access to and management of water? ▪ Are women's groups incorporated or encouraged to participate?	1. Select and Build Appropriate Household Sanitation Facilities 2. Promote Household Drinking Water Treatment 3. Encourage Small Scale Private Providers of Service 4. Support Development of National Sanitation Policy 5. Introduce Public Toilets	Women will be involved in the selection of sanitation technology. Business opportunities for women in sanitation services and products will be identified and women targeted for training in same. Household level drinking water treatment is most likely carried out by women. They will make the decisions on technology selection and be targeted for training in methods. Activities to reach out and support entrepreneurs will target women owned businesses. Public consultation and participatory planning for the policy framework will emphasize involvement of women Public toilets if properly cited, designed, and charged for use, can benefit women. Activities will emphasize involvement of women. Sanitation committees for public facilities will include women.
Adopt Pro-Poor Strategies And Policies ▪ Do the activities reflect current thinking within USAID on pro-poor strategies? ▪ Do the activities support or encourage government efforts to extend services to the poor? ▪ How will the project work with the poor and poorest of the poor? ▪ What level of project resources are directly targeted to working with the poor? ▪ How do activities encourage movement away from poor status? ▪ How is microfinance used to increase incomes or access to services? ▪ Is there evidence of the use of successful tools and models to assist the poor? ▪ Are the poor targeted geographically? ▪ Does it distinguish between the urban and rural poor? ▪ Are there strategies will reflect these differences? ▪ Will activities encourage government involvement in assisting the poor?	1. Support Development of National Sanitation Policy 2. Select and Build Appropriate Household Sanitation Facilities 3. Introduce Public Toilets 4. Promote Household Level Water Treatment 5. Sanitation Marketing 6. Encourage Small Scale Providers	The project will encourage Peristan to include pro-poor approaches in its new strategy including eliminating legal barriers, e.g. land tenure, to service delivery; introducing a pro poor tariff structure and subsidy mechanism for sanitation infrastructure; supporting technology choice rather than dictating standards; providing for sanitation and hygiene in the municipal budgeting process. Providing those unable to finance an on-site sanitation facility with a public option is a goal of the project. Providing alternatives to poor water quality for the poor is included in project design. Sanitation marketing will include developing financing options for the poor.

Cross-Cutting Theme	Related Activities	Do the Activities Advance the Cross-Cutting Theme?
Adapt for Climate Change ▪ Have activities been informed by potential climate changes in project areas? ▪ Has the design taken into account adaptation by the government and other users in the event of incremental change? ▪ Has the design incorporated USAID offices and government agencies outside the WASH sector who are likely participants or stakeholders in climate change impacts? ▪ Have activities taken into account changes in supply or quality? ▪ How will they address issues related to scarcity? ▪ Has it looked at differing surface and groundwater resource issues? ▪ Do they foster government participation? Have academic and NGO communities been identified for engagement?	Not Applicable	
Incorporate Vulnerable Populations - NA ▪ Do activities target people suffering from HIV/AIDS and their affected families, orphans and children, displaced persons and people affected by conflict? ▪ Has the design made an adequate case for incorporating vulnerable populations, if appropriate? ▪ How does it deal with issues related to access and finances? ▪ Have hygiene activities specially been designed for vulnerable population? ▪ How have they address potential issues related to stigma and exclusion? ▪ What resources have been explicitly set aside in the design?	Not Applicable	

Cross-Cutting Theme	Related Activities	Do the Activities Advance the Cross-Cutting Theme?
Manage the Transition from Conflict or Emergency Situations to Sustainable Development - NA ▪ Has OFDA been involved in the design or will it be in implementation? ▪ Is the proposed implementation site feasible for activity implementation if it is in conflict transition? ▪ Is the goal short-term assistance or long-term sustainable development, or a combination? ▪ Are the activities addressing emergency situations? ▪ What special measures are needed for these situations? ▪ Are other USAID offices engaged? ▪ Have regional vehicles been names for possible leveraging?	Not Applicable	
Implement a Results Reporting, Monitoring and Evaluation Program ▪ Has the design accounted for the Foreign Assistance Framework and the Foreign Assistance Coordination and Tracking System (FACTS) to identify water as a "key issue" to be reported annually? ▪ Are activities designed to be included in FACTS? ▪ Has the design made use of indicators in the Paul Simon Water for the Poor Act? ▪ Do activities call for customized indicators?	1. Select and Build Appropriate Household Sanitation 2. Introduce Public Toilets	Project indicators will be consistent with the WFPA and FACTS by including number of people with increased access to sanitation, increased handwashing behavior, and number of households practicing household water treatment techniques.

2. URBAN WATER SUPPLY AND SANITATION IN URBALA

USAID ENGAGEMENT IN URBALA

Step 1:

Understand the USAID and National Context

Urbala is small and land-locked with a population of around ten million. It is a poor country with most of the population living on $1 to $2 per day. There is one major city, the capital, with a population of two million; the rest of the population live in rural communities scattered throughout the country. The country's economy depends almost solely on agriculture; all industry is agriculture-based. Twenty-five families control most of the land and wealth in the country. HIV/AIDS is a major problem, particularly in rural areas. While the country gets abundant rainfall, only 62 percent of the population has access to safe drinking water and 35 percent access to adequate sanitation. Income disparities, the lack of basic services and perception of governmental corruption in the country has recently led to riots in the capital and insurgent activity in rural areas. Political unrest in the country could impact the bordering areas of neighboring countries where the US has significant interests.

Recently, Urbala's recently elected president wants to improve public services in accordance with the Millennium Development Goals (MGDs). He has petitioned the U.S., other developed countries, international NGOs, and World Bank for help to improve water supply and sanitation access in the city. In its recent budget, the U.S. Government allocated $2 million of additional funds to the country under the Paul Simon Water for the Poor earmark.

USAID has a small mission in the country, with eight staff in total: two foreign services officers, one PSC and five FSNs. The mission gets support occasionally from a sub-regional mission in a neighboring country and from a regional mission about four hours away by plane. Neither of the regional missions have any urban water utility expertise. The country mission currently has an annual budget of $12 Million. During the last five years, projects have been focused in three areas: 1) Democracy and Governance (20 percent) with most projects focused on strengthening capacity of key ministries, municipalities and other public sector institutions to provide basic services—although to date this has not included the city water utility; 2 percent) Health (50 percent), with all of the effort going to reduce HIV aids in rural areas, which in the past has included the provision of household water treatment solutions to households with HIV/AIDS; and 3) Economic Growth (30 percent), focused solely on agribusiness value chain activities to improve rural livelihoods. The current Mission strategy is to continue focusing on those areas.

THE WASH SECTOR IN URBALA

Step 2:

Describe the WASH Context

The population in the city is segregated, essentially by income into three areas. The country's wealthiest families, representing 10 percent of the city inhabitants, live in the city center or an exclusive enclave on a hill just outside, north of the city center. The middle class, representing 40 percent of the city population, live predominately on the west side of the city, outside of the city center. The remaining 50 percent are poor and live in slum settlements on the east side of the city across the river that slices through the city from the north to the south. There are about 20 slum settlements which have been growing exponentially in the

past five years due to migration from rural areas fueled, in part, by security concerns. Limited land availability in the city core for development and high land values have contributed to the development of the slum areas. Actual ownership of lands is diverse with about 50 percent owned privately or by the residents and the rest by the municipal government. All government offices, except for a military garrison are located in the city center. The military compound is just a mile south of the city center. All industry, consisting of approximately 500 mid-sized food processing plants, is located in the southwestern part of the city below the military compound.

City Water and Wastewater Authority (CWWA) is responsible for providing water and sewerage services to all urban residents. In reality, CWWA provides relatively low coverage with approximately 60 percent of the urban population connected to a drinking water distribution network, and only 45 percent to a sewerage collection network. The current drinking water network is highly inefficient, subject to numerous illegal connections, and suffers from inadequate metering and maintenance, insufficient pressure in several areas, high leakage and significant infiltration problems contaminating the water supply. Also, CWWA is suffering from the lack of adequate administrative billing and collection procedures. Only 80 percent of the metered connections were billed and about 50 percent of these billed connections paid their bills on a regular basis.

The water supply source to the city is surface water from the river. It is pumped to two treatment stations, treated, and supplied to the west side of the city through two unconnected water systems. The North Water System (North WS) supplies water to city center, the exclusive enclave on the hill and military compound. The North WS provides service to approximately 205,000 people through 58,000 connections. The South Water System (South WS) supplies water to the industrial area and those living on the west of the city, but outside the city center. The South WS provides service to approximately 240,000 people through 76,000 connections.

None of the households living on the east side of the city are connected to a piped network; although the city's Slum Act empowers the CWWA to provide services to all slums whether or not they can demonstrate land ownership. To date, the CWWA's service to slums consists solely of supplying water to a few public taps connected to the South WS. The CWWA views the east side of town as risky from a revenue perspective and has little incentive to serve the slum communities. The residents in the slum settlements thus rely on variety of coping mechanisms including private shallow wells and small scale providers (SSPs).

SSPs are well organized and effective in reaching a large portion of the slum population. The source water is the network system but the relationship between the SSPs and the CWWA is informal, at best. SSPs are unregulated and typically charge ten times more than metered water. There has been a rumor circulating for years that most of the small scale providers are owned by the wealthy or by senior government officials.

The North WS, which was rehabilitated five years ago, provides water 24 hours a day at 40m pressure. Pumps are used to raise the water to storage tanks on the top of hill to provide service the exclusive enclave. All customers in the North WS service area are metered. The South WS was built 15 years ago but has been poorly maintained and is steadily deteriorating. It is in desperate need of rehabilitation. The South WS supplies the industrial area with water for approximately 10 hours per day, at about half the pressure of the North WS. All industrial customers are metered. The South WS supplies the households and businesses in the west side of the city only intermittently – one or two days a week, typically at night, and at very low pressure. None of the customers in the west part of the city are metered. Bill calculations

are based assessed usage determined many years ago when the South WS was operating more efficiently. The South WS currently only satisfies 50 percent of customer requirements. Privately owned boreholes supplement the piped network supply in the industrial area. Those living on the west side of the city supplement their piped network supply from community boreholes with good quality water or from private water vendors. Non-revenue water (NRW), i.e. the difference between the water produced and authorized consumption, for the North WS is approximately 40 percent; for South WS it is approximately 60 percent. World Bank specialists estimate that 40 percent of the NRW is due to technical l

The North WS, which was rehabilitated 5 years ago, provides water 24 hours a day at 40m pressure. Pumps are used to raise the water to storage tanks on the top of hill to provide service the exclusive enclave. All customers in the North WS service area are metered. The South WS was built 15 years ago but has been poorly maintained and is steadily deteriorating. It is in desperate need of rehabilitation. The South WS supplies the industrial area with water for approximately 10 hours per day, at about half the pressure of the North WS. All industrial customers are metered. The South WS supplies the households and businesses in the west side of the city only intermittently - 1 or 2 days a week, typically at night, and at very low pressure. None of the customers in the west part of the city are metered. Bill calculations are based assessed usage determined many years ago when the South WS was operating more efficiently. The South WS currently only satisfies 50 percent of customer requirements. Privately owned boreholes supplement the piped network supply in the industrial area. Those living on the west side of the city supplement their piped network supply from community boreholes with good quality water or from private water vendors. Non-revenue water (NRW), i.e. the difference between the water produced and authorized consumption, for the North WS is approximately 40 percent; for South WS it is approximately 60 percent. World Bank specialists estimate that 40 percent of the NRW is due to technical losses (e.g. leaks) and 60 percent is due to illegal consumption, most likely theft by water vendors.

A recent study found that 45 percent of the urban population is connected to a sewer system—all of them in the middle income or wealthy part of the city. The collected wastewater goes to a wastewater treatment plant which operates poorly. CWWA cannot afford the energy costs to run the plant to its capacity and lack of maintenance has resulted in frequent equipment malfunctions. At best, primary treatment (e.g. screens) is used. 90 percent of the wastewater is discharged untreated into the river downstream of the city. There is no sewerage system on the east side of town. Households rely upon on-site systems, at their own expense. Most of these are basic pit latrines. Many of these latrines are full. There are no services for desludging and leaching from the latrines and open defecation result in contamination of the surface and ground water supplies. Public toilets are limited but do provide some minimal level of service. There is no solid waste management service provided in the slum settlements. The tariff for water supply includes charges for connection to the sewerage system.

The water quality of the piped water supply usually meets the potable water quality standards (WHO). The quality of the ground water pumped from shallow wells on the east side of town usually fails to meet the bacteriological standards because of the contamination by human wastes. Water-related diseases break out periodically in the east part of the city. The quality of water secured from private operators is not monitored. Because of the discharge of untreated sewage into the river, there is significant pollution which impacts the downstream users and increases the loading to the South WS treatment plant.

Institutional Arrangements

Fifteen years ago, political power was devolved from the national government to the city government. The Ministry of Water for the country is responsible for long-term water resource management planning,

river water and ground water extraction licensing and monitoring. The Ministry of Water does not have any legal authority over the operations of the CWWA.

The mayor is the chief executive of the city responsible for the implementation of all programs, projects, services and activities of the city government. The mayor is elected every three years. The current mayor has been in power for the last seven years and will face an election next year. There is a legislative council that must approve all city ordinances, budgets, tariffs, user fees, etc. Legislative Council members are elected for a three year term. Historically, almost all council members have come from one of the top ten wealthiest families in the country.

The CWWA is a "corporatized" authority, legally separate but owned by the municipality. The CEO of the utility - who widely regarded as an experienced, honest, good-intentioned, but un-empowered manager - is appointed by the mayor as are all of the members of the utility's board of directors, subject to approval by the Legislative Council. The utility can legally retain its own revenue; but, cash transfers are often made to other municipal entities, at the mayor's request, to cover non-utility expenses. Employees of the city utility are civil service employees subject to fixed civil salary scales and promoted based on seniority. There are 5,000 employees working for the city utility. Most of them do not have technical skills. Many are political hires. There is a severe shortage of qualified engineering and finance and accounting professionals in the utility. The financial statements produced by the utility are unreliable, only produced annually and don't come out until six months after year-end.

Financial Situation

The CWWA has been in financial distress for the last five years. It does not collect sufficient revenue to cover operating costs for water supply or sanitation let alone finance expansion of services. While tariffs have not changed, energy and chemical costs have increased 50 percent and salary costs 30 percent during the period. CWWA only collects 60 percent of its tariff revenue. Willingness to pay is perceived to be low, especially among assessed South WS customers receiving only periodic supply. The utility has been in default for the last two years on loans passed through from the Ministry of Finance under agreements with the World Bank to fund the rehabilitation of North WS.

A single tariff per cubic meter is charged to all customers connected to the system. Tariffs have remained the same for the last six years, despite an agreement with the WB to raise tariffs after completion of rehabilitation of the North WS. While there is a water law that mandates full-cost recovery, tariffs were not increased for political reasons; the legislative council and the mayor have been concerned about the political backlash of raising tariffs when many of the utility's customers do not receive an adequate supply.

Government/Donor Coordination

In the recent elections, the President promised to improve water supply and has asked for international assistance. The Japanese have agreed to drill 200 boreholes on the east side of the city. The Gates Foundation is recently agreed to provide $ 10 million for household water treatment to the poor on the east side of the city as an interim measure until boreholes are installed. The World Bank has agreed to provide a substantial loan to rehabilitate the city's South WS treatment plant, provided the city can meet certain pre-conditions to improve utility governance and the utility's financial condition, principally by increasing tariffs to North WS customers, reducing NRW and improving billing and collections.

MAJOR WASH PROBLEMS FACING URBALA

After gathering the above information on service delivery of water supply and sanitation, utility performance, institutional arrangements, health and environment issues, the mission has identified the following priority problems that need to be addressed by someone.

Step 3:

Identify Priority WASH Problems

- Lack of access to the piped water network or an alternative safe drinking water supply for those living in the east side of the city—the poor—threatens public health.
- Deterioration and possible failure of the existing water supply infrastructure, i.e. the south side water supply network, threatens the city's economy, public health, and the environment.
- Inadequate sanitation and wastewater management have polluted the surface and ground water resources.
- CWWA is unable to perform its functions adequately. Poor utility performance results in inadequate delivery of water and sanitation services and maintenance of assets. The poor suffer disproportionately.
- Corruption makes it difficult for the utility to do its job. The rumor that high NRW is substantially caused by theft by water vendors owned by wealthy families or senior government employees is corrosive to society, even if false. And, clearly someone is stealing a significant amount of the city's water. The rumor, theft of water and the high price that the unregulated water vendors charge for water is an explosive mixture.

PRIORITY WASH PROBLEM

To select those problems that the USAID mission might consider, the mission staff used the following criteria, or filter to evaluate each identified problem:

Step 4:

Analyze WASH Problems and Select One for USAID Intervention

- Impact on the political, economic and social situation;
- Fit with USAID/DC and Mission strategy, including: laws and frameworks, annual water earmark, programmatic and in-country geographic priorities
- Ability of the mission to solve the problem considering USAID's comparative advantage, in-house skills and experience, available budget, timeframe, links with ongoing regional or mission programs, in-country capacity to provide services, and accessible procurement mechanisms
- Presence of a champion in the Mission and country, including whether there is "pressure" for change within the government or elsewhere in the country and where there is a "moral imperative"—i.e. whether it is the right thing to do.
- Political will of the government to tackle the problem, i.e., whether there is a match with the country's priorities; whether there are available counterparts in and out of Government; and, whether there is any funding committed by the country.
- Other donor efforts, i.e., parallel donor activities, duplication of efforts, spheres of influence, opportunities for partnership, existing coordinating mechanism.

Problem 1: The lack of access to safe drinking water in the east part of town is the most critical problem facing the city. Improving access to safe drinking water addresses the MDG for water access as well as

promotes public health. Improving piped access fits with the water earmark requirements; but not with the Mission's current strategy. The Mission's health expertise includes the provision of household water filtration, but the Mission's health interventions are currently in rural areas. Also the Gates Foundation is addressing household water treatment in the east side of town until the Japanese boreholes are installed. While USAID could support the efforts of others, the $2M it has would be a small contribution to a larger effort.

Problem 2: Is similar to problem 1 with similar health impact. In addition, the collapse of the infrastructure could have serious economic and social repercussions. While there may be a supporting role for USAID, it does not have the in-house skills or budget for it to have much impact. According to World Bank specialists, 40 percent of NRW is due to technical losses. While commercial losses should be easier to fix, technical losses should also be addressed. Replacing meters, pipes and values in the North WS would cost $3 million; in the South WS $10 million. Also, as the World Bank has already agreed to support the rehabilitation of the South WS—provided the Government takes action to improve CWWA's governance and financial performance, USAID would have greater impact coordinating with the World Bank and working on improving CWWA's governance and financial performance.

Problem 3: The lack of adequate sanitation on the east side of town and poorly performing wastewater system on the west side are serious problems; but beyond the programming funds available. Rehabilitation of the wastewater collection and treatment system is estimated at about $50 million. Improved on site sanitation facilities are essential in the east part of town, and would represent less of an investment; but still substantial in order to have much of an impact. Also, there currently isn't a champion or the political will to tackle sanitation in the slums settlements. It is anticipated that addressing the institutional and policy issues underlying the other problems will be

Problem 4: Poor utility performance underlies many of the water and sanitation problems confronting the City. Most of the utilities problems imply weak governance and poor accountability. An intervention at the City or CWWA level will fits reasonably well with the Mission's current democracy and governance strategy of strengthening capacity of key ministries and other public sector institutions to provide basic services. It would also fit under the water earmark requirements. The communities concerns, e.g. expressed in past demonstrations, and the President's stated inertest in improving water and sanitation service could provide the impetus for change.

Problem 5: Taking on corruption as an agenda is risky given the unstable political climate. While is fits with the Mission's strategy, it doesn't fit particularly well with the water earmark requirements. Also, there is currently no one to champion any major changes. However, there are policy and reform steps that could incorporated in other projects that could get at some of the corruption issues.

Select One Priority Problem for USAID Consideration

Base on the above, the Mission staff decided it can best contribute to improved water and sanitation services by tackling CWWA's poor performance. Problem 1, improved access to water, addresses the MDG for drinking water and promotes public health, a part of the earmark and Mission strategy, respectively. The president has made a public commitment o improve drinking water. However, the size of the investment to tackle expansion of the existing network is beyond the scope of the Mission's programming. Similarly, Problem 3 while important represents a significant investment in infrastructure which is more in line with development bank programs. The World Bank is financing rehabilitation of existing water supply infrastructure and Japan is funding installation of boreholes for improved access to

safe water in the slum settlements. These are the most urgent urban water problems. Problem 2 is a reflection of poor management. Problem 5 – taking on corruption – as an agenda is risky given the unstable political climate. Therefore, Problem 4 – Poor utility performance – is the best choice for a USAID intervention. It gets at the underlying causes of the other problems and can indirectly tackle corruption. The problem statement is "**Poor utility performance results in inadequate delivery of water and sanitation services and maintenance of assets**."

REASONS BEHIND URBALA'S SERVICE DELIVERY PROBLEMS

A thorough analysis of problem causes was then undertaken that included a careful review of documents, consultations with a broad range of stakeholders and specialists. Problem causes were examined considering the following six root cause categories: 1) policy, legal and regulatory; 2) behavioral, 3) institutional; 4) financial: 5) infrastructure and 6) environmental. The purpose was this analysis was to enable the Mission staff to prioritize and focus their programming. The key root causes are: policy, legal and regulatory; institutional; financial and infrastructure related.

Step 5:

Assess Causes of the Problem and Determine Those of Highest Priority

Policy, Legal and Regulatory

While the national water law mandates full-cost recovery, regulatory functions are currently being performed by the Mayor and the Legislative Council; who for political reasons have not raised tariffs for the past six years, disregarding their agreement with World Bank to raise tariffs following the rehabilitation of the North WS. The ability of the Mayor to redirect funds for non-utility indicates that while "corporatized" CWWA does not have the legal and operating autonomy initially intended. The widespread apparent theft of water by water vendors rumored to be owned by wealthy families and senior government officials reflects a weak legal and regulatory environment.

Institutional

CWWA's poor operational performance is partly caused by its weak management and staff. High NRW and low collections indicate sluggishness in the organization which is typically due to lack of leadership or management control. And, that many of the employees are political appointees indicates that the Board of Directors and senior management have little control over many key aspects of the business and that the CWWA's customers, i.e. the public, have little say in the direction or operations of the utility.

Financial

CWWA's poor performance has obvious financial causes. The utility is currently in financial distress due to: tariffs that do not cover costs, high staff costs—even while it does not have the skills its needs, poor billing and collections and payments of non-utility related expenses. Also, 50 percent of NRW is due to unauthorized consumption, which if the consumption were billed and collected would substantially increase the financial resources available to the utility. CWWA's financial management is considerably weak. Its financial statements are unrealizable and are only generated annually, many months after the end of the year. Without adequate measurement, CWWA cannot be properly managed.

While an investment to reduce technical losses in the North WS should have a rapid payback, the initial cost exceeds available budget and the Mission lacks the expertise to manage the project. You determine that the Mission would have the greatest impact tackling the policy, legal and regulatory weaknesses, as much of the project would involve strengthening national-level regulation which fits well with the Mission current expertise and strategy. Working at this level would make best use of the president as a champion and build on his political willingness to tackle the problem.

Working to strengthen CWWA institutionally and financially would also be a reasonable fit with the Mission's expertise and strategy. The Mission has been working with the City to strengthen other public services, increasing public participation, improving CWWA accountability, setting cost-recovery prices and improving billing and collections are essentially the same tasks that the Mission has undertaken to improve other basic services. The CEO is well-intentioned but politically captured by the Mayor. Cost-recovery tariffs are critical, but will be politically difficult to implement without national-level pressure

PROJECT COMPONENTS

Step 6:

Organize the Project into Components

To address the problem of poor utility performance, you select project components aligned with the priority core causes and the key issues they entail, as follows:

Policy, legal, and regulatory

- Non-compliance with national water policy, as it regards full-cost recovery tariffs;
- Governance weaknesses which permit the Mayor to misdirect utility revenues for non-utility purposes and restrict the movements of CWWA's management;

Institutional

- Unqualified staff, poorly aligned incentives, etc.

Financial

- High commercial losses, due principally to theft by water vendors
- Lack of cost-recovery tariffs
- Poor collections.

Due to budget constraints the project will not be capable of doing everything. Thus, the components will be focused on activities that will have the most lasting impact: strengthening regulation, improving CWWA governance and realigning CWWA management and staff incentives to reduce commercial losses and to improve collections. The project's three components are:

Core Cause	Component
Policy, Law, and Regulation: Implementation of the policy framework is hindered by poor legal and regulatory functioning.	Improve compliance with the national water policy and to improve CWWA governance
Institutional: The SWWU is inefficient and ineffective and financially insolvent. It is unresponsive to the public, unaccountable to the public, and provides no incentives for improved services or expansion.	Realign CWWA incentives so as to improve its operating and financial condition
Financial: There are high commercial losses, inadequate cost recovery, and poor collections.	Improve CWWA's financial condition

PROJECT ACTIVITIES

To address the problem of poor utility performance you selected three project components in Step 6:

- Improve compliance with the national water policy and to improve CWWA governance
- Realign CWWA incentives so as to improve its operating and financial condition
- Improve CWWA's financial condition

Step 7:

Select Project Activities

Next, you consulted Annex D of these guidelines to come up with specific activities that respond to each of the program components. Below are the activities associated with each of the priority core causes, organized by program components.

Policy, legal, and regulatory: To improve compliance with national water policy and to improve CWWA governance, the project could:

- **Restructure the water sector** to remove CWWA from the control of the municipality, i.e. re-centralize the utility.
- **Improve economic regulation** to remove the tariff and service level approval from the municipality and to improve equity between the North WS and South WS customers who currently pay the same tariff but receive vastly different service. Improved economic regulation could also help CWWA address the illegal usage by water vendors by requiring licenses and restricting the water sources that licensed vendors can use.
- **Institutionalize performance monitoring and benchmarking** to provide management incentives for improvement.

Institutional: To realign CWWA incentives so as to improve its operating and financial condition, the project could:

- **Activate performance agreements** to improve accountability and empower management

Financial**:** To improve CWWA's financial condition, the project could:

- **Introduce business planning** which would support the introduction of performance agreements;
- **Establish cost-recovery tariffs** – a new tariff structure is needed that separates the North WS from the South WS and that properly assigns cost to those customers that cause it (e.g. pumping and storage costs for the wealthy households in the hill-top enclave.
- **Improve billing and collections** - CWWA's difficulties stem partially from the general lack of effort, which a performance agreement could help; but which also might benefit from an effort to **use public-private partnerships to improve operations**, which by transferring risk to the private sector should help to improve collections.
- **Strengthen financial management** - improving financial accounting, reporting planning, etc., can help to improve CWWA's performance by providing management with improved tools to tack and management performance.

To decide which project activities to include in the project, you used the same selection criteria as before considering if the activities:

- Have an impact on the political, economic and social situation
- Fit with the Mission's core competence, strategy
- Whether it would be implementable within the next two years
- Fit within the $2 million budget
- Help leverage the activities of other donors
- Ability to use the President as a champion and that there is political will to undertake the activity

Based on the above criteria, you concluded that it would not be feasible to re-centralize the utility because of political resistance from the city leadership; but it would be possible to shift economic regulation from the city to the national government, thereby reducing political interference in the day-today management of CWWA and providing the mechanism to require implementation of cost-recovery tariffs, at least for the North WS. While it may take awhile to establish an independent regulator, in the interim economic regulation could be shifted to the water ministry, with the President's support.

You also concluded that they could implement the tariff study that would be needed to adjust tariffs to cost-recovery levels. Coupling this with a performance agreement between the Mayor and CWWA and with performance monitoring and benchmarking against similar utilities in nearby countries should provide the seeds for sustainable improvement. All of these activities could be implemented in two years and for approximately $2 million.

Base on the above analysis, you decided to:

- Support the creation of an central economic regulator
- Implement a national performance monitoring and benchmarking program
- Prepare a tariff study to raise the tariff in the North WS to cost-recovery levels
- Design and implement a performance agreement between the Mayor and CWWA

CROSS-CUTTING THEMES

Step 8:

Determine the Most Relevant Cross-Cutting Themes

The heavy lifting of designing the technical content for the Urbala Urban Water project is complete. One final activity will ensure that the technical content addresses the key cross-cutting factors that are present in all or most USAID development projects. In this case you examined each of the eleven essential cross-cutting themes and noted actions to consider for inclusion in this project.

Cross-Cutting Theme Checklist Customize Activities Based on Cross-Cutting Theme Assessment

Cross-Cutting Theme	Addressing This Theme
Build Capacity	▪ Building capacity is an important component of the activities to create a central economic regulator, to implement a national performance monitoring and benchmarking program and to design and manage a performance agreement between mayor and CWWA. Training and mentoring activities will be included
Cultivate Leadership	▪ Strengthening leadership of both the Mayor and the CEO of CWWA are essential if the improvements sought by this project are to be sustainable. Thus activities will be included to mentor the Mayor to delegate responsibility to the CEO to under a performance agreement; and to mentor the CEO to become more entrepreneurial and to accept responsibility for CWWA performance.
Strengthen Civil Society	▪ The project will include activities to increase public awareness and understanding of the regulatory process.
Encourage Consultative Stakeholder Participation	▪ The activities to strengthen economic regulation will include public hearings and other activities that encourage public stakeholder participation.
Promote Transparency and combat corruption	▪ Activities will be included to increase transparency and to combat corruption, including publicizing performance monitoring the performance agreement, CWWA financial budgets and reporting.
Implement a Gender Equity Strategy in Water, Sanitation and Hygiene programs	▪ Policies and processes of the central economic regulator will be implemented to address gender issues. NGOs will be encouraged to participate in the new regulatory activities to ensure gender equity issues are addressed.
Adopt Pro-poor Strategies and Policies	▪ Policies and processes of the central economic regulator will address support for the poor. NGOs will be encouraged to participate in the new regulatory activities to ensure pro-poor strategies are included.
Manage the Transition from Conflict or Emergency Situations to Sustainable Development	▪ The cross-cutting theme is not applicable to this project
Implement a Results Reporting, Monitoring and Evaluation Program	▪ A monitoring and evaluation program will be included to track the outcomes of the project.

FINE TUNING THE ACTIVITIES

Step 9:

Incorporate the Cross-Cutting Themes into the Design

After considering the cross-cutting themes, the final list of activities for the project will include the following:

- Assist the Ministry of Water to create a national economic regulator. Subtasks will include, but not limited to:
  - Drafting national legislation to create a national economic regulator for water and sewerage services;
  - Developing a national performance monitoring and benchmarking program;
  - Implementing a customer consultative council to ensure customer input to regulatory decisions, with special focus on representing the poor and women in the city;
  - Implementing regulatory policies and procedures that increase transparency, public awareness and participation and that permit NGOs and other interested parties to intervene in the regulatory processes.
- Conduct a tariff study for the North WS to achieve full-cost-recovery and to properly assign costs; incorporating explicit pro-poor subsidies as appropriate.
- Work with the Mayor and CEO of CWWA to implement a performance agreement that will increase CWWA's autonomy and accountability.
- Develop a program to monitor project performance.

THE STATEMENT OF WORK

Step 10:

Finalize Design for Statement of Work

A USAID SOW contains multiple sections. You have just completed the most difficult part of that SOW—the general description of the Technical elements of the contract or grant. In addition you have also, by implementing the full analytical process described in these guidelines, generated other important SOW content.

3: RURAL WATER IN RUZABWE

USAID ENGAGEMENT IN RUZABWE

Step 1:

Understand the USAID and National Context

USAID has been active in rural regions of the nation of Ruzabwe for close to five decades, and is one of the only bilateral donors to provide humanitarian and development assistance continuously since its independence from colonial rule. The Mission's Country Assistance Strategy calls for a stable, well-governed, and prosperous Ruzabwe with rural livelihoods as a key cross-cutting theme of U.S. foreign assistance. The USAID Mission operates multiple projects that target rural areas through different Mission offices including Democracy and Governance, Health and HIV/AIDS, Economic Growth and Trade, Education, and Humanitarian Assistance. The confluence of three Mission priority goals - increasing economic growth, improving public health, and improving the effectiveness of democratic governance - is particularly relevant to helping rural inhabitants build sustainable livelihoods. Pertinent USAID earmarks associated with these projects include Maternal Child Health, HIV/AIDS, Biodiversity, and Malaria. There are signs that additional earmarks may be forthcoming, creating concern at the Mission about how to structure projects that respond to national development priorities and can be systematically attributed to a diverse set of earmark directives. USAID/Washington has set the Water Earmark in the next fiscal year at $3 million with an expectation that this earmark will be maintained over the next four years.

The Mission has a long presence in rural programming, especially in arid and semi-arid parts of the country where most of the population lives on less than $2 per day. This presence gives it a strategic advantage working in rural areas relative to other donors due to its long history and significant in-roads into supporting many basic services. There has been little Mission involvement in urban and peri-urban projects. Important Mission project platforms are a large rural livelihood activity in two arid /semi-arid provinces that has helped rehabilitate water sources, a rural maternal child health project that has engaged in promotion of basic sanitation and hygiene behaviors, and a large rural HIV/AIDS project that has begun to incorporate promotion of improved hygiene practices for people living with HIV/AIDS.

The Mission has recently experienced significant turnover in staff. As part of these changes a long-time direct hire has retired. It was he who requested water earmark funding after a good experience funding rural water access activities under an agribusiness project that has since closed. The Mission director wants to continue and scale-up this type of integrated programming considering the number of earmarks they must account for, the limited overall budget, and the opportunity to leverage other donor projects that are reforming policy and strengthening institutions responsible for decentralizing rural water services.

The staff is reflective of the Mission's project portfolio. Direct Hires (DHs) and Foreign Service Nationals (FSNs) have academic backgrounds and experience in economic growth, governance, public health, natural resources management, and education. The Mission is also staffing up with several new entry and mid-level direct hires assigned to the Mission. However, it is not yet known if any of these new officers or PSCs has a background or experience in water supply and sanitation services. Although no one is a water specialist, the more experienced DHs and FSNs have tracked the progress of national water reforms in the past few years. Currently, water, sanitation, and hygiene (WASH) projects are limited to hygiene promotion through health workers and at schools. These activities include proper handling and storage of drinking water, point of use drinking water treatment, sanitation, and proper hygienic behavior.

USAID/ Ruzabwe recently came under pressure from both the government and the international donor community to engage substantively in the ongoing water crisis precipitated by a three-year drought. As a result, assisting rural provinces to cope with the current water crisis and to adapt to potentially long-term shifts in climate has fast become a priority programmatic element of the Mission's overall country assistance strategy. To help the rural poor cope with the climatic variability in these already arid lands, the Mission wants to examine project activities that improve land and water resources management, improve domestic water supply, improve agricultural yields, and reduce diarrheal diseases.

THE WASH SECTOR IN RUZABWE

Water Resources

Step 2:
Describe the WASH Context

Cycles of flood and drought are a way of life, but in the last 30 years the frequency and severity of the cycle is increasing. The failure of rains in the past three years has resulted in emergency measures. Some of these effects are felt in urban areas through considerable water rationing/cutoffs and brownouts, but rural livelihoods are disproportionately affected as poor domestic water service and rain-fed agriculture threaten the very livelihoods people depend upon, their health and food security, as well as the viability of their growing communities. As water scarcity persists it intensifies district level insecurity brought on by divisive national elections, land and water rights adjudication, neighboring country destabilization and may therefore contribute to increased inter-ethnic violence.

Rural water problems occur at multiple scales. First, the arid to semi-arid environment exacerbates all other water problems, and regional climate models suggest decreased rainfall and increased variability. Most streams and rivers are perennial and there are virtually no large-scale nearby reservoirs, deep wells, or even the slightest raw water distribution networks to supply water to Ruzabwe's rural areas, although larger secondary towns do have domestic-use only well fields. In rural areas, shallow well sources are located in streambeds and riverbeds. Rope and bucket is the most common manual water lifting technology, but some "rope and washer" pumps are appearing. Deeper boreholes served by hand pumps or by diesel pumps are the most common water sources. Rainwater collection in sand reservoirs and rock basins as well as off household roofs, schools, and other structures is not uncommon.

The last ten years has seen significant growth in export agriculture with large private sector investments and proportional increases in surface and groundwater resources use and undetermined impacts on river flows and groundwater levels. Studies in one important national watershed note that over 85 percent of surface water coming out of the watershed is diverted to agriculture before the river has left the forest, leaving downstream users like farmers and pastoralists in dire dry season circumstances. Another major concern is declining quality of upper watersheds with the rapid conversion of old growth forest to agricultural use.

Institutional Arrangements

As part of reaching Millennium Development Goals (MDGs) for water and sanitation, the government instituted universal sector reform. Experts consider the reform's components (strategy, institutional organization, practice standards, and regulations) to be comprehensive, but government actions designed to address deficiencies in local management stalled and have not been operationalized. The WASH sector has a history of centralized management and decision-making that has focused most government attention

on large internationally-funded urban infrastructure projects. WASH for secondary towns and rural villages has not been well coordinated and there have been few government resources available for capital investment to rehabilitate or replace existing infrastructure or construct new systems. The new institutional setup decentralizes ownership of assets and officially confers responsibilities for operation to community-level Water Service Providers (WSPs). These WSPs, once certified by regional water institutions, are eligible for government-administered capital grants for water system improvements. Likewise, water resource management has been decentralized and Soil and Water Conservation Districts (SWCDs) coordinate and provide extension services for local water resources management in coordination with district, regional, and national authorities, and the local agricultural sector.

Water Coverage

With respect to water for domestic services, statistics report that rural water coverage, based on MDG standards, is less than 50 percent. Rural sanitation is even lower with a coverage rate estimated at 30 percent. Access rates may be even lower, because of gaps in reliable data. Communities lack access to water for two main reasons: 1) they have never managed to appropriately develop a nearby source due to lack of investment capital; and 2) the water system is not functioning because of poor operation and maintenance. The exact number of poorly or non-functioning rural water systems is not known, but a recent three district survey in one province identified over 100 poor or nonfunctioning community water systems. It appears that in many areas with high presence of international NGOs, community WSPs prefer to wait for the next externally-funded water project to re-establish services rather than institute cost recoverable tariff structures and rates. However, the survey revealed that WSPs were much more financially viable and able to sustain high-quality services when providing billed water services to domestic and small-scale agricultural users.

Some rural WSPs are well-performing, yet despite the demand for water industry goods and services, very few businesses can supply goods and services needed to maintain water systems. Therefore, underdeveloped and incomplete value-chains exacerbated the problem requiring communities to purchase water from vendors who truck in water to fill household containers. In turn, some entrepreneurs have drilled their own wells and are charging rates that are five to ten times higher than that of urban customers despite laws forbidding this. With this in mind, local inhabitants believe district and local officials may be corrupt and believe they are colluding with vendors to protect their business in spite of the increased public health and economy possible through a well managed and safe piped water system.

Rural Health and Water-Based Disease

As noted above, access to improved sanitation is estimated to be 30 percent. USAID MCH studies indicate an almost complete absence of key hygiene behaviors including the use and upkeep of sanitation facilities, handwashing with soap, and the proper handling, storage and treatment of drinking water in rural households. This lack of proper sanitation and hygiene, combined with increasing water supply volatility contributes to very high rates of diarrheal disease and high under five childhood mortality rates observed in rural populations. Another significant contributor to child mortality and morbidity is nutritional status—both in terms of raw caloric intake and nutritional balance. USAID work in household livelihoods has documented the positive impacts on health status of household agricultural production during dry seasons.

Ongoing WASH Programs

Over 120 local and international non-governmental organizations (NGOs) are registered with the government as working on WASH issues. The location and activities of these entities is largely unknown, except for a handful of the large international. The main actors in the WASH sector are the Water and Sanitation Program of the World Bank, which supports sector reform and coordination and which is piloting innovative sanitation programs in two rural districts. UNICEF, with funding from European donors is implementing a large school WASH projectin 60 percent of the country's rural districts, and also works through the Ministry of Health to build capacity of community health workers in WASH messaging. Two large international NGOs have rural WASH programs that provide capital for infrastructure, but also devote significant efforts into building the capacity of WSPs to sustain service. One of these has a multiple-use approach that is of particular interest to the Mission where water systems provide for domestic use and small-scale agricultural production.

MAJOR WASH PROBLEMS FACING RUZABWE

Analysis of the above information and discussions with local experts and counterparts to identify the following priority WASH problems that USAID should consider.

Step 3:

Identify Priority WASH Problems

- Mortality and morbidity result from diarrheal diseases and meager livelihoods. Both are related to poor sanitation, poor hygiene behaviors and lack of access to sufficient quantity and quality of water.
- Sector decentralization and reform has not fully reached rural communities. Despite the intentions of the government, formation of WSPs and SWCDs is not supported adequately, and when formed, these local institutions are not able to properly coordinate with district and regional technical and financial support departments.
- Community water systems are not managed properly in terms of governance, operations, and finances, leading to premature failure, wasted investments, and a disillusioned customer base.
- The government lacks capital resources to provide the infrastructure necessary to develop water supplies for rural communities.

WASH PROBLEM FOR USAID INTERVENTION

Selecting the priority problems that the Mission can effectively address requires a detailed analysis using the selection criteria. These criteria are:

Step 4:

Analyze WASH Problems and Select One for USAID Intervention

- Impact on target WASH objectives
- Mission programmatic and geographic strategy
- Mission, earmark requirements, budgets
- Mission skills, capacity, comparative advantage
- Donor activities and USAID comparative advantage or ability to fill gaps
- Presence of champion in Mission or government
- Political will of national counterparts—national priorities and national counterpart availability

Analysis of WASH Problems

Problem 1: A significant portion of child morbidity and mortality is related to diarrheal disease and poor nutrition associated with meager livelihoods. This is the higher order problem that the Mission hopes to solve. It has three main contributors—community water access for 1) drinking and 2) small-scale productive use; and 3) sanitation and hygiene behaviors. The Water Earmark can fund activities that improve access to drinking water as well as sanitation and hygiene activities. Mission experience in small-scale production using water-conserving technologies, and data that indicates sustainability of community multiple-use water systems is much higher than systems that supply just domestic service justify consideration of these three problems. The Mission has field networks and experience in working with rural health organizations and community-based health workers.

Problem 2: Sector decentralization and reform has not fully reached rural communities. Despite the intentions of the government, formation of WSPs and SWCDs is not supported adequately, and when formed, these local institutions are not able to properly coordinate with district and regional technical and financial support departments. The Government and the Mission see this as a core problem affecting all aspects of rural access to water. They also feel that in many situations, formation of strong SWCDs that are linked to local WSPs to better conserve scarce water supplies is an important component of rural WASH programming.

Problem 3: Community water systems are not being properly operated and maintained, leading to premature failure and wasted investments. Studies indicate that there are circumstances that will motivate communities to form or attract and sustain effective WSPs—water that is used to sustain household or community production activities being a key feature. The Mission and Government agree that the project should initially target communities with: 1) poorly or non-functioning infrastructure and 2) WSPs that are either weak or defunct. This is seen as having the greatest potential for impact given USAID's limited resources. USAID would like to apply its Ruzabwe experience in governance and decentralization to the problem of non-existent, defunct, or poorly-functioning WSPs and SWCDs.

Problem 4: The government lacks capital resources (internal and donor) to provide the infrastructure necessary to develop raw water supplies for rural communities. The Mission has some experience in

helping communities leverage local resources and is interested in addressing water supply through a self-help approach. Budget constraints will severely limit Mission ability to implement a capital intensive infrastructure program.

Priority Problem

The analytical exercise has eliminated one problem from USAID consideration (Problem #4 - capital intensive infrastructure development) and indicated that problems #1 and # 2 can be addressed as part of an integrated multiple-use WASH project that focuses on building sustainable local institutions that facilitate WASH access – that is as components of problem #3. This conclusion resonates with Mission desires to most effectively program multiple earmarks while building on areas (programmatic and geographic) of mission strategic advantage. This integrated approach can also take advantage of strong incentives for communities to sustain water systems and management arrangements that result in social and economic return.

So we select Problem 3 as our priority: Community water systems are not being properly operated and maintained, leading to premature failure and wasted investments.

By addressing this as the key problem, the Mission will also be able to directly tackle problems such as water conservation, improved household sanitation and hygiene (due to access to water), small-scale production. Local institutions that sustain high quality water services will in-turn improve livelihoods and reduce diarrheal disease in rural populations. The nature of this problem lends itself to a multi-disciplinary approach that will entail a project integrated within other Mission programs/objectives.

REASONS BEHIND RUZABWE'S WATER PROBLEMS

The Mission has decided to put together a multi-disciplinary programming response that focuses on strengthening institutional management of rural water systems while addressing other priority WASH problems simultaneously (following WASH best practices). Because multiple problems are to be addressed in this integrated project, the core cause analysis may appear daunting, but may well end up being straightforward.

Step 5:

Assess Causes of the Problem and Determine Those of Highest Priority

We examine the problems considering the following six core cause categories: 1) policy, legal and regulatory; 2) behavioral; 3) institutional; 4) financial; 5) infrastructure and technology; and 6) environmental. The purpose of the analysis enables the Mission to prioritize and focus the project components. The analysis was completed through a careful review of documents, and consultations with a broad range of stakeholders and specialists. The final product of this analysis is the list of highest priority core causes organized into components.

Policy, Legal and Regulatory

At the core of improving services through strengthened WSPs is a well-functioning WASH sector. This means that the water sector reform that was instituted five years ago still needs to be fully operationalized in the rural areas. Local policy, legal and regulatory gaps are essentially institutional problems (discussed below). WSPs and SWCDs lack appropriate bylaws, local codes, and standards to govern and control their activities. These bylaws, codes and standards are particularly relevant in multiple-use water systems.

Behavioral

There are two key behavioral problem areas that the Mission is interested in addressing in an integrated project—behaviors that contribute to health and livelihood. The first is the behavior of water users and their lack of participation in and support for WSPs and SWCDs. This encompasses participation in meetings and decision-making, abiding by local laws and regulations around water use and conservation, paying tariffs, water system upkeep, water source protection, and watershed protection. The second is WASH behaviors associated with sanitation and hygiene. In general, community health workers do not promote WASH and school curricula is inadequate to address hygiene behavior.

Institutional

The poor performance of the majority of rural community WSPs and the lack of functioning SWCDs are due to institutional problems. Although there are financial issues as well that undermine the viability of these organizations, the core problems are institutional in nature. Sector governance and system management that sustain operation and maintenance are absent. Human capacity to operate the necessary institutional systems is lacking. Public participation in major water system governance issues is also absent. Links between rural WSPs and other sector institutions (e.g. SWCDs) at district, regional, and national levels are limited, short circuiting access to technical and financial resources (i.e. the national rural water trust fund).

Financial

The poor performance of WSPs has obvious financial causes that the project must address. For various reasons, adequate tariffs or the collection of those tariffs are inadequate to cover recurring costs, much less replacement costs. Replacement parts cannot be purchased, community operators are not remunerated, and funds for system expansion are not saved or leveraged. With respect to recurring costs of system operation and maintenance, there is less an issue with a lack of financial options as there is with institutional mechanisms to collect and manage funds from local water users. System expansion, large-scale renovation, and new system construction (for water supply or water diversion works) in rural areas requires either external capital inputs or more sophisticated financial systems to create more “bankable” WSPs. Capital grants from government and donors are limited and the reach of financial institutions does not extend into poor rural areas. Note that WSPs that are “certified” as viable by the Water Ministry are eligible for capital grants through a Water Trust Fund.

Infrastructural and Technological

Studies have shown that there is a correlation between system failure and the level of technology employed and/or the availability of the right parts and services to sustain even the most basic infrastructure. There are national standards for rural water facilities and infrastructure that were produced in 1988. There are also standards for canals and large-scale water diversion and flow measurement structures from 1979. Both sets of standards are considered inadequate by sector experts. Supply and service chains otherwise known as business development services (BDS) are nonexistent or suffer from severe gaps in rural area coverage.

Environmental

There are two potential environmental issues associated with the project—upland watershed protection and potential contamination of surface and groundwater by latrines or toilets. It is expected that most

communities will be using deeper groundwater sources and will not be addressing watershed issues or the impacts of dry pit latrines that are separated from unconfined aquifers by meters of soil.

KEY PROJECT COMPONENTS

Step 6:

Organize the Project into Components

We apply the Selection Criteria to the identified core causes here. Essentially we are ensuring that the core causes that we choose to address are ones where USAID/Ruzabwe can have the most significant impact.

Criteria Type	*Situation In USAID/Ruzabwe*
Impact on target WASH Objectives	USAID/Ruzabwe wants efficiency and budgetary bang for the buck
Mission programmatic and geographic strategy	Rural platforms of agriculture, environmental, livelihood and health; experience with governance and decentralization
Mission, earmark requirements, budgets	Multiple earmarks in health, water, environment and perhaps livelihoods motivate Mission interest in integration. Budget of $3 million per year not sufficient for capital intensive infrastructure.
Mission skills, capacity, comparative advantage	Experience with water resource management n agriculture and environmental contexts, strong health communication domestic water sector, and there are some pilot projects with SWCDs that have implemented innovative water diversion and measuring infrastructure for multiple community projects. Small-scale irrigated agriculture is hampered by lack of affordable technologies and approaches that conserve water. Note that USAID has significant field experience in water-conserving cultivation—particularly at a household or neighborhood level gardens.

Noting that there are strong existing programming platforms in upper watershed management and that USAID 22 CFR216 Environmental regulations will inform how the Mission will address any environmental impacts of water development. The project will not specifically target environmental problems, but will address those problems through partnerships with ongoing programs.

The case for those problems in the behavioral component are similar. There are existing programs involved in hygiene improvement and sanitation with whom this project shall be instructed to coordinate.

PROJECT ACTIVITIES

Step 7:

Select Project Activities

A project to improve sustainable access to rural water requires multi-disciplinary activities. At its core, the project will strengthen local WASH sector institutions to assume their mandated roles under recent water reform. Through this institutional strengthening most of the root problems identified above will be addressed. Interventions outside of those that strengthen institutions will be included in the project insomuch as they contribute significantly to health impacts, incentivize sustainability and can be supported by USAID funding streams outside of the water earmark.

Activities Organized by Project Component

Although all six components are represented below, virtually all of the activities focus on building and strengthening institutions and institutional systems.

Institutional Component

1. WSP and SWCD governance and operational systems that sustain administration, management, operation, maintenance of the water systems are absent.
    - Work within the government's sector reform plan and help update the plan as needed with lessons learned from the Project. If there is no sector reform plan, consider participating in partnering with government and other donors to produce one.
    - Bidders should analyze and recommend incorporation of different management models allowed by Ruzabwe's decentralization law: privatization of the local service through contract with a small-scale private service provider (SPSP), creating private sector entities to support multiple small water systems, establishing small public utilities, supporting local committees of men and women that handle a range of tasks depending on the support received from outside the community, organizing regional government water circuit riders who support small systems, and combinations of these.
    - Develop management models for WSPs and SWCDs based on best practices and models developed in Ruzabwe to date.
    - In whatever management models are promulgated, taking advantage of any economies of scale to cluster the services to different neighboring communities under one manager should be considered as a global strategy.
    - Facilitate partnership and mentoring relationships between organizations to build capacity. Pairing a strong utility with a weak one, or twinning partnerships, can bring immediate, tangible improvements in operations and management. These twinning activities may include peer reviews, technical assistance in developing and implementing improved policies and practices, specialized on-the-job training, technology demonstrations and information exchange.
    - Work with WSPs to develop their own operation and maintenance program. Every performance activity has to be detailed in a procedural guide that spells out the operational actions needed for the system to work, and how to measure the performance against clearly stated standards. Directly related to the operational procedures are the maintenance schedules and procedures that need to be followed.
2. Links between community WSPs and other sector institutions at district, regional, and national levels are limited, short circuiting community access to technical and financial resources.
    - Examine the possibility of organizing regional government water circuit riders who offer to WSPs management, administration, and technical support.
    - Support appropriate government institutions in facilitating any asset transfer that is still pending
    - Work with national government to help train staff in regional water boards to help them better assume their roles and responsibilities towards rural water institutions
3. Human capacity to operate the necessary institutional systems is lacking.
    - Support system for national certification of WSP and SWCD personnel—managers, operators, administrators, etc. With other WASH actors (UNICEF, WSP, large NGOs) help produce standards and training system.

- Until a national certification system is operational, use training and capacity-building approaches developed for rural water managers and operators in Ruzabwe—adapting them as necessary for local conditions and to take advantage of opportunities for learning.
- Institutionalize training in appropriate government institutions to ensure that new staff and leaders are oriented and trained to assume their roles. This can include mentoring, on-the-job training, or formal orientation activities

Financial Component

1. Inability of WSPs and SWCDs to address recurring costs through payment for services (tariffs) is a root financial issue that is directly related to the capability of the local institution.
   - Financial sustainability must be planned for as part of the Project's exit strategy. Other arrangements or partnerships will need to be created to provide early asset failure insurance, financial management training and oversight. These will become part of WSP or SWCD operational systems
   - Introduce basic business planning training to the WSPs and SWCDs
   - Ensure that tariffs are based on cash requirements, with a reserve for repairing or replacing critical equipment, such as pumps and transformers. There must be a transparent system for annual tariff adjustment that is based on actual costs of operation and maintenance and any asset management project that can be sustained.
   - Proper billing and collection systems must be established that collect and maintain information on customers and their water use, maintain well managed billing and collecting services
   - The first step in financial management for a WSP or SWCD is a savings account in a local financial institution. Asset management funds may be out of the scope of reality for many rural communities, but more sophisticated WSPs and SWCDs, perhaps those operating as rural utilities, should consider including these charges in monthly tariffs.
2. System expansion, large-scale renovation, new system construction, and installation of household bathrooms in rural areas requires either external capital inputs or more sophisticated financial or micro-finance systems to provide community or household credit.
   - Because of the lack of formal financial and micro-finance institutions in rural areas that provide credit services, USAID does not feel that resources should be devoted to credit provision activities.
   - Provide a small capital grants through the project to facilitate system repair or expansion when a community can provide at least a 2:1 cash match and all unskilled labor and local materials.
   - Work with communities to address provision to very poor and vulnerable households. Subsidies can take a variety of forms from direct financial support to reduced rates.

Infrastructure and Technology Component

1. Use of appropriate technologies for water systems and sanitation facilities that can be sustained locally through existing supply chains.

- Support local supply chains and support opportunities for small-scale entrepreneurs by facilitating links between WSPs or SWCDs and providers of goods and services—i.e. pipe, pumps, tools, toilets, construction services, hole digging or boring services, raw materials
- Consider activities that improve local provision of WASH products and services through facilitation of training (existing NGO training activities, some private sector industries will train technicians in the use and installation of their products), direct provision of training. Training can address technical skills and business development.
- Support national and local work at establishing technical norms for rural WASH technologies and infrastructure. Help districts institute building codes for WASH infrastructure

The overriding consideration in trimming the activity list in each component is a need to "keep things simple". This is the case in the Ruzabwe WASH project because: 1) this is the Mission's first project in this sector and to date has not brought in an in-house WASH specialist; and 2) the implementation environment in Rural Ruzabwe is difficult—tough logistics, poor communication, limited access to markets, limited human and institutional capacity, and a population focusing intensively on day-to-day livelihood issues with limited time to devote to the activities of a large complex project.

Again, the Ruzabwe Rural WASH Project will be and institutional development and strengthening project. The activities listed below under the finance and infrastructure components are closely linked or are subsets of institutional strengthening activities.

Below are the final activities for Ruzabwe WASH that remain after applying the selection criteria.

1. WSP and SWCD governance and operational systems that sustain administration, management, operation, maintenance of the water systems are absent.
   - Work within the government's sector reform plan and help update the plan as needed with lessons learned from the program. If there is no sector reform plan, consider participating in partnering with government and other donors to produce one.
   - Bidders should analyze and recommend incorporation of different management models allowed by Ruzabwe's decentralization law: privatization of the local service through contract with a small-scale private service provider (SPSP), creating private sector entities to support multiple small water systems, establishing small public utilities, supporting local committees of men and women that handle a range of tasks depending on the support received from outside the community, organizing regional government water circuit riders who support small systems, and/or combinations of these. The bidder should base the selection of institutional models for WSPs and SWCDs based on best practices and models developed in Ruzabwe to date.

CROSS-CUTTING THEMES

Step 8:

Determine the Most Relevant Cross-Cutting Themes

Step 9:

Incorporate the Cross-Cutting Themes into the Design

The heavy lifting of designing the technical content for the Project's Water Statement of Work is complete. One final activity will ensure that the technical content addresses the key cross-cutting factors that are present in all or most USAID development projects. The actions to consider for addressing essential cross-cutting elements of WASH programs are presented in the table below.

Cross-Cutting Theme	Actions to Address the Theme
Build Capacity	▪ This is core activity of this integrated project—from local level community-based health workers, to WSP staff, to the staff of regional institutions. ▪ Communication and promotion to improve behaviors of water users as members of the WSP or SWCD, or to improve hygiene and sanitation behaviors will build capacity in households ▪ There is Significant focus on building institutional capacity to provide future staff training, so as not to lose talent and capacity nor to rely on external support to rebuild lost capacity
Cultivate Leadership	▪ All institutional strengthening materials must contain modules on team, institutional or corporate leadership. These trainings must improve skills as well as provide content. ▪ Teams must understand their role in providing leadership and be mentored to assume that role ▪ Use of institutional and governance systems that enhance or support strong team or individual leadership are favored over reliance on charismatic local personalities
Strengthen Civil Society	▪ Bidders will be requested to present a strategy for involving civil society's role in the project on national regional and local levels. There are clear roles for institutions of higher education, local philanthropic organizations, local religious organizations, NGOs in supporting rural water development through advocacy, win/ win relationships with the project.
Encourage Consultative Stakeholder Participation	▪ Formalizing general models, tools and training materials to create culture of consultative participation in all institutions targeted by the project ▪ Bring local users/consumers into activities that solicit their inputs and consensus on WSP bylaws, regulations, policies and standards. ▪ Specify that bidders must clearly illustrate how local users/consumers, local leaders and decision makers, and local civil society, will have effective roles in planning and decision-making ▪ ensure that project leaders are participating in national water, sanitation and environmental health working groups, and other similar for a.
Promote Transparency and Combat Corruption	▪ Specify in Statement of Work that structural and management models build in systems for public vigilance, reporting, and communication of management, administration, procurement and financials ▪ Include these modules in all team and leadership training ▪ Institutionalize best practices in systems for procurement, warehousing, financial management in all WSPs and SWCDs.
Implement a Gender Equity Strategy in Water, Sanitation and Hygiene Programs	▪ Support nontraditional roles for women in system management and operation, especially if migration of men is an issue. ▪ Reach non-traditional audiences by techniques like promoting health and hygiene with water resource groups and promoting environmental stewardship at health and hygiene activities ▪ Encourage female entrepreneurs to supply WASH products and services and provide them business and technical training
Adopt Pro-Poor Strategies and Policies	▪ Require that bidders submit plans for ensuring that the poorest receive access to services. This will include affordability strategies for hook-up and services, how subsidies are to be administered, ▪ Propose activities that offer employment to the poor and vulnerable ▪ Produce communication materials and approaches that target the poor and low-literacy populations that explain laws, regulations, policies and other important information relevant to the project
Adapt For Climate Change	▪ Important content of technical and training support to regional and district organizations that will provide technical assistance to local WSPs and Water Resource Management committees—must have plans to address water scarcity through conservation, alternate sources, etc. ▪ Technical criteria for designs, watershed practices, irrigation technologies to consider

Cross-Cutting Theme	Actions to Address the Theme
	worst case scenarios and need for resiliency and flexibility in addressing scarcity and in taking advantage of peak rainfall and runoff events (storage and recharge)
Reach Vulnerable Populations	▪ Likely that a high percentage of target populations are people living with HIV/AIDS (PLWHA) households. Request that bidders outline specific strategies and interventions to make water and sanitation infrastructure user friendly (wheelchairs, crutches, walkers), to ensure that PLHAs and caregivers practice proper hygiene and sanitation ▪ Vulnerable households are often poor and pro-poor approaches outlined above should be employed to ensure that PLWHA households have proper access to water and sanitation ▪ Request of bidders a strategy for providing employment to vulnerable women and youth
Managing the Transition from Conflict or Emergency Situations to Sustainable Development	▪ Request bidders to submit draft strategy on how the Project staff would suspend normal activities to work with USAID OFDA WASH programs to a) respond to a major natural or manmade disaster and b) transition from that emergency back into a sustainable development programming model ▪ Request of bidders their corporate capability to design and implement these kinds of transitional programs in coordination with OFDA emergency response activities
Implement a Results Reporting, Monitoring and Evaluation Program	▪ Bidders must present M&E systems that will handle reporting on progress, outputs and impact indicators for each relevant earmark—e.g. Water, Biodiversity, MCH, ▪ The Project Management Plan must be a part of this M&E system.

THE STATEMENT OF WORK

Step 10:

Finalize Design for Statement of Work

A USAID Statement of Work contains multiple sections. The most difficult part of the Statement of Work is the general description of the technical elements of the procurement document. The following table indicates how to produce other important content for the Statement of Work and bidding document.

Statement of Work	Action Required
Project Title	▪ Ruzabwe Rural Water Project
Project Objectives	▪ Reduce high rural mortality and morbidity resulting from diarrhea-causing diseases and meager livelihoods by addressing: low rural access to sufficient quantity and quality of water. ▪ Improve capacity of institutions and institutional systems to sustainably manage water for domestic use and small-scale (household, neighborhood) production ▪ Improve ability of households to improve their livelihoods with small-scale production ▪ Through partners - Improve overall water management and watershed health to ensure constant quality and quantity of water, and address deficiencies in sanitation and hygiene behaviors
Introduction and Background	▪ These sections are essentially the outputs of the sector analysis done in Chapter 2: Identifying the WASH Problem.
Technical Content: Problems, Core Causes, Activities	▪ See the outputs of Chapters 3 and 4 of this manual to complete this section
Budget	▪ The $4 million annual budget includes water earmark ($3 million) and unrestricted for agricultural, livelihoods etc. ($1million)
Geographical Focus and Sequencing	▪ Mission has selected one region ("lowest hanging fruit") for Year 1. There will be a 1½ to two-year intensive activity cycle in a region and six months to one year of very low

Statement of Work	Action Required
	intensity follow-up to promote sustainability. Assuming that funding is sufficient, the project will enter a second region in Year two and a third region in year three—working in three regions total.
Expected Results: Output Targets and Indicators	▪ Based on sketchy assessment information on the number of poorly functioning and non-functioning systems, the logistics of serving these rural areas, moving funds into a small grants facility, and local labor and material costs, the project has the following targets: move institutions (RWUAs, and WSPs) toward sustainable operation of water systems (see M&E section for indicators)—25 in Year 1, 60 in Year 2, 80 in Year 3 and 60 Year 4. Improve Water supply management functions of three regional and 52 district institutions.
Staffing	▪ Mission feels that bidders should have significant leeway in staffing and therefore have named a director and deputy director as key staff, and have suggested that local sectoral experts manage components of the integrated project.
Project Management	▪ Adapt a mission template in requesting this section—noting that the integrated project has special concerns (below)
Performance Monitoring Plan	▪ Not to be confused with the M&E plan, the PMP tracks tasks and activities that are implemented to attain the project results. The M&E plan focuses on measuring these results. The Mission will request a draft PMP.
Monitoring and Evaluation Plans and Descriptions	▪ Macro indicators taken from USAID and Mission documents include the Earmark documents. Adapt certain governance indicators to this project to help bidders monitor institutional strengthening accomplishments
Knowledge Management	▪ The Ruzabwe Mission wants language included in the Statement of Work or bid document that asks the bidder to address information and knowledge management and learning—perhaps as part of the PMP section. The bid document will instruct bidders that under USAID direction, reports and other documents will be shared to partners and posted on the USAID Development Experience Clearing house and environmental health website.
Special Instructions, e.g. partnering, integrated programming, and grants facilities	▪ In the Ruzabwe Rural WASH Project, there are any number of international, national and local WASH partners with whom bidders can associate, and the Mission would like to maximize the employment of local institutions. The bidder must list these partners and thoroughly describe the roles, responsibilities of each and how these local organizations will be managed in the project. Since hygiene and sanitation and upper watershed work must be addressed through partnership, provide specific direction on partnering with key practitioners in selected geographic regions. ▪ A small grants facility using only Water Earmark funds for infrastructure improvements is contemplated to help drive community participation around institutional reform. Local NGOs, CBOs, WSPs, and WRUAs are eligible. Grant funds must be 100 percent attributable to the earmark and may not exceed $10,000 per community. Must be matched by significant counterpart contributions.
Cross-Cutting Themes	▪ See Steps 8 and 9 in this case study for Ruzabwe an analysis of each of the cross-cutting themes.

The Mission has consulted with Government of Ruzabwe representatives, and local WASH specialists to decide that the project will initially target one region and request that bidders prepare a plan to expand work into a new region at the beginning of Year 2 and of Year 3 of the four year project. The first targeted region was selected because of 12 years of Mission programming experience there. Data show that over 100 rural water systems are in disrepair, a regional water board that is staffed and has done some initial coordination with districts and communities, a large upland watershed with five rivers that provides the Mission opportunities to improve water resources management, and market links to the regional and national capital that may enhance the value of small-scale production. The target region selected for start-up represents the greatest probability of success available to the project.

The Mission has been able to secure $1 million per year of non-earmarked funding to complement the $3 million per year of water earmark support. This funding can directly support activities in water resource management, including work strengthening the SWCDs. These non- Water Earmarked funds can also fund the productive use and livelihood aspects of the water systems.

- Bidders will be required to account for attribution of all of the activities they propose to the different earmarked funds. The project management plan and M&E system submitted by each bidder must describe how this attribution will be monitored and reported.

E PROJECT ACTIVITIES

This annex provides a menu of project activities that the designer may draw upon to write the statement of work. They are organized into six categories that highlight general, water, and sanitation-related implementation goals:

- Encouraging legal, policy, and regulatory reform
- Promoting improved WASH behaviors through different strategies
- Strengthening water sector institutions
- Attaining financial viability
- Fixing infrastructure and technology problems
- Protecting the environment

These categories could serve as project components, and the activities could be tasks in your statement of work. They are the building blocks of your design, just as the cross-cutting themes might be the foundation. These activities will give you direction, but they are not the details. Those grow out of the data collection, visits, interviews, meetings, and consultations you have carried out over the course of this design process, which began in Chapter 2.

We have left the most challenging—but also the most intellectually exciting——part to you: the elaboration of these activities so they best fit the specifics of the water, sanitation, and hygiene problem in your country. To start you off, we include resource material for many of the activities.

ENCOURAGING LEGAL, POLICY, AND REGULATORY REFORM

Write or Revise the Water Law

Assisting the national government in the drafting or revising of a water law is often a requirement to be able to introduce major changes in the water sector, including the creation, fragmentation, or aggregation of responsibilities of key agencies. It can also be the basis for shifting from politically determined management units, such as water authorities, to basin or hydrological units, which better match the natural environment and the water resources. The law may support the revision of authority from one ministry to another, determine standards for water quality, be the basis for appropriations, and set the terms of broad-based policy changes, such as explicit support for the poor or other segments of the population and women's involvement in water management. The revision of an existing water law or the writing of a new one will require resources for research and analysis, public meetings, and other due vetting across the range of stakeholders. Adopting a new law takes time, so, in practice, the reforms it supports are often undertaken in parallel with the in-country legal process.

Support Development of the National Sanitation Policy

Experience shows that sound national sanitation policies have a significant impact on access to services on a large scale. They serve as the foundation on which a sanitation implementation strategy and national- and local-level sanitation action plans are developed, and are one indication of political will to improve access to basic sanitation. In large countries and in those that have decentralized sanitation responsibilities to state and provincial levels, subnational sanitation policies may also be in place. The national government may already have a water supply policy or strategy in place that includes sanitation, but, increasingly, good practice is to adopt a stand-alone sanitation policy so as to ensure attention to the sector. If there is no national sanitation policy in place, support for the development of one is important if the sanitation programming hopes to reach scale. USAID has considerable experience in assisting countries to prepare national sanitation polices and has produced guidelines for the assessment of these policies.

Eliminate Legal Obstacles to Service Delivery

A key constraint to the provision of basic services in urban areas, particularly to the poor, relates to land ownership and tenure issues. Land tenure is the right of an individual or group to occupy or use a piece of land. It can be via ownership or lease. Municipal policies often prevent utilities from providing connections to residents who do not have legal tenure. This works against the poor, particularly slum dwellers who reside in informal settlements without legal title to the land they occupy and who face significant obstacles in their attempts to own or obtain rights (for example, through leasing) to land. Regardless of land ownership, in fact municipal water supply and sanitation utilities, as well as private service providers, often have little incentive to provide services to illegal settlements if there is no opportunity for profit. The residents are too poor to pay for services and have limited access to credit. This, coupled with the high cost of service provision, which is often prohibitively high due to geographic or technical issues, in the absence of any pro-poor incentives, means no services for the poor. Lack of land tenure also means that slum dwellers have little incentive to invest in any household improvements, such as water infrastructure or sanitation facilities. With no protection from eviction, these investments are too risky.

The traditional approach has been to tackle land titling head-on, but this can be very time-consuming and complex. Ultimately, legal reform to enable the poor to gain secure land tenure is the answer, but meanwhile, innovate strategies to delink service provision from land tenure are the key. One approach is to allow alternative documentation; for example, documents such as ration cards, identify cards, or “no objection certificates” from the landowners. Another approach is to make a single bulk water or sewerage connection at the border of the informal community and allow communities or small-scale providers to operate services. Community titling has also been used. On the household level, providing guarantees against eviction has shown that residents of informal settlements are willing to invest in improved water supply services, although less so for sanitation, when they have such a guarantee. Approaches that include measures to help ensure that the utility will make a profit include giving nongovernmental organizations (NGOs) responsibility for service payments, which they negotiate with the community.

USAID Environmental Health Project. 2002. “Guidelines for the Assessment of National Sanitation Policies.” http://www.ehproject.org/PDF/Strategic_papers/SRSanPolFinal.pdf.

Restructure the Water Sector

Reforms in the water utility sector are essential in raising the efficient, cost-effective, and reliable performance of water supply and sewerage services. The need to effect reforms in the water utility sector is usually signaled by a variety of generally known, but often long ignored, performance indicators at the utility level. Typical indicators, in this regard, would include lack of full cost recovery; high rates of non-revenue water; chronic underpricing of water supply and sewerage services; low bill collection rates; an increasing number of illegal connections; overstaffing of utilities; lack of financial reserves for capital repair, replacement, and renewal; lack of clarity in utility ownership/administration; and lack of political will to capitalize on economies of scale through the aggregation of service structures.

Tackling reforms often means implementing some difficult, but necessary, measures, so that there is a clear separation of the policy, regulatory, and service delivery functions that operate within and affect the sector. Furthermore, by virtue of the fact that water utilities are in a unique role of being both an essential human service and a natural monopoly, it is understandable that it must also be a highly regulated activity to ensure safety, reliability, and fairness to both the general public and the service provider. For that reason, the regulatory framework in the sector must address compliance as well as technical and economic issues, with each usually being performed by different branches or institutions of government.

Improve Compliance Regulation

Compliance regulation has to do with the standards that a utility must meet to produce and provide the general public with safe drinking water and to remove, treat, and dispose of wastewater in an environmentally responsible manner. Such compliance would involve, at a minimum, drinking water quality, which is commonly addressed by World Health Organization (WHO) standards and further captured in national standards, and treated wastewater effluent standards, which can vary based on receiving stream conditions and the application of water quality management models applied in a particular country. In developing countries, the struggle is to attempt to meet drinking water standards that are at the WHO level. WHO produces international norms on water quality and human health in the form of guidelines that are used as the basis for regulation and standard setting in developing and developed countries worldwide. Treated wastewater effluent standards tend to be adopted at some public defendable standard, but with little or no consideration of the economic reality of funding the capital and operating cost to meet those standards. For this reason, it can be far more productive to take a phased and more practical approach to treated wastewater effluent standards, so that affordable funding priorities can be established and achieved with a steady progress to more globally acceptable standards.

Improve Technical Regulation

Technical regulation addresses the technical standards that a country establishes to ensure the reliability of the performing assets that are employed by a water utility. This could include acceptable technologies and process standards for the treatment of water supplies to achieve the drinking water standards, as well as the technologies and process standards for the treatment of wastewater. However, it could also address such points as design standards that ultimately affect capacity calculations such as water demand rates, peaking factors, pipe trenching, and backfilling; piping standards; and materials of construction. A frequent criticism of technical standards for both water and sanitation infrastructure in developing countries is that, for a variety of reasons, they result in a mismatch between the technology provided and what people want, can afford, and maintain. Technology should not be regulated to the extent that it mandates one technology regardless of the application, as often happens. Instead, a choice of technology

should be available based on an assessment of the costs (both for building the facility and for operations and maintenance) and the technology's effectiveness in a specific setting. For example, it is inappropriate to introduce piped sewage if there is no capacity to adequately treat the effluents. Strategies and technologies that allow for raising standards incrementally should be encouraged. One such example is the use of the "sanitation ladder," a concept that uses rungs of a ladder to symbolize progression from the most basic of sanitation facilities, pit latrines, to, over time, increasingly higher levels of technology. The objective is to get started at some rung of the ladder—not the top.

Improve Economic Regulation

Economic regulation addresses the need to ensure fairness in the pricing of water supply and wastewater services, in light of the natural monopoly character of this essential service sector. In this case, it is important to recognize that fairness is a two-way street. The economic regulator does not function, as is commonly misunderstood, as the protector of the people's rights to water at a cheap price. Rather, the economic regulator's concern for fair pricing is also focused on the needs of the service provider, the utility, to be able to perform its services at the pricing level requested. This is of particular concern in transitioning countries where the concept of decentralization of government has brought with it the almost dogmatic belief that local officials know best and should have the absolute right to set prices for services as they deem appropriate for the people. The outcome is often a series of short-term, politically driven prices that usually do not allow for full cost recovery and that then bring the slow deterioration of the utilities' assets and their performance. Economic regulation is required, regardless of whether the provision of services is from a publicly or privately owned utility. A good economic regulatory system consists of appropriate legal instruments and organizations. The choice of an economic regulatory model should be based on whether it is likely to perform the necessary functions competently, predictably, and in a manner consistent with local culture and capabilities.

PROMOTING IMPROVED WASH BEHAVIORS THROUGH DIFFERENT STRATEGIES

Promote Community-Led Total Sanitation

One important objective of any sanitation project where open defecation is widely practiced is to eliminate this behavior. In contrast to focusing sanitation activities on individual households, community-led total sanitation (CLTS) is an approach that centers on changing the sanitation behavior of whole communities. CLTS involves facilitating a process to inspire and empower communities to stop open defecation and to build and use latrines, without offering external subsidies to purchase hardware such as pans and pipes. CLTS uses participatory exercises such as village mapping of defecation sites, feces calculation, and a community "walk of shame," which ignites disgust about open defecation in the community. This disgust is harnessed to commitment and action at the household level to end open defecation. Community-level rewards for ending open defecation replace individual subsidies. CLTS creates demand for sanitation—demand that can be met by linking the activity to a sanitation marketing project or an existing market of sanitation goods and services. Developed in 2000, CLTS was first applied in rural villages of Bangladesh and has since been applied in more than 20 countries in Africa, South America, and elsewhere in Asia. While the long-term sustainability of CLTS, as well as the scale-up potential, remains to be proved, success to date supports the use of this approach. USAID has experience with CLTS, and numerous resources are available to support project design.

Kamal, K., and R. Chambers. 2008. "Handbook on Community-Led Total Sanitation." http://www.communityledtotalsanitation.org/resource/handbook-community-led-total-sanitation.

Apply Proven Methods for Social Mobilization

Social mobilization methods have a long history in the field of international development. Popular methods such as participatory hygiene and sanitation transformation, participatory learning and action, participatory rural appraisal, and Paulo Freire's dialogue approaches are well-known examples of social mobilization methodologies that are used to engage a population and to work with affected communities to identify problems, solutions, and actions. Central to these approaches is inclusion of diverse community voices in analysis and decision making, including women, ethnic minorities, and marginalized populations. Addressing community problems in this participatory fashion, which maximizes community contributions, context, and ownership, leads to initiatives that tend to be more feasible and sustainable. Community-led total sanitation, for example, has successfully ignited communities to commit to end open defecation and dramatically improve hygiene and sanitation behaviors. Other ways to promote hygiene, safe water, and sanitation improvement through community actions include tenant organizing, cleanup days, parades, school to community outreach, and community policing of open defecation.

Create Sanitation Markets

Sanitation marketing is an approach to attain household sanitation coverage by harnessing the power of the marketplace to devote household resources to installing household sanitation infrastructure. Sanitation marketing projects study the demand and supply characteristics of the nascent sanitation market and then implement options to promote raw demand for sanitation and help male and female consumers, including the poor, articulate that demand in the form of desired solutions. Implementation options also include working with the private-sector providers of goods and services to make the desired technical solutions available in the marketplace; identifying or developing the financial instruments needed to enable a household to purchase the sanitation goods and services it desires; and working with government to support the market through policy, norms, and promotion.

Water and Sanitation Program. 2004. "The Case for Marketing Sanitation." August. http://www.wsp.org/UserFiles/file/af_marketing.pdf.

Promote Household Drinking Water Treatment (Point-of-Use Treatment) Through Private Markets and Public Channels

The treatment and safe storage of drinking water at the point of use (POU) have been shown to reduce the risk of diarrheal disease by 30 percent to 40 percent. There are a number of effective treatment methods endorsed by CDC/WHO, including boiling, chlorination, bio-sand and ceramic filtration, solar disinfection (SODIS), combined filtration/chlorination, and combined flocculation/chlorination. Each has advantages and disadvantages, and the appropriateness of a particular system largely depends on local conditions. Various approaches have been proved effective in promoting POU, including through retail sales in social marketing projects, promotion and/or distribution by health extension workers in home visits, and by sale for small profits by community agents.

Integrate WASH into Health Extension

While mass media, technology, and outside experts can play an important reinforcing and legitimizing role in improving hygiene practices, the key to effective hygiene behavior change is interpersonal

communication among community members themselves. This is implemented through existing government maternal and child health extension projects that work through community structures such as mothers' groups and existing cadres of community volunteers and health or development workers. Interpersonal communication occurs during group events such as public health demonstrations, meetings, and community festivals and most effectively via individual or small group counseling. Outreach workers assess current water handling methods, water storage and treatment, feces disposal, and/or hand-washing practices and together with householders select improved practices on which to focus, breaking these WASH practices down into effective, but feasible, small, doable actions that represent movement toward ideal behaviors, which the outreach worker then negotiates and promotes in an individual household.

Water Supply and Sanitation Collaborative Council. 2005. "Sanitation and Hygiene Promotion: Programming Guidance." http://www.who.int/water_sanitation_health/hygiene/sanitpromotionguide/en/index.html.

Build Public–Private Partnerships for Hand Washing with Soap

Proper hand washing with soap is a cost-effective way to prevent diarrheal and other diseases. In this endeavor, the public and private sectors are engaged in a coordinated way to do what each does best, creating and marketing products and enabling technologies such as affordable packages of soap and watersaving devices such as the tippy tap, and delivering them through both public- and private-sector channels. Market mechanisms deliver affordable products to consumers who are willing to pay for something they value. Public–private partnerships saturate a population with targeted marketing messages that promote proper hand-washing technique and timing and the use of soap. The messages can address a mix of social, cultural, gender, emotional, and health-based motivators that are designed to provoke the desired behavior change.

The World Bank. 2005. "The Handwashing Handbook." http://siteresources.worldbank.org/INTWSS/Publications/20389151/HandwashingHandbook.pdf.

Work with Schools to Promote Improved WASH Practices

WASH projects address children's basic right to learn in a clean and safe environment, while reducing absenteeism. Children are enthusiastic change agents who can bring WASH messages home and show families how to practice hygiene. Many schools in the developing world lack toilets, clean drinking water, or hand-washing facilities, leaving students and teachers alike to resort to open defecation and subsequent impacts on child health. Without separate clean and safe toilets with cleansing materials, girls will leave school at an early age. The presence of such toilets has been shown to be the single most important factor in keeping girls in school. Many countries have adopted a WASH-friendly schools approach that includes policy changes within the education sector, with standards for hardware, classroom and school-to-community activities, teacher training, curriculum reform, and sanitation and hygiene infrastructure improvement, including providing a safe water system through on-site treatment and safe storage of drinking water.

UNICEF. 2007. "Towards Effective Programming for WASH in Schools." http://www.unicef.org/wash/files/TP_48_WASH_Schools_07.pdf.

Use Social Marketing to Reach Consumers

Social marketing is the application of marketing principles and tools to achieve behavior change for social good, and has been used in public health to achieve large-scale changes in health-related personal and household behaviors, including the use of bed nets, condoms, household water treatment products, and hand washing. Social marketing can bring together the public and private sectors to pool resources on behalf of a common objective. By targeting a range of factors that motivate behaviors in male and female adults and youths and treating the intended audience as consumers rather than beneficiaries, social marketing initiatives have proved successful in changing some key health behaviors when more conventional health education has proved less successful. Social marketing approaches consider the 5 "Ps"—price, place, product, promotion, and policy—and shape their marketing mix to make products and services desirable, affordable, and deliverable to consumers in convenient places.

STRENGTHENING WATER SECTOR INSTITUTIONS

Conduct a Sector Reform Assessment and Prepare a Sector Reform Action Plan

When the water supply and sanitation situation looks all confused, when no one and everyone is in charge of delivering water supply and sanitation to urban and/or rural areas, when service delivery is poor and getting worse, when people are clamoring for services but no one is responding, and when it seems there is no one who can truly be held accountable, then maybe it is time to step back and consider reforms that could restructure the institutional arrangements and define the policy issues that are being ignored or simply not addressed. Water sector reform assessments and the development of sector reform action plans are best conducted with a broadly based group of interested and committed stakeholders. This process is not easy, but done well, with patience and objectivity, it can deliver results that can breathe new life into a stagnated situation. When considering sector reforms, consider guiding the process along the lines of the separation of functions: policy/legislation, regulatory, and service delivery. Applying this suggested framework will provide a means of separating the issues and addressing them in logical groupings. This should then allow for the proper formulation of policy decisions, followed by specific action plans to bring about the desired reforms.

Decentralize Water and Sewerage Services

Decentralization means the transfer of authority and responsibility for water and sewerage service provision from the national to subnational governments. Subnational governments are often better positioned to identify local preferences for service levels and quality, and accountability can be enhanced by making decision makers more responsive to poor and non-poor male and female customers alike. When considering the decentralization of services, it is important to ask the question, who will own the assets? It is risky to have one level of government own the assets and a lower level of government be responsible for operating and funding the capital repair and replacement of those assets. It is only human nature to care more for those things we own than for those things we simply rent or use at no capital cost. Secondly, it is wise not to confuse decentralization of authority and responsibility, as well as ownership, with fragmentation of reasonably functioning regional utilities. Water supply and sanitation systems have been well documented as enjoying an economy of scale; fragmenting them in the decentralization process, by pushing them down too far, may put the authority and responsibility theoretically closer to the

people but could destroy the economic efficiency and financial sustainability of the utility services, and compromise access to highly capable technicians and managers.

Institutionalize Performance Monitoring and Benchmarking

Performance monitoring is a valuable tool for improving water supply and sewerage utility performance. Benchmarking provides comparisons between utilities or against standards that help to shape policy, strengthen regulation, and provide management incentives for improvement. Defining a set of performance indicators and targeted standards for the sector in a country, and raising the awareness of both utility managers and public officials about the importance of monitoring these indicators and trending performance toward the targeted standards, is critical to improving the operational performance and efficiency of utilities. It is important to understand that performance monitoring and benchmarking projects are long-term commitments in support of an overall sector regulatory process and will need a sustained budgetary commitment to provide the desired results and benefits. The International Benchmarking Network for Water and Sanitation Utilities (IBNET) provides direct access to the world's largest database for water and sanitation utilities performance data and includes more than 2,000 utilities in 85 countries, many in the developing world (see http://www.ib-net.org).

The IBNET Toolkit, which includes a set of core indicators on which stakeholders can build their own customized measurement and monitoring system, at http://www.ib-net.org/en/texts.php?folder_id=117&mat_id=97&L=1&S=3&ss=4.

Corporatize the Utility

Corporatization is the reorganization of a government utility department into a separate legal company, fully owned by the government, or in case of a more regionalized utility, by a group of local governments. The act of corporatization creates an economic ring–fence around service provision, to include assets, finances, and operations from the government's other functions. Corporatization can stimulate performance improvements by increasing operating and financial autonomy, limiting political interference, and improving management incentives. Critical issues for successful corporatization include the composition and mandate of the corporate oversight board, asset ownership, transparency and disclosure, financial procedures, insolvency and bankruptcy procedures, and personnel and procurement rules.

Encourage the Clustering or Aggregation of Small Utilities

Larger utilities generally provide services at lower unit costs than smaller utilities, due to economies of scale. They are able to spread costs across a wider customer base or have lower input costs due to bulk purchases. Smaller utilities also often cannot afford the financial management and technical expertise they need, and their small size often limits their access to finance. Most utility clusters are formed by neighboring towns, but they can include many municipalities. Economies of scale can begin to be truly realized by utilities serving populations in the range of 125,000 to 150,000 people but can tend to trail off above a certain point. Aggregations can be weak, such as with the informal sharing of expensive resources, or strong, such as when a single utility serves multiple municipalities. Political interference is less likely when municipal oversight is pooled in an aggregated utility.

Develop Sound Management Models for Water Supply and Sanitation Systems in Small Towns

"Getting it right" in small towns is essential if access to safe drinking water is to be increased, because much of the developing world's population lives in communities of roughly 2,000 to 50,000. These communities lie somewhere in between urban areas, which use a utility model for water supply service delivery, and rural areas, which traditionally have used community management models. Small towns are generally too large for community management to work effectively but too small to warrant the involvement of large private companies or water utilities. Small-town water supply service provision is often extremely poor, characterized by sporadic government handouts for rehabilitation or expansion, followed by long periods of deterioration. Generally, there is high demand for better water services in small towns, and, therefore, improved service delivery is a welcome and profitable activity, even when users have access to free alternative water sources, such as private or public wells. The challenge is to develop small town water supply systems with management models, engineering designs, financing arrangements, and professional support options appropriate to the setting. Governments may need to identify appropriate management arrangements that can cut across more than one town, ensure that design and financing requirements are suited to these towns, and make arrangements to secure effective professional support; for example, by contracting with local partners.

The World Bank. 2007. "Principles of Town Water Supply and Sanitation: Parts 1 and 2." Water Working Notes, no. 13. December. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWAT/0,,contentMDK:21838073~menuPK:4796187~pagePK:148956~piPK:216618~theSitePK:4602123,00.html

Water and Sanitation Program. 2009. "Small Towns: Challenges and Scaling Up." Workshop proceedings. June. http://www.wsp.org/index.cfm?page=page_disp&pid=20823.

Improve the Sustainability of Rural Community Water Supply Systems

The primary management model for rural water supply in the past decade has been community management, whereby the community is responsible for the operation of its own water service after the implementing Mission has left. The belief is that by instilling a sense of ownership, promoting participation, and sharing costs, the water supply services will be sustainable. In reality, the model has proved to be flawed because rural areas generally lack the specialized personnel, transport systems, spare parts supply chains, or communications networks that facilitate the successful, uninterrupted management of a water supply system. Poor operation and maintenance is also related to insufficient funds, lack of incentives for private-sector supply chains, external donor reluctance to finance operations and maintenance, and poor financial management systems on the community level. As a result, throughout the developing world, a sizable percentage of the rural water supply infrastructure installed in the past 10 years is now out of order, with no hope on the horizon for its repair. Improving the management of rural systems involves incorporating different management models, including privatizing the local service, creating private-sector entities to support multiple small water systems, establishing small public utilities, supporting local committees of men and women that handle a range of tasks depending on the support received from outside the community, organizing regional government water circuit riders that support small systems, and using a combination of these methods. The critical function of these management schemes is to charge users for their water use and to manage these funds to support, at a minimum, recurring system costs. For more information, see:

The World Bank. 2004. "Rural Water Supply and Sanitation Toolkit for Multisector Projects." http://www- wds.worldbank.org/external/default/WDSContentServer/ WDSP/IB/2005/07/29/000012009_20050729090303/Rendered/PDF/331630rev0PAPER0ENGLISH0rwss 1pub.pdf.

Introduce or Expand Consumer, Zone, and Bulk Metering

Any utility intending to sustain or achieve pressurized water supply, on a 24-hour-per-day basis, must consider comprehensive consumer metering of water supply. Unmetered water supplies that are sold on a flat-rate basis will only lead to wasteful usage, requiring an unnecessary level of water production, which further adds to the cost of water supply as a whole. In time, unmetered water supply will lead to water rationing and intermittent periods of supply. Consumer metering, and applying the principle of the user pays, is what brings rational water usage to the sector and is a critical element to an overall water demand management policy.

Activate Performance Agreements

Performance agreements refer to both formal and informal agreements that: define the roles and responsibilities of the parties, set performance targets over a defined period of time, and set performance-related rewards and/or penalties. They can be an effective way to improve accountability, to clarify authority, to define objectives and to provide incentives for achieving them. A performance agreement both constrains and frees the service provider by setting clear boundaries for it to operate within. An agreement can be between public–public or public–private parties. For example, a performance agreement could be between the headquarters unit of water authority and an operating zone, between a water ministry and a governmental water and sewerage utility, and between a governmental asset management company and a private-sector water operator, etc. Experience has shown that the process of introducing, updating and monitoring a performance agreement is at least as important as formal enforcement.

Water and Sanitation Project, May, 2009. "Performance Improvement Planning: Enhancing Water Services Through Performance Agreements,"http://www.wsp.org/UserFiles/file/PIP5_Press.pdf

Facilitate Water Operator Partnerships to Build Capacity

Pairing a strong utility with a weak one, or twinning partnerships, can bring immediate, tangible improvements in utility operations and management. Mentors share their expertise with recipients within the context of a memorandum of understanding and work project that details member roles and responsibilities, activities, outcomes, timeframes and resources. These twinning activities may include peer reviews, technical assistance in developing and implementing improved policies and practices, specialized on-the-job training, technology demonstrations and information exchange. A typical twinning partnership takes 9-23 months and might focus on reducing non-revenue water, improving billings and collections, monitoring and benchmarking performance and disseminating lessons learned. Utility-to-utility partnerships are a way to gain hands-on experience, build capacity, and transfer best practices.

Make Training a Priority Backed by Test-Based Certification

Routinely conducted and documented training is an essential to building and maintaining the capacity and proficiency of the work force in the water supply and sanitation sector of a country. Training must be viewed and understood to be an investment in reliable and safe performance, and not simply an expenditure that is like a burden on the cash flow of the utility. In this regard, the regulatory function in a

country should set standards for employment that make a requirement to have a certain level certification of a certain position in a water supply and sanitation utility. It is widely accepted in the developed world that only test-based certification will lead to professionalism and performance improvement in the water supply and wastewater utility sector. With certification and standards of qualification, it is possible to further insure that hiring and promotion is more transparent, fair to women, and less politicized. It is for this reason that training alone, that does not require formal, objective testing to certify knowledge and practical application, while good in and of itself, is not sufficient to determine the qualifications and capabilities of an individual to assume a particular responsibility in a water supply and wastewater utility. The certification process is intended to recognize a level of ability, experience, and demonstrated knowledge; recertification helps ensure that individuals maintain their competency and are up to date on developments in their profession. As a minimum, in a water supply and sanitation utility, the lead operators or directors of technical operations should be certified in their fields of water supply and sanitation.

Develop an Operation and Maintenance Program

Some of the essential things missing in poorly performing water supply and sanitation utilities are standards of performance and established procedures to support achieving the desired performance. This is further complicated in transitioning economies where turn-over in key personnel, who were knowledgeable in the systems and could manage them based on their experience, are replaced with less experienced and less prepared qualified staff. The question that needs to be addressed when it comes to operations and maintenance is: What are we supposed to do and how are we supposed to do it? This requires that every performance activity has to be detailed in a procedural guide that spells out the operational actions needed for the system to work, and how to measure the performance against clearly stated standards. Directly related to the operational procedures are the maintenance schedules and procedures that need to be followed to ensure system reliability.

Address Energy-Related Issues

Between two and three percent of the world's energy consumption is used to pump and treat water, and for most of the world's water utilities, energy costs represent their second largest expenditure after labor costs. The U.S.-based Alliance for Energy estimates that most water utilities in the developing world could reduce their energy costs by at least 25 percent if they followed a project of cost effective efficiency actions they have called watergy. A utility energy audit can often be paired with the implementation of a water loss reduction program for maximum impact. Initial attention should be paid to sensitizing utility staff and customers to the importance of energy/water conservation. The utility should create a energy/water efficiency strategy with suitable attention paid to pumps, pipe and valve leaks and theft. The energy audit should pay particular attention to the size and energy requirements of pumps, motors, adjustable speed drives, valves, impellers, capacitors and even note the coatings on pipes. The right sizing of pumps and the selection of energy efficient motors can result in huge energy savings to the utility with a pay back period measured in months. In some countries, energy service companies have been established to implement projects of this sort with their compensation based on the utility's actual reduction in energy usage. The final step in a utility reform project to conserve energy and water is the installation of individual meters.

Use Public–Private Partnerships to Improve Operations

Public–private partnerships (PPPs) refer to any form of agreement between public and private parties in the delivery of water supply and sewerage services. They can be an effective means of improving water and/or sewerage service. PPPs share responsibility for service delivery between the government and the private sector and can provide better value for money than a solely public sector solution by exploiting private sector competencies (e.g. managerial, technical, financial and innovation). There is a continuum of PPP models that transfer more and more former public sector risks to the private sector. Service contracts, transfer little risk to private sector, but can be effective at improving specific functions, such as plant or vehicle maintenance, meter reading, etc. Management contracts transfer the responsibility for asset operation and management to the private sector can encourage enhanced efficiencies and bring in additional expertise. Leasing transfer commercial risks to the private sector, in that they take on an income stream (i.e. billing and collections) and pay fixed lease payments to the private sector. The leasor's ability to earn a profit is linked to its ability to increase revenue, reduce operating costs while meeting desired service levels. Under lease arrangements, asset rehabilitation, renewal and extension obligations remain with the public sector. Under a concession essentially all service provider risks are transferred to the private sector for the contract period. Each form of PPP has a set of prerequisites for implementation. To implement the more sophisticated PPPs, legal and regulatory structures must be enabling and stable, tariffs must recover costs, adequate technical, financial and commercial information must be available and the government must have the capacity to contract and to manage complex contracts.

Use Public–Private Partnerships for Infrastructure

The public–private partnership (PPP) model PPP model can be used to transfer responsibilities to design and build as well as to operate infrastructure under an integrated contract. Under the basic Build, Operate and Transfer (BOT) arrangement, the private sector provides assumes the responsibility for design, construction, operation and maintenance of a new facility and finances its construction. The advantages of the BOT are that it combines responsibility for usually disparate functions typically contracted for separately and that the private sector initially finances the facility. The PPP should provide value for money to the government in that the discounted monetary and the nonmonetary benefits (e.g. speed of program delivery, quality of service and security of supply) should exceed the benefits associated with traditional public sector financing and procurement for the design, construct, operate and maintain functions. Under BOT arrangements, the public sector agrees to purchase a minimum output of the facility which allows the private entity to recover its costs. This shifts the public sector financial responsibility from its capital budget, (i.e. to finance initial construction), to its recurring budget (i.e. to fund annual minimum output payments) allowing the same annual budget amount to cover multiple projects. Ownership of the facility transfers to the public sector at the end of the contract period. In some countries BOTs are called BOOTs for Build, Own, Operate and Transfer. There are many variations of the basic BOT arrangement (e.g. BTO—Build, Transfer, Operate; BOO—Build, Own, Operate which does not transfer ownership at the end of the contract and must be purchased; and DBFO—Design, Build, Finance, Operate where the governments retains ownership while the private sector finances the construction.

Encourage Small-Scale Private Service Providers for Water and Sanitation

A small-scale private service provider (SPSP) is defined as a business organization that provides infrastructure services on a commercial basis to customers that are not being serviced by a national, regional or municipal utility. In the water supply and sanitation sectors, SPSPs meet the demand of an important market segment that is not covered by the water utilities, and which will not be reached by these utilities for some time to come. In many developing countries they reach more customers than the water and sanitation utility. SPSPs take many forms including local family owned informal businesses, cooperatives, community based organizations, for profit businesses, and NGOs. All address how to provide a service that is of an acceptable quality, how to ensure that this service is affordable, and, how to extend services to new clients? SPSPs typically use private capital to develop their business; have a relatively small number of staff; conduct their business in a harsh regulatory environment; are prone to political interference; face difficulties in obtaining financing; and have limited access to knowledge and information. Despite the important, albeit informal, role SPSPs play in reaching the unserved with water supply and sanitation, traditionally, SPSPs have not been recognized by municipal authorities or external support agencies and often ignored in the planning and delivery of water supply services. This is because, operating in the informal sector, SPSPs are unregulated, and usually provide a service delivery system not considered improved i.e. water tanker, bottled water. However, it has been demonstrated that when municipal utilities engage with the SPSPs they are often able to provide better and/or more extensive services on a larger scale. Consumers receive improved and/or cheaper services even if the arrangements are only temporary; SPSPs gain confidence from working with public agencies and are more likely to be willing to expand their operations; and the municipal utilities can focus on improving services in their existing areas. A number of activities on various levels have been demonstrated to be effective in supporting SPSPs. Governments can review and modify laws, rules and regulations that constrain SSIPs from working in the sector; invest in strengthening regulators so that they know how to support, regulate and control SPSPs; and invest in training and capacity building for SPSPs. Municipalities can contract or partner with SPSPs as well as monitor them. NGOs can help SPSPs with finance or technical support. Communities have established local accountability and transparency mechanisms to maintain quality and keep prices down, and lobby local political actors to remove constraints to SPSPs.

Enhance Business Development Services

Similar to their counterparts in developed countries, small business owners active in water supply and sanitation services, lack the full array of skills necessary to sustain and to grow their business. If small businesses, whether formal or informal, are to play a role in expanding access to water supply and sanitation services these skills need to be enhanced. In developed countries most of these missing skills, such as specialized technical, legal, finance and accounting, marketing, information technology, etc., are readily obtainable as services in local markets. Business development services include operational services, those needed for day-to-day operations, and strategic services, which help a business to address medium and long-term issues to improve its performance, to expand its markets and strengthen its ability to compete. In developing countries, many necessary business development services either don’t exist locally or are underdeveloped, especially in rural areas and particularly those that could provide strategic business advice. The direct provision of these services by NGOs or by staff on donor-funded projects can actually undermine the local business development services needed to sustain and/or to expand small scale water supply and sanitation businesses after NGOs move on or projects have closed. Business development services can be enhanced by strengthening existing business development service providers, facilitating linkages between business development service providers and small-scale water supply and

sanitation businesses, and raising the awareness of small-scale water supply and sanitation business owners of the need for business development services so as to create sustainable demand.

Create Private-Sector Supply Chains

The sustainable supply of goods and services for water supply and sanitation continues to be a challenge in developing counties. Often the spare parts distribution networks and the repair services needed to maintain equipment provided by projects do not exist or functions poorly; when the equipment fails, it is not repaired and users return to their original contaminated source of water. Key factors of successful private sector supply chains include: sustainable demand, adequate incentives, and good information flow, effective supply chain management and an enabling business environment. Technology choice is important. Efforts that coordinate regional technology procurements and then provide supply chain and repair training projects have been effective.

ATTAINING FINANCIAL VIABILITY

Strengthen Financial Management in Urban Areas

Financial management is a common weakness of urban service providers in developing countries and is one of the major reasons why assets in larger systems are not properly maintained. Realistic budgeting; timely, accurate accounting and reporting; cost-recovery tariffs; effective billing and collections; and, strong internal controls can significantly improve the performance and financial sustainability of water and sewerage service providers. Requiring compliance with International Financial Reporting Standards and annual financial audits improves financial reporting. The low salaries paid by governmental utilities often make it difficult to attract the skilled, trustworthy financial managers needed. Outsourcing, or clustering smaller utility systems so as to share the cost of financial professionals, may be effective options.

Strengthen Financial Management in Peri-urban Areas

Weak financial management is a common problem for peri-urban service providers in developing countries and is one of the major reasons why many small-scale water peri-urban supply projects frequently fail. Long-term financial sustainability must be planned for. Cost-recovery tariffs that build reserves for asset repair and replacement are critical. Alternative long-term funding needs to be found, if affordability is an issue. Insurance mechanisms are necessary to protect against early asset failure before reserves are built up. Good internal controls, particularly control of cash is important as theft by insiders, e.g., by system operators or by CBO members tasked with financial responsibilities, is a common occurrence. Proper budgeting and reporting is important to provide for transparency, as are periodic audits. The local piped utility can provide effective support to peri-urban systems, by providing insurance protection against early asset failure, financial management training, or by supplementing internal controls (e.g. by providing dual signature control for use of banked reserve funds or by conducting periodic financial audits).

Strengthen Financial Management in Rural Areas

Rural service providers suffer the same financial management weaknesses as peri-urban systems but do not have the option of obtaining support from a nearby piped network provider. As with peri-urban systems, financial sustainability must be planned for as part of a project’s exit strategy. Other

arrangements or partnerships will need to be created to provide early asset failure insurance, financial management training and oversight.

Introduce Business Planning

Business planning is the process, which flows from the strategic planning process, that seeks to make decisions and to formulate actions that will, over time, fulfill the vision of the strategic plan of the utility. The business planning process deals with quantified strategic goals, which are supported by clearly detailed performance improvement action plans. It is the first step in addressing the overall performance objectives of the utility to become operationally and financially self-sustaining, and to generate sufficient revenues for funding the necessary capital repair and replacements needed to maintain the system assets in a cost-effective manner, at a reliable level of performance. Business planning helps water utilities to plan technical operations, effectively staff the organization, determine operational financing needs, and quantify and schedule the capital investments for the utility, in a sustainable and affordable way. No commercial company, which includes water utilities, can function successfully without a clearly stated and understood business plan.

Establish Cost-Recovery Tariffs

Tariffs are the volumetric prices charged for water or sewerage services. Low tariffs, i.e. tariffs that do not recover the underlying costs of providing service, lead to service deterioration, rationing, etc., unless taxes or donor transfers are adequate to sustain the service. Tariffs provide pricing signals to consumers regarding water usage and can influence their behavior (i.e. whether they waste or conserve water). In peri-urban and rural settings, tariffs help to provide a sense of community ownership and responsibility. Ideally tariffs should be set based marginal costs (i.e. incremental) of providing service to send appropriate pricing signals. Typically, in urban settings, tariffs are calculated based on accounting costs of service, (i.e. O&M, depreciation plus reasonable return on the asset providing service); however tariff design must also consider the projected cash requirements, (e.g. operation and maintenance, debt service, self-financing requirements for construction or rehabilitation projects, etc.) to ensure sustainability. Tariff design should reflect equity and efficiency concerns. Lifeline tariffs, which are designed to recover only a portion of the actual costs of service, are often used to subsidize poor households. However, low tariffs can be a disincentive to extending service, as the service provider loses money on each customer added, unless supplemented by other funds (e.g. taxes or donor transfers) or by cross-subsidies from other customers. Block tariffs which increase the per cubic meter charge as consumption increases are often used to subsidize low volume consumers. Unless properly targeted, however, the poor can suffer because of high consumption due large numbers of people per household, or sales of water to unconnected neighbors. In rural and peri-urban settings, tariffs should be based on cash requirements, with a reserve for repairing or replacing critical equipment, such as pumps and transformers.

Improve Billing and Collections

Financial sustainability of the water and sanitation sector is a major problem in developing countries. It is not uncommon for water and sewerage utilities to have collections rates of 50 percent or less meaning that half, or less, of billed customers pay for the services that they receive. Improvements in billing and collections can have an immediate beneficial impact on utility operations, including increasing access to the poor, as more funds become available. Improving billing and collections is only partially about computerized customer billing systems and the installation of customers meters. To improve collections the utility must know who and where its customers are, the levels of service customers get, what they can

afford to pay, and what the customers are willing to pay for the level of service received. Leadership, resources and incentives are important elements of any improvement plan. Institutional strengthening and capacity building is usually required, to create or strengthen meter reading functions; to gather, or clean up, customer information; and, to strengthen billing and collection processes.

Improve Asset Management

The delivery of safe and reliable water supply and sewerage services requires a significant financial investment in infrastructure assets. These assets are designed to address the needs of the citizens over a long period of time and are costly to replace. Managing these assets in terms of planning their maintenance, and capital repair, replacement and renewal, in an optimal way will insure that these assets perform throughout their useful life at the least possible cost to the customers of the service. Today, donors and lenders are more focused on the issue of asset management and will make this issue an important consideration when they are evaluating a utility's capacity to receive financial assistance. The fundamentals of a sound asset management project start with an objective assessment of the long-term cost for capital repair, replacement and renewal expenditures, the timing of those expenditures, and providing for the cost as a routinely budgeted expenditure that is factored into the overall annual revenue needs of the utility and escrowed for the planned future expenditure.

Expand Access to Market Finance

Public financial resources are limited and should be focused more on the poorest in the population. Local pension and insurance funds provide the best source of funding for infrastructure since they are long-term and match the investment needs of utilities. To access market-based finance, water and sewerage utilities must be perceived as creditworthy. This means having sustainable, predictable cash flows from tariffs, taxes or transfers sufficient to cover operating and maintenance costs, existing and projected debt-service, plus a reserve. To be creditworthy, a utility must also have strong, reliable leadership and effective financial management, including timely and accurate financial reporting. Shadow credit ratings (that is a credit rating given to a bond issue by a credit Missionthat is not reported to the general public thus giving the issuer an idea of the likely demand for the bonds) and benchmarking are two tools that have been helpful in assessing a utility's attractiveness to lenders or investors. USAID has created a menu of bond credit enhancements, including partial guarantees through the Development Credit Authority, intergovernmental tax transfer intercepts, and pooled funds that combine the credit needs of a group of small or secondary towns. In addition, USAID has adapted and transferred the domestic U.S. model of water and sanitation revolving funds to developing countries.

Promote Microfinance

A major obstacle to increasing access to water supply and sanitation is financing for upfront investment costs and for long term operations and maintenance of systems. Over half of the rural water supply systems in Africa are inoperable because of lack of proper operation and maintenance; and cash-strapped utilities generally do not invest in slum area connections, in part because potential customers lack access to financing. The challenge, therefore, is to increase funds available at the household level to finance connection or construction costs, and at the community level to sustain financing of operations and maintenance. Locally managed micro-financing systems offer a solution. Traditionally, microfinance has not been available for financing water supply and sanitation but successful pilots have demonstrated it can be used by households, communities, and municipalities for the construction of household latrines, construction of public toilets, manual latrine-cleaning services and suction truckers which are used to

empty pit latrines. Microfinance institutions can increase their outreach by partnering with others who work on water issues and are able to promote different finance mechanisms at the rural and peri-urban level. Donor assistance can play a role in funding market research, facilitating partnerships among the various stakeholders along the water and sanitation value chains, providing guarantees to enable lenders to deploy tailored financial products, funding training components and technical assistance in order to build the capacity of the various stakeholders, and encouraging a regulatory environment to enable the microfinance sector.

Fonseca, C. (ed.); Adank, M.D. (ed.); Casella, D. (ed.); Jeths, M. (ed.); et al. 2007, "Microfinance for Water, Sanitation and Hygiene—An Introduction,"
http://www.irc.nl/page/38049

Target Subsidies to Help the Poor

There is strong evidence from many developing countries that most of the poor can pay full cost-recovery tariffs, as many who are not connected to the piped network are currently paying more than full-cost piped network prices. However, there will always be some households that cannot afford the full cost of the service thus requiring subsidies, i.e. financial support from the government to an individual in support of an enterprise regarded as being in the public interest. There are three potential benefits to proper targeting of subsidies. First, improved targeting can reduce the overall subsidy budget as only needy customers would be subsidized. Second, it can mean a greater potential impact on poor households for a given subsidy budget. And, third, targeting only the poor can improve water resource management by making nonsubsidized customers respond to appropriate pricing signals. It is considered best practice for the government to pay subsidies directly to individuals who would pay the full-cost water and sewerage bills. Alternatively, the government could pay the utility on behalf of the targeted customers, or the customer billing systems could use special tariffs when calculating bills for targeted customers. In some cases, poor households have been effectively subsidized by the provision of free connections or by the provision of fixed amounts of free water. In meeting the needs of vulnerable populations such as people living with HIV/AIDS, care must be taken to not further stigmatize and discriminate by not putting the spotlight on families affected by HIV/AIDS. Distribution of vouchers through clinics has been one effective approach to reduce stigma while increasing access.

FIXING INFRASTRUCTURE AND TECHNOLOGY PROBLEMS

Construct Small Water Supply and Sanitation Systems

Small water supply systems are the norm in rural areas and also a solution in many urban neighborhoods. They can offer public or domestic service and can exploit surface, groundwater, rainwater or tanked sources. They are distinguished by their small service population and local management structures. They can have high cost per connection in low density scenarios. Technology selection for small systems should focus on the simple and un-mechanized. When possible, gravity should be the main energy source used to move water and human waste. Sustainability is improved by understanding and meeting the aspirations of the population in terms of the water and sanitation services. This must be done within the realities of residents ability to pay, but recent experience is showing that communities and households can afford to purchase higher-than-expected levels of water and sanitation service if it is made affordable by reducing or spreading out capital costs over time. This can be attained through appropriate financing, local participation in infrastructure design, local material and labor contributions, stepwise construction,

and targeted subsidies—especially directed at poor and vulnerable. Construction of infrastructure must take place hand-in-hand with institution-building, capacity strengthening, and promotion of proper household practices that will ensure proper operation and maintenance and use of the infrastructure to maximize health impacts.

WELL Technical Brief #55, "Water Source Selection,"
http://www.lboro.ac.uk/orgs/well/resources/technical-briefs/55-water-source-selection.pdf
DFID with WEDC, London School of Hygiene and Tropical Medicine, WaterAid, TREND, 2005, "Toilet Technology Flipbook," DFID with WEDC, London School of Hygiene and Tropical Medicine, WaterAid, TREND
http://www.wateraid.org/documents/lowcosttoiletoptions1.pdf

Build, Rehabilitate, and Expand Water and Sanitation Distribution Systems

Ultimately, the delivery of reliable, safe water supply and sanitation services to the end user requires well conceived and maintained networks of piping for water distribution and sewage collection. These networks, in well managed water systems, reflect pipes sizes and pipe materials determined to meet the flow and pressure conditions, with a minimum of physical water losses or sources of contamination. Regrettably, these networks can often end up as simply piping spaghetti under the ground with no logic to pipe sizes and materials of construction, with widely different pressures and flow capacities, and significant physical losses due to cracks and poor construction methods. Similarly, in sanitation systems, wrong pipe sizes, poor trench bedding of pipe, inadequate pipe slope, and incorrect pipe junctions lead to sediment buildup, poor flow rates, and sewage back-ups on to streets, private property and homes. The routine and continuous rehabilitation of piping networks, both for water supply and sanitation, is a normal part of utility management, and must be addressed and planned as a part of its asset management project and the budgeting process for revenue needs as a part of capital renewals. However, to evolve from the spaghetti condition to the rationally designed and constructed condition, the utility must have a comprehensive, documented knowledge of its current system and a professionally prepared design of the desired future network, both for the current service area and for the logical and planned extension of the networks into new service areas. Such a strategy is normally implemented in planned and scheduled phases, over several years, and requires the commitment of all the stakeholders to move in that direction over what will likely be several changes in political leadership at the national and local level. Rural water supply and sanitation networks require the same design considerations as urban and peri-urban systems. The better that they conform to a good design practice in the present; the easier it will be to integrate them into a more regional service structure in the future.

Reduce Non-Revenue Water

Non-revenue water (NRW) is the difference between the amount of water put into the distribution system and the amount billed to customers. It includes water lost through leaks and water consumption not billed to customers. High NRW seriously affects the financial viability of water utilities through lost revenues and higher operating costs. Reducing NRW can increase water available and/or can increase funds available to improve or extend service to the poor. Sustainably reducing NRW requires leadership, expertise, specialized tools, including meters, leak-detection equipment, computerized customer billing systems, and hydraulic models, and sustained institutional focus. Restructuring large systems into more manageable operating zones and the use performance agreements focused on reducing NRW have been effective.

Reuse Wastewater

The use of wastewater as a water supply source is only now being given serious consideration in water short areas around the world. In some countries, the use of wastewater in agriculture has been rejected for cultural reasons and/or lack of sufficient awareness building on the facts. Wastewater reuse can be considered from a variety of perspectives, and must be assessed in that way. Wastewater reuse can be for secondary, none consumptive uses such as industrial water or for irrigation/agriculture; it can be used as an indirect water supply source by being recycled back to the natural environment to recharge existing sources such as large impoundments or groundwater, for later use, or it can be recycled directly into the water supply system for human consumption. Each of these wastewater reuse options mentioned has a progressively more costly treatment and quality control dimension that must be considered. The ability to reuse wastewater, particularly in instances of indirect or direct consumptive use, must be weighed against the capacity and resources of the utilities that would undertake to implement such a strategy. Having understood this important fact, the use of wastewater for agricultural or industrial uses is a desirable strategy since it has the effect of reducing pollution and nutrient loads to the natural water environment such as rivers, streams, coastal zones and lakes.

Provide Public Sanitation Infrastructure

Contrasted with household sanitation infrastructure, public sanitation infrastructure addresses the means to convey wastewater from the household and the public treatment facilities that receive that wastewater. Conveyance methods are essentially sewer systems that convey wastewater by gravity through pipes, although pumping stations are sometimes present in larger systems. Traditional sewers typically use large-diameter concrete pipe, while small-bore and shallow condominial sewer systems provide options that require lower capital investment. Secondary treatment systems add a step to remove organic material from the wastewater over that provided by primary treatment, the removal of material that settles or floats.

Select Appropriate Household Sanitation Technologies

Household sanitation technologies refer specifically to the infrastructure located on the household compound that is used by that household to address the disposal of human feces and associated cleaning materials. These technologies can provide onsite storage, treatment, and/or disposal of the waste. Dry-pit latrines, composting latrines, flush toilets with infiltration pits or septic tanks and leach fields all keep the waste on site for some period of time, in some cases providing for its decomposition and re-use. When space is too limited to permit double pit systems or when storage tanks are used, there is a need for solids handling, removal and disposal. Household technologies also include those that convey the waste offsite using water. These are flush toilets linked to some type of sewer or a flush toilet with septic tank linked to a sewer. The sanitation ladder is a conceptual framework for these technologies, proceeding from the most simple options to the most complex. Selection of sanitation technology should involve users in the design; respond to actual needs and demand; build on existing sanitation practices; take account of values, attitudes and behaviors of the users; consider existing institutional settings; and be environmentally sound. Lessons learned underscore the importance of gender differences in priorities, preferences, and needs being reflected in the selection of options available to households.

Water Supply and Sanitation Collaborative Council, 2008, "Compendium of Sanitation Systems and Technologies,"

http://www.eawag.ch/organisation/abteilungen/sandec/publikationen/publicationssesp/downloadssesp/compendiumhigh.pdf

Consider Community and Pay-for-Use Public Toilets

A community toilet is a toilet block provided for use by the local population. A public toilet is a toilet block meant to serve people using public places such as markets, bus stands, and hospitals. Public toilets provided in slums may also serve the community function by providing local residents and the homeless with their only access to basic sanitation. Providing community toilets is an option to provide basic sanitation at the same time as having a demonstrative effect. Community toilets can catalyze behavioral changes amongst the public residing in the slum areas and generate a demand. However, there is a long history of community and public toilets not serving their intended function. They may become hazardous, unhygienic or abandoned. The lack of operation and maintenance, daily upkeep, reliable source of water supply, lack of hand-washing facilities, and appropriate use, e.g. dumping garbage in the pit, have often rendered these facilities unsustainable.

Experience shows that successful community and public toilets are based on empowerment of users; owning, operation and maintenance and collection of service charges by user groups; and a participatory demand driven approach. Charging for use of the toilets has proven key to financial sustainability. Where users are too poor to pay full cost-recovery charges, cross subsidies can be used. When bathing facilities are attached to the community and public toilets, users are more willing to pay. A reliable water supply, hand-washing facility, and provision for safe disposal of fecal sludge are essential. Partnerships between local authorities, NGOs, and local communities are frequently used. Innovations in the design, operation and management of public toilets have been particularly successful in Nairobi and its slums and include appropriate architecture which presents a public image that attracts users into built space; attaching other services to the toilet complex, such as shoe shine, newspaper vendors, soft drinks thus creating a "Toilet Mall;" franchise mechanisms that ensures locals are involved in operations and accrued benefits; and establishing partnerships between municipalities and schools for a Build Operate Transfer (BOT) arrangement at schools.

Water and Sanitation Project, 2007, "Public Toilets in India: Doing Business Differently," http://www.wsp.org/UserFiles/file/519200874857_SAPublicToiletsFN2008.pdf

"Rejuvenating Community Toilets," UN Habitat, 2007, http://www.unhabitat.org/downloads/docs/4180_99251_Policy%20Paper-3.pdf

Treat Drinking Water at the Point of Use

Point-of-use (POU) treatment systems exist for targeted biological contaminants, general micro-biological contamination, aesthetic contaminants, and chemical contaminants, such as arsenic and iron. The most common POU systems target general microbiological contamination. The ideal POU system is effective against a wide range of organisms, minimizes capital costs, recurring costs, and energy costs, can handle turbid waters, is safe to use, provides residual disinfection, and produces no harmful by-products. Current systems include boiling, pasteurization, solar disinfection (SODIS), chlorination, sand and ceramic filtration, sedimentation, flocculation /settling of filtration, extended storage, and combinations of the above. There is no absolutely ideal POU system. Each has advantages and disadvantages and the appropriateness of a particular system is largely depends on local conditions. All POU systems should be

accompanied by options promoting safe storage and handling of water. USAID has extensive experience in POU treatment systems.

WELL Technical Brief #58 and #59, "Household Water Treatment 1 and 2,"
http://www.lboro.ac.uk/orgs/well/resources/technical-briefs/58-household-water-treatment-1.pdf
http://www.lboro.ac.uk/orgs/well/resources/technical-briefs/59-household-water-treatment-2.pdf

Prepare Water Safety Plans

A water safety plan is a risk management plan to ensure that safe drinking water is delivered to customers. Water safety planning consists of three components: system assessment; operational monitoring; and management plans, documentation and communication. Risk assessment provides an estimate of the potential impact on public health of the water supply under existing design and operational conditions. Water Safety Plans can improve asset management by identifying where risks occur, helping to prioritize asset investment decisions. Water Safety Plans can also improve economic regulation in the sector by linking tariffs with the operational and investment requirements, including for service extensions to poorly-served or un-served areas, needed to mitigate risks identified in the plan.

Introduce Ecological Sanitation

Ecological sanitation, referred to as "eco-san", works on the principle that urine and feces are not simply human waste products but rather are assets that, if properly managed, can contribute to better health, food production and reduced pollution. The fertilizer producing qualities of eco-san latrines can help support the household economy of poor families who must face poor soil quality and an increasing cost of artificial fertilizers. The eco-san technology builds on principles recognized for thousands of years in agricultural practices whereby human excreta were commonly used to complement farm manure in improving soil fertility. Most of the valuable nutrients are in the urine, though the vast majority of the pathogens are in the feces. Although feces have a lower nutrient content, its high organic matter aids water retention and is a good soil improver. The eco-san technology has four steps - source separation, containment, sanitization and recycling. Eco-san latrines can be divided into two main types: (i) dehydrating urine separating toilets and (ii) composting toilets. In the former, urine is collected and stored until it can be used as a fertilizer on plants and crops. The feces drop into a pit to which a handful of either ash or lime is added. This has the effect of drying the feces and destroying pathogens. After some months of storage the resulting material can be applied to land. In composting toilets urine and feces are not separated. A handful of mixture of soil and ash is added to the pit after each use which has the effect of keeping the pit contents relatively dry and aerobic. Following several months of storage, the resulting material can be land applied as a fertilizer and soil conditioner. Eco san is a good option in areas where there are high groundwater tables and collapsing sandy soils making it difficult to build permanent traditional latrines. Eco-san is also effective in water stressed or arid areas because it requires no water. It is generally a rural sanitation option but, if transport of the material can be arranged, could also be used in urban and peri-urban areas.

Two web-sites are devoted to research and application of ecological sanitation: *http://www.ecosan.org/*
http://www.ecosanres.org/

Expand Composting

Composting is a process of converting organic waste into humus. Humus is inert, so it can be used as a soil conditioner or as landfill cover. In composting, biodegradable waste is biologically decomposed under controlled conditions by microorganisms under aerobic and thermophilic conditions. Composting can be applied to fecal sludge collected from latrines or from a wastewater treatment plant. Co-composting means composting of two or more raw materials together – often fecal sludge and solid waste. Other organic materials which can be used in co-composting, combined with the fecal sludge, are animal manure, sawdust, wood chips, bark, etc. The technology chosen for aerobic composting (or co-composting) will depend on the location of the composting site, cost, and the amount and type of waste involved. Two main types of composting systems are generally distinguished: (i) open systems such as windrows and static piles, and (ii) closed "in vessel" systems. Open systems are most often used in developing countries. There are a number of technical considerations to manage in composting including moisture content and temperature. Composting can be done on a household, community, or municipal level.

Introduce Rainwater Harvesting

Rainwater harvesting (RWH) is an alternative or complement to more expensive water supply systems. It has been adopted in many areas of the world where conventional water supply systems have not been provided, are too expensive, or fail to meet people's needs. Many kinds of RWH are practiced throughout the world and of two types: domestic RWH and RWH for agriculture, erosion control, flood control and aquifer replenishment. Domestic RWH is a simple mechanism to collect and store rainwater mainly for drinking and cooking. It may be household based or community based. A typical domestic RWH consists of a collection surface (a clean roof or ground area), gutters, and a storage container. In addition, there may be options for diverting first-flush water and filtration to remove debris and contaminants before water enters the storage tank or cistern. Domestic RWH systems have many benefits. RWH systems are decentralised and independent of topography and geology. They deliver water directly to the household, relieving the burden of water carrying, particularly from women and children. Once systems are in place they are owned by the householders who can manage their own water supply. Good niches for RWH include: groundwater is either difficult to secure or has been rendered unusable by fluoride, salinity or arsenic; the main alternatives are polluted surface water sources; management of shared point sources has proved a problem; drinking water supply is unreliable; and local water sources dry up for part of the year. RWH does have limitations. It is not suited to being used as a stand-alone water supply solution in any but the most water-stressed situations as the increase in storage tank capacity necessary to bridge a long dry season can be prohibitively expensive. The storage provided by a tank does, however give households good security against short-term failure of alternative sources.

The International Rain Water Harvesting Association web-site provides extensive information on the design and implementation of RWH systems.

See *http://www.ircsa.org/*

PROTECTING THE ENVIRONMENT

Develop and Protect Watershed and Supply Sources

Inadequate attention to managing water resources is leading to the overexploitation and degradation of water resources which exacerbates the difficulty in improving access to safe drinking water in terms of quantity and quality. As water becomes scarcer and its quality degrades, the poor must go farther and pay

more to satisfy their basic needs. Most countries have adopted the Dublin Principles regarding the need for integrated water resources management to protect watersheds and supply sources as well as economic pricing of water to ensure efficient use of water resources, but further action is needed to implement these principles. Because water supply projects are usually implemented on the service delivery level they often fail to connect with those agencies and authorities responsible for water resource management and planning. However, there are a number of areas whereby WSH programming can support objectives of protection of the water supplies/sources on which they depend. Since nearly all countries treat water resources as property of the State, it is essential that the State have total control over the rights of water extraction, whether from groundwater water sources or surface water sources. This authority is exercised with a permit system of some kind usually defined in the Water Law. The permit system can also include extraction fees on a unit basis, which has the dual, positive effect of providing funds for watershed planning and management, where the consumers pays, as well as instilling more discipline in the use of water extracted to prevent wasteful use when supply sources are limited or costly to develop. Directly related to controlling access and extraction is the need to protect the sources themselves such that they remain at the highest, natural quality and thereby minimize the cost of treatment for consumption purposes. This includes land use controls in critical recharge zones, well head protection zones around well fields, and the control of run-off and discharges into river supply sources and into impounded water supply reservoirs. Most governments are still operating in the reactive mode—responding to near disasters. Public authorities and utilities should be encouraged to adopt comprehensive forward looking strategies for reducing water losses and encouraging the adoption of water saving technologies and low-cost sanitation at the household and community level.

Apply Regulation 216 in Water and Sanitation Projects

22CFR216 is the body of federal regulations that address the responsibilities of the federal government and its implementing entities in identifying and mitigating the potential environmental impacts of overseas activities. The USAID CTO is legally responsible for ensuring that they have in place a project-wide Initial Environmental Assessment with associated environmental threshold decisions for each activity type, such as gravity water system construction and household sanitation. Reg 216 is used to address impacts on the physical environment in which flora, fauna, and humans co-exist as well as the health and well-being of those in the project area—workers and residents. Reg 216 is also expanded as needed to address socio-cultural and economic impacts of an activity. In these cases it can become a tool for designers to legally ensure that best practices and due diligence take place in design, construction and operation systems. Typically in WASH projects, implementers will assess the potential environmental impacts of activities and create a mitigation plan to be implemented during construction/implementation when there are infrastructure activities or activities that promote the production and use of potentially dangerous chemicals.

Wyatt, A., Howegrewe, I., and Brantley, E. 1992, "Environmental Guidelines for PVOs and NGOs: Potable Water and Sanitation Projects,"
http://www.foodaid.org/worddocs/environmentwg/WASH.doc

Promote Water-Conserving Technologies and Practices

Applying the same market principles, water conservation is promoted, marketed and supplied through a partnership between public-sector and private-sector interests. Low-flow taps, toilets, showers, etc. and

tips for conserving water around the home, and therefore reducing water bills, are typically marketed in these projects.

Manage On-Site Fecal Sludge

Fecal sludge is the semi-solid organic residue from human waste accumulated in on-site sanitation systems, e.g. pit or septic tank. An appropriate final fate for fecal sludge is not only critical to avoid environmental contamination but also important in order to capture where possible an economic benefit from the organic material. However, provision of on-site sanitation options whether for the household or community seldom includes management of the fecal sludge rendering them environmentally unsustainable. With no means or funds to empty pit latrines and septic tanks, people abandon them or bypass them when they fill up. This causes a dual problem—there is no longer a place to defecate, and the fecal sludge contaminates the surrounding environment creating significant environmental health risks. In less densely populated areas, the risk is less great—in dense urban and peri urban areas, the negative environmental and public health impacts are significant. Proper management of fecal sludge means adequate de-sludging of sanitation facilities, safe handling and transport of sludge, treatment of sludge, and its safe disposal or reuse. WASH programming can address any or all of these functions. Ecological sanitation technologies can be promoted to recover and recycle nutrients from feces (and urine). For example, fecal sludge can be composted on-site in alternating pits or vaults with treated sludge being safe to use as a soil amendment. Gas from the degradation of human waste can be captured and used for energy (biogas latrines). When pit and tank emptying services are required, these can be supported through the private sector or public sector or in partnerships. Innovative pit emptying technologies can be promoted that allow pit emptiers to work in tight quarters and minimize con-site contamination during the removal process. It is important to remember that fecal sludge management is an important cost factor, which cannot be neglected and which has always to be taken into account when sanitation systems are planned.

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F HELPFUL WEB-BASED RESOURCES

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Brief 18 Achieving Sanitation at Scale: Innovative Approaches to rural and urban sanitation
Brief 24 Guidelines for assessing cost-effectiveness of hygiene promotion
Brief 27 Ecological Sanitation
Brief 37 Re-use of wastewater
Brief 38 Emergency sanitation for refugees
Brief 45 Latrine slabs and seats
Brief 54. Emptying pit latrines
Brief 61. On-plot sanitation in urban areas
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1. REQUEST FOR APPLICATIONS (RFA)

SECTION C: PROGRAM DESCRIPTION
THE GHANA WATER AND SANITATION (WATSAN) PROJECT

I. Ghana Water and Sanitation Project Overview

The Ghana Water and Sanitation (WatSan) Project is intended to achieve one Intermediate Result of the USAID/Ghana Health Program Strategic Objective 7: IR 4: Water supply and sanitation improved and other infectious diseases decreased and to contribute toward two Intermediate Results in the Education Sector Plan Strategic Objective 8: IR 1: Increased educational opportunities for girls in underserved areas; and IR 4: Increased community advocacy for and contribution to quality education. The Ghana WatSan Project will achieve these results by supporting improved access to safe and adequate water supply infrastructure for households, clinics and schools, increasing access to basic sanitation facilities for households, clinics and schools, and promoting complementary hygiene practices to maximize the health impact from this improved infrastructure.

While expanding access to improved water supply and basic sanitation infrastructure are critical to the health and welfare of Ghanaians in the near term, maintenance and effective use of these are important for their long-term health and welfare. Therefore, an important component of the Ghana WatSan Project will be capacity-building support to those entities responsible for maintaining this infrastructure and its appropriate use. These entities will include community-level groups, clinic and school administrations, local governments, and utility operators. An estimated $14.2 million broken down by $13.2 million of core USAID funds and additional $1,000,000 in Coca-Cola leverage funds is anticipated in Life-of-Project over four years for the activities described in this solicitation, subject to availability of funding.

The Project will target households, clinics and schools in four regions: Greater Accra, Central, and Western, which are focus regions for USAID/Ghana's health portfolio and Brong-Ahafo, which are focus regions for USAID/Ghana's education portfolio. Additionally, the Recipient is asked to carry out activities in Volta and Eastern regions as a part of the Global Development Alliance agreement between USAID and Rotary International. The Recipient is expected to establish and maintain a central office in Accra. The Recipient is expected to support the integration of activities with other USAID/Ghana program components when relevant to the water and sanitation work in the focus regions, including two new health projects, the Focus Region Project and the Behavior Change Communication Project, and education activities supported under the Education Sector Plan Strategic Objective 8.

II. Background/Context

The Ghana Water and Sanitation Project will build on and complement USAID's work in the health and education sectors and support the Government of Ghana's programming in water and sanitation, health and education. To be effective in this multi-sectoral environment and achieve the objectives of this program, the Project must be responsive to the problems, needs and policy developments in each of these sectors. This section summarizes the status of these sectors in Ghana and highlights the government context and other important issues pertinent to the WatSan Project.

a. Water, Sanitation and Hygiene Status

Recently published data from the WHO/UNICEF Joint Monitoring Program[37] indicates that Ghana has made significant progress in expanding access to improved water supply over the last decade. It is estimated that over 50% of the population gained access to improved water supply since 1990. As such, the country is very close to meeting its Millennium Development Goal (MDG) on expanding water supply access to 76% of the population by 2015. Gains have been particularly impressive in rural areas where coverage levels are the envy of many African countries. Sanitation is a different story. Improved sanitation is available to a very small proportion of the population in both urban and rural areas. Since 1990, only about 8% of the population has gained access to improved sanitation. The country is far off track for meeting its Millennium Development Goal on sanitation, 65% coverage by 2015 (Table 1).

2006 estimates of coverage (WHO/UNICEF 2008)

Acces to Improved…	Urban	Ghana Rural	Overall	Sub-Saharan Urban	Africa Rural
Water Supply	90%	71%	80%	81%	46%
Sanitation	15%	6%	10%	42%	24%

However, there are important stories behind these general statistics.[38] For example, access to improved water supply sources does not automatically mean access to *safe* drinking water. For the 15% of the population that must carry water for over 30 minutes from improved sources, contamination during transportation and handling in the home is a major concern. Many improved sources, such as some urban piped networks, also provide very limited *quantities* of water—an aspect of water supply that can have just as much of an impact on health as poor water quality.

A unique feature of the sanitation situation in Ghana also not captured by these general statistics is that about half of the population (69% urban and 34% rural) regularly use *shared* sanitation facilities. Shared facilities—whether fully public or accessible only to some—are not considered 'improved' facilities according to the definition used for the MDG indicator because it is known that many shared facilities: (1) fail to ensure hygienic separation of human excreta from human contact, (2) offer limited access throughout the day; and (3) offer insufficient security for some users, especially at night. Only about 10 percent of all developing country populations rely on shared facilities. Even in sub-Saharan Africa where they are most common, shared facilities serve only about 18 per cent of the population. Thus, Ghana is a very unique exception not only in the large percentage of people that rely on shared facilities but also in the large number of households that share particular facilities—on average more than five households per latrine.

Many in civil society[39] see the following challenges as key reasons for the continued the shortfalls in water and sanitation access:

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[37] World Health Organization and United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation JMP). Progress on Drinking Water and Sanitation: Special Focus on Sanitation. UNICEF, New York and WHO, Geneva, 2008—Note: These estimates are widely viewed as the best available and least biased as they are based on interpolation of a variety of high quality survey data including information collected by the DHS.

[38] Including disagreement over such statistics. For example, WaterAid and others report much lower levels of improved water supply access in urban areas, closer to 70%, and substantially higher sanitation access (40% urban /11% rural).

[39] WaterAid—national water sector assessment: Ghana, May 2005.

- Low government funding for the sector.
- Ineffective decentralization and weak local government capacity.
- Low accountability to citizens and poor management among service providers.
- Inadequate attention and focus on sanitation.

In addition to issues of access to improved water and sanitation infrastructure in Ghana, hygiene practices in Ghana are also of considerable concern. A 2002 observational study of handwashing behavior in four districts found that only 2% of mothers washed their hands with soap after cleaning up a child, and only 4% washed their hands with soap after defecation. A 2005 UNICEF Multiple Indicator Cluster Survey (MICS) found less than half the population disposed of child feces (which may carry a higher pathogen load than adult feces) in a safe manner.

b. Health Status

Health status in Ghana has improved in recent decades; however, many health challenges remain, as described briefly below. Life expectancy is 59 years. With a population growth rate of 2.3 percent per year, the population will grow by 10 million, from approximately 23 million today to 33 million in 2025, challenging Ghana's attempts to improve health, education, water and sanitation, and other services and improve the well-being of its people and its environment. Ghana also has a young age structure, with children under 15 years of age comprising about 40 per cent of its population.

Infant and Under-Five Mortality: More than 100,000 Ghanaian children under five die each year, accounting for more than half of all deaths in Ghana. As some causes of infant and child mortality have decreased in importance, the proportion of neonatal deaths is increasing, representing over a third of under five mortality and over two thirds of infant mortality. Other major child killers include malaria, diarrhea, pneumonia and measles.

Family Planning: Use of modern methods of contraception is estimated at only 17 per cent of married women. Although knowledge of contraception is high, women continue to have more children than they desire and unmet need for contraception is among the highest in the world, at 34 per cent of married women.

HIV/AIDS: With an HIV prevalence of 1.9 per cent (UNAIDS, 2008), HIV transmission in Ghana is mostly concentrated among persons who engage in high risk behaviors, particularly female sex workers (FSW) and their clients and partners, and men who have sex with men (MSM) and their female partners. Evidence suggests a reduction of HIV infection in the general population, yet HIV infection seems to be increasing in these at-risk populations.

Malaria: Malaria is a major cause of morbidity and mortality in Ghana, directly contributing to poverty, low productivity, and reduced school attendance. Between 3 and 3.5 million cases are reported in Ghana each year, of which over 900,000 are children under five years old. Malaria is responsible for an estimated 22 per cent of under-five mortality and 9 per cent of maternal deaths in Ghana; an estimated 20,000 children under five die from malaria in Ghana each year.

c. Education Status

Since 1986, pre-tertiary education in Ghana has included six years of primary education, three years at the junior secondary school level and three years at the senior secondary school level. Education reform,

beginning in 2007, introduced two years of kindergarten education beginning at age four and increased the three years of senior secondary school to four years. Successful completion of senior secondary school leads to admission eligibility at training colleges, polytechnics, and universities. In 2006 there were approximately 5.1 million students attending schools at these three levels: 68% at the primary level, 23% at the junior secondary level and 10% at the senior secondary level. However, access to each successive level of education remains severely limited by lack of facilities (source - http://www.state.gov/r/pa/ei/bgn/2860.htm accessed 21 April 2009).

d. The Multi-Sector WatSan Context

To effectively link USAID support for the water and sanitation sector with USAID's investments in the health and education sectors, the Ghana WatSan Project will work within Ghana's national-level organizational structures and guidelines for all three sectors—health, education, and water and sanitation. The Project will also promote coordination and effective collaboration among sectors through its work with relevant local and community level organizations.

Water and Sanitation Sector

Overall the central government is in charge of policy and regulation of this sector. The Ministry of Water Resources, Works and Housing (MWRWH) is responsible for water supply policy in both rural and urban areas. The Ministry of Local Government, Rural Development and Environment (MLGRDE), as part of its overarching role in setting the policy framework for the development of local communities, is responsible for formulating environmental sanitation policy. At the level of implementation, decentralization has been the theme with local government (and more recently the private sector) playing the central role.

The Community Water and Sanitation Agency (CWSA), under the MWRWH, is in charge of coordinating and facilitating the implementation of the National Community Water and Sanitation Program (NCWSP) in rural areas. NCWSP is carried out directly by communities and their District Assemblies and focuses on three main areas: safe water supply, hygiene education, and improved sanitation. The resources available to District Assemblies for these investments are significantly augmented through investments by NGOs.

CWSA is not engaged in direct service provision, but coordinates the work of those that maintain services in rural areas, including public sector organizations, local beneficiary communities, private sector organizations, and NGOs. CWSA contributions include establishing and training water and sanitation (WatSan) committees responsible for the operation and maintenance of their water supply systems. To carry out their efforts, CWSA operates ten regional offices in addition to its head office in Accra.

Urban water supply reform was initiated in the mid 1990s in response to poor quality of service and low operational efficiency of the national water utility, Ghana Water Company Limited (GWCL). GWCL, under supervision of the MWRWH, is responsible for providing, distributing, and conserving water for domestic, public, and industrial purposes in 82 urban systems in localities with more than 5,000 inhabitants. The company is also mandated to establish, operate, and control sewerage systems in Ghana.

In October 2006, a private operator, Aqua Vitens Rand Ltd. (AVRL), began to support GWCL under a five-year management contract to improve its performance and help rehabilitate and extend water supply infrastructure. The main objectives of the management contract are to extend reliable, affordable, and potable water supply, especially to low-income areas; to increase cost recovery and reduce non-revenue water; and to support further involvement of the private sector, including in financing of the sector. There

has been strong political resistance to such private sector involvement in water supply in Ghana. The opponents of private sector involvement have been emboldened by the slow pace of water supply service expansion since AVRL began its operations. AVRL counters that its hands are tied because GWCL retains control over the capital investment resources required to expand piped connections and address the shortage in availability of treated water.

The Ministry of Local Government Rural Development and Environment (MLGRDE) shares responsibility for setting urban sanitation policies and coordinating funding for this sub-sector with MWRWH. The MLGRDE's Environmental Health and Sanitation Directorate is charged with implementation of the National Sanitation Policy. Implementing and maintaining urban sanitation improvements is a decentralized responsibility of local governments, namely Metropolitan, Municipal, and District Assemblies. Some claim that peri-urban areas in Ghana do not clearly fall under the jurisdictions of either rural or urban focused programs and are often poorly served as a result.

Unlike in rural areas where CWSA plays this role, there is no clear lead Agency responsible for hygiene promotion in urban areas. The Ministry of Education, Youth and Sports is responsible for the implementation of a hygiene promotion and school health program in water and sanitation targeting school-age children through the School Health Education Program (SHEP). The Ghana Health Service, under the Ministry of Health, does not have a particularly strong hygiene promotion program. Ghana Health Service is promoting hygiene as part of work to expand on existing clinic-based primary health care and reproductive health services by promoting community-based health services, known as the Community-based Health Planning and Service initiative (CHPS). The Ministry of Health also has District Environmental Health officers that issue licenses to public food vendors and conduct sanitation campaigns, but focus more on solid waste than on disposal of feces.

Since 1993, the Government of Ghana has developed Strategic Investment Plans (SIP) to harmonize activities and investments in the water and sanitation sector. External donors have funded most of the infrastructure investments in the SIPs. The third and most recent SIP covers the period of 2005-2015 and aims to increase the population served by clean water sources to 83 per cent by 2008, surpassing the Millennium Development Goal (MDG) for water, which is 76 per cent by 2015. Although the present SIP antedates the new administration elected in 2008, it considers water infrastructure and access to sanitation as key elements to achieving "A Better Ghana." The SIP seeks to achieve its clean water goal by delivering the following infrastructure facilities: 13,000 boreholes; 7,000 hand dug wells and 1,600 piped systems to small towns.

The rate of provision of household latrines is .043 per cent to 1.6 per cent per year, which is well below the 2.7 per cent annual population growth. The SIP and the newly elected government both express concerns about the country's ability to achieve the sanitation MDG of 65 per cent coverage by 2015. The capacity to develop, implement and monitor water and sanitation programs is still relatively weak among government personnel, local non-governmental organizations (NGO) and district assemblies. Although the SIP of 2005-2015 outlines the roles for national agencies, regional offices, district assemblies and communities in the development of the needed infrastructure, support, and monitoring of water and sanitation services, too little consistent emphasis has been placed on building the capacity or strengthening the skills of personnel in this area. At the community level, many established Water and Sanitation (WatSan) Committees often fail to function effectively over time because of insufficient support to address the challenges of maintaining and repairing boreholes, hand-dug wells, latrines and other infrastructure improvements. Because many shared communal toilets in Ghana have suffered from poor maintenance, the trend now is for government and development partners to shift support from

communal latrines to providing latrines for institutions such as schools and clinics and programming that promotes household level sanitation facility improvements, including increasing attention to no/low-subsidy and demand-generation approaches.

Health Sector

The Government of Ghana's (GOG) Ministry of Health (MOH) is in charge of developing policy, governance and oversight of the health sector while the Ghana Health Service (GHS) is charged with public sector health service delivery. According to the Ghana Health Service Five-Year Strategic Framework for Service Delivery 2007-2011, July 2008, as a decentralized, independent agency, it has "greater management flexibility" to carry out its responsibilities; Regional and District Health Management Teams have the flexibility to plan, implement, monitor, and coordinate service delivery, allowing them to be responsive to local needs and conditions. The creation of district Budget Management Centers permits districts to allocate and manage their own resources.

The GHS has implemented the Community-Based Health Planning and Services (CHPS) Initiative to extend services to underserved communities, and the High Impact Rapid Delivery (HIRD) strategy to focus on proven interventions to help reduce maternal and child mortality and morbidity. An innovative health financing approach, the National Health Insurance Scheme, pays for curative services by utilizing 2.5 per cent of VAT revenues, payroll taxes, and income-adjusted premiums. By the end of 2007, there were a total of 145 District Mutual Health Insurance Schemes (DMHIS) providing insurance for over 50 per cent of Ghanaians.

Other important public sector actors in health are: government regulatory bodies such as the Food and Drug Boards and professional councils (e.g., the Nursing and Midwifery Council); training institutions; and the Christian Health Association of Ghana (CHAG) quasi-governmental facilities that operate in close collaboration with the GHS.

Many Ghanaians rely for their health care on an array of private sector providers: pharmacies and chemical sellers; traditional healers and traditional birth attendants; and private medical providers, such as midwives and physicians. At the community level, the behaviors of mothers and families are affected by mass media, local networks of family, friends and acquaintances, churches, political leaders and local political institutions, civil society organizations, and others. Primary and secondary schools as well as other governmental ministries and institutions can also affect health behavior and outcomes.

Health facilities often have limited access themselves to adequate potable water, sanitation and hand washing facilities. As such, these facilities often lack adequate clean water to administer health procedures and for our patients or those on limited stay at the center to meet their basic needs.

Education Sector

In Ghana, primary and junior secondary school education is tuition-free and mandatory. Article 39 of the constitution mandates the major tenets of the free, compulsory, universal basic education (FCUBE) initiative. Launched in 1996, it is one of the most ambitious pre-tertiary education programs in West Africa. Since the early 1980s, Government of Ghana expenditures on education have risen from 1.5% to nearly 3.5% of GDP. Since 1987, the share of basic education in total education spending has averaged around 67%.

The units of the Ministry of Education, Science and Sports (MOESS) responsible for education are: the Ghana Education Service (GES), which administers pre-university education; the National Council on

Tertiary Education; the National Accreditation Board; and the National Board for Professional and Technician Examinations (NABPTEX).

Although water and sanitation facilities in schools are increasingly recognized as fundamental for promoting good hygiene behavior and children's well-being, many schools have very poor facilities. Conditions vary from inappropriate and inadequate sanitary facilities to the outright lack of latrines and safe water for drinking and hygiene. This situation is of particular concern for girls. Lack of separate sanitation facilities can lead girls to drop out of schools, due to the embarrassment of sharing toilets with boys, especially when they reach puberty. Absenteeism is one of the causes of poor academic performance and girls are more likely to be regularly absent from school due to poor, or lack of, sanitary facilities in schools. Making water and sanitation facilities accessible means girls have more time for their studies and as a result concentrate on improving their academic performance. Improving water and sanitation in schools also enables girls at puberty, who have special sanitary needs, to practice proper personal hygiene thus reducing the incidence of water-related diseases.

Poor access to safe water at the household level especially in rural areas can also force young girls to spend hours daily fetching water, causing an enormous drain on their energy, productive potential and health. This disrupts their academic activities. Installing separate toilets for girls and boys at school can help bring teenage girls into the classroom and ensure regular attendance.

e. Other Important Issues

Urbanization

Approximately 48 percent of Ghana's population is urban and almost half of the more than 11.0 million urban residents live in the country's two largest urban areas, the Greater Accra Region and Kumasi. All evidence indicates that these percentages and numbers are increasing and that soon over half of Ghana's population will live in urban areas. This urbanization is coupled with growth in the urban poor. This rapidly growing sub-population is suffering from high and increasing levels of infant and child mortality among this sub-population and faces significant problems with gaining access to adequate potable water and sanitation facilities. Addressing the health and water, sanitation and hygiene concerns of Ghana's urban poor involves addressing a number of challenges:

- Difficulty in identifying the poor urban households most at risk from poor water supply and sanitation access in the complex urban landscape.
- Defining and mobilizing "communities" of such households to the extent that they exist.
- Engaging the multiple government agencies that have responsibility for providing urban water, sanitation, and health services.
- Linking the poor with quality health and water and sanitation services, which often includes formal and informal providers and many from the private sector

Gender Concerns

As noted above, lack of adequate water and sanitation facilities in schools often impacts girls more than boys. In addition, women's lack of empowerment and, often, financial dependency in decision making affect behaviors in the home that affect access to and use of water and sanitation facilities and hygiene behaviors. Infrastructure programs for water and sanitation often do not give enough emphasis to the input and feedback of women who are the primary prospective users of these investments. To be used and have the desired impact, water and sanitation infrastructure and programs must be sensitive to gender

roles, reach out for input from women and men, and seek to "empower" all Ghanaians to make use of and maintain improved facilities to as to improve their own health and the health of their communities.

Girls require sanitary facilities that give them privacy and dignity. Lack of sanitation facilities causes girls to drop out of schools, due to the embarrassment of sharing toilets with boys, especially when they reach puberty. Absenteeism is one of the causes of poor academic performance and girls are more likely to be regularly absent from school due to poor, or lack of, sanitary facilities in schools. Inequalities in access to safe water especially in rural areas, forces young girls to spend hours daily fetching water, causing an enormous drain on their energy, productive potential and health. This disrupts their academic activities. Installing separate toilets for girls and boys at school can help bring teenage girls into the classroom and ensure regular attendance. Making water and sanitation facilities accessible means girls have more time for their studies and as a result concentrate on improving their academic performance. Improving water and sanitation in schools also enables girls at puberty, who have special sanitary needs, to practice proper personal hygiene thus reducing the incidence of water related diseases.

III. Relationship of the Wat/San Program to Other USAID Programs in Ghana

In recent years, USAID/Ghana has not invested significantly in development-oriented water, sanitation and hygiene efforts. The primary assistance provided to the sector has been through humanitarian programming and as part of some larger health programs. For example, since the 1990s, USAID/Ghana Food for Peace program supported three implementing partners working in all ten regions to construct boreholes, provide pumps for rural communities, and form water and sanitation committees to manage and repair the boreholes and pumps. These partners also built pit latrines for households and in a few primary schools. This program is now phasing out. In addition, over the past five years under its health sector programming, USAID has supported a partner providing health education, part of which has included community-level hygiene education. However, these hygiene education activities have not necessarily targeted the same communities that received water and sanitation support under the Food for Peace program.

Since 2002, the West Africa Water Initiative (WAWI) Global Development Alliance with the Conrad N. Hilton Foundation has also implemented a broad suite of water/sanitation/hygiene activities in the Northern Regions of Ghana. USAID's portion of alliance activities have been funded by USAID/EGAT, GDA, USAID/AFR, and USAID/West Africa, and have included construction or rehabilitation of water points and sanitation facilities (rural and peri-urban), governance and advocacy, hydrologic information management, hygiene behavior change, gender mainstreaming, and small-scale water supply development for livelihoods. WAWI will be continuing a modest level of effort in Ghana in the coming years, including knowledge management and capacity building activities as well as support to water/sanitation networking at the national and regional scale. USAID/Ghana's new WatSan program is welcome to share experiences and coordinate to the extent possible with this ongoing USAID effort in the water/sanitation sector.

The new WatSan Program is designed as an integral complement to USAID/Ghana's other development efforts in health and education. The strategic framework of these programs is described here.

Health Sector

The USAID/Ghana Health Strategic Objective (SO 7), agreed by the Government of Ghana, is: **Health Status Improved.** This Strategic Objective aims to improve the health status of Ghanaians and support Ghana in reaching its Millennium Development Goals #4 (Child Health), #5 (Maternal Health) and #6 (Infectious Disease Control), by helping to reduce total fertility through increased contraceptive use; reduce infant, under-five mortality rates and the maternal mortality ratio; and, reduce deaths from malaria and the incidence of HIV/AIDS. This SO will be achieved between USAID/Ghana and the Government of Ghana and its implementing agencies, in concert with other donors, as well as all the other key actors in the Ghana health sector.

The Intermediate Results, and Illustrative Activities and Illustrative Indicators are shown in Figure A, the Strategic Objective Framework for the USAID/Ghana Health Program. As shown in Figure A, four of the Intermediate Results needed to achieve the Health Program Strategic Objective are aligned with the key health program areas funded by USAID. As noted earlier, the Ghana Water and Sanitation Project will be responsible for the water and sanitation aspects of IR 4.

Education Sector

USAID/Ghana, under its education development assistance program, is supporting the implementation of the Government of Ghana's (GOG) Education Sector Plan (ESP) with a program designed to: *Improve the Quality of and Access to Basic Education (SO8).* The SO is being implemented over the FY 2004-2010 period and is based upon the achievement of five Intermediate Results (IRs):

- IR1—Increased educational opportunities for girls in underserved areas,
- IR2—Improved instructional system,
- IR3—Improved management and accountability,
- IR4—Increased community advocacy for and contribution to quality education, and
- IR5—Improved HIV/AIDS prevention in the education sector.

Figure A

SO 7: Health Status Improved

Program Indicators:
- Decreased infant mortality rate in focus regions
- Decreased under-five mortality rate in focus regions
- Percent of children under five underweight (moderate or severe) in focus regions
- Decreased numbers of maternal deaths in focus regions
- Increased contraceptive prevalence rate in focus regions
- Reduced malaria deaths at the national level
- Reduced HIV/AIDS incidence at the national level

IR 1: Access, Quality, and Use of Family Planning and Maternal and Child Health Services Increased

Illustrative Activities

- Ensure that all policies and guidelines are updated
- Train health providers
- Ensure on-site follow up
- Develop effective community-based responses to malnutrition
- Expand community-based delivery approaches
- Adapt service delivery approaches to local preferences
- Engage civil society, elected officials, clients, and others in monitoring services.

Illustrative Indicators

- Couple Years of Protection
- % of pregnant women completing at least four ANC visits,
- % of births attended by trained personnel
- % of newborns receiving essential newborn care
- % of women receiving post partum care within three days of birth
- % of infants of six-nine months of age receiving

IR 2: Coverage and Use of Key Malaria Interventions Increased

Illustrative Activities

- Support access to quality drugs
- Improve the quality of malaria services within focused antenatal care
- Update and strengthen supervision
- Expand distribution of LLINs
- Expand IRS and appropriate vector control approaches
- Strengthen and expand community mobilization and education efforts

Illustrative Indicators

- % of households that own an LLIN
- # of household sprayed for IRS
- % of pregnant women that slept under an LLIN the previous night
- % of children <5 who slept under an LLIN the previous night
- % of pregnant women that have received at least two doses of SP for ITPp
- % of children under five with suspected malaria who have received treatment with an ACT within 24 hours of the onset of symptoms.

IR 3: Coverage of HIV/AIDS Prevention, Treatment, Care, and support increased

Illustrative Activities

- Expand coverage of prevention messages and activities to MARPs
- Expand access to partner reduction messages and materials among targeted groups.
- Increase sales points for condoms
- Improve counseling and reduce stigma in health care settings
- Expand linkages with important related services
- Expand and improve services fo pediatric cases of HIV/AIDS
- Increase active case-finding among partners

Illustrative Indicators

- # of Most-At-Risk Group members reached with BCC
- # of infected individuals on ARV at USG-supported sites
- # of additional infants on ARVs : USG-supported sites
- # of PLHA receiving TB treatment
- # of health staff trained in stigm reduction.

IR 4: Water Supply and Sanitation Improved and Other Infectious Diseases Decreased

Illustrative Activities

- Support drilling of boreholes
- Expand social marketing of water purification tablets (e.g., Aquatabs)
- Support construction of improved sanitation systems
- Engage communities and expand messages and campaigns for improved hygiene (e.g., frequent hand washing) and care for potable water and sanitation facilities
- Support improved planning, operations and actions to improve TB case detection and management
- Others, per funding sources

Illustrative Indicators

- # of people with access to improved drinking water supply
- # of people with access to improved sanitation facilities
- # of clinics and schools with access to improved drinking water supply
- # of schools with access to improved sanitation with separate facilities for boys and girls
- Case detection rate for TB
- Other disease-specific indicators

IR 5: Regional, District and Community Manag ment and Systems Improved in focus regi

Illustrative Activities

- **Regional**: Test results-ba approach
- Develop leadership, man teamwork
- Monitor and support exec national policies and best
- **District**: identify and faci elimination of bottlenecks funding
- Expand and strengthen q assurance mechanisms
- **Community/service deli** Ensure access to training
- Support outreach through community workers
- Expand contacts with ele community leaders

Illustrative Indicators

- % of Item 3 budget recei executed each quarter
- % of SDPs that have com cycle of QA by the end of
- # of SDPs that received t supervision visits
- # of stock outs of commo
- % of districts using agree management practices/to
- % of districts receiving fin for health activities from D Authority
- % of districts with X numb implementation plans.

This water and sanitation project is expected to contribute directly to the achievement of Strategic Objective 8. In particular, it will contribute to IR 1 and IR 4. Interventions implemented under this new activity are expected to contribute to the overall SO8 portfolio and assist the MoESS/GES and USAID/Ghana to achieve targets related to the following indicators at the Intermediate Result level of SO8:

- IR1: Increased educational opportunities for girls in underserved areas
  - % of pupils in targeted schools enrolled and retained in school.
- IR4: Increased community advocacy for and contribution to provision of water and sanitary facilities.
  - # of DEOs and PTAs/SMCs showing responsiveness to school-communities.

In addition, the activity will contribute to reporting on the following Basic Education Program Element common indicators:

- # of officials and administrators taking actions that support the development of improved water supply.
- # of officials and administrators taking actions that support the development of improved sanitation facilities.
- # of learners enrolled in USG-funded pre-primary schools with improved drinking water supply.
- # of learners enrolled in USG-funded pre-primary schools with improved sanitation facilities.
- # of learners enrolled in USG-funded primary schools with improved drinking water supply.
- # of learners enrolled in USG-funded primary schools with improved sanitation facilities.
- # of teachers using improved water supply provided with USG support.
- # of teachers using improved sanitation facilities provided with USG support.
- # of evaluations conducted by the USG on using water and sanitation facilities.

IV. Description of the Ghana Water and Sanitation Project and Expected Results

A. Overview

The Ghana Water and Sanitation (WatSan) Project will help achieve the water and sanitation component of Intermediate Result 4 of the USAID/Ghana Health Sector Framework and Intermediate Result 1 and IR 4 of the USAID/Ghana Education Framework. The WatSan Project will also support the Senator Paul Simon Water for the Poor Act of 2005 priorities of ensuring both equitable and sustainable access to safe drinking water and sanitation, and all proposed activities will fully meet the requirements of the USAID Congressional water earmark (provided as a supporting document for this RFA.) To contribute to more equitable access, the WatSan Project will emphasize expanding access among Ghana's rural and urban poor—those people with the most limited access to these services. To ensure that access improvements are sustained, the WatSan Project will be guided by a development hypothesis that requires activities under five distinct components. These include:

- Support for establishing new or rehabilitating existing improved water supply, sanitation and hand washing facility infrastructure.

- Small Grants Facility to encourage innovative partnerships between community groups, local NGOs, and water supply and sanitation service providers in the development and maintenance of water, sanitation, and hand washing facilities for health clinics, schools and households.
- Capacity-building support for small grant recipients and, if needed and appropriate, for local political, and district and regional level entities to facilitate funding, support and oversight.
- Strategic and coordinated execution of behavior change activities to support appropriate maintenance and use of water, sanitation, and hand washing infrastructure and hygiene behaviors for activities funded under the Small Grants.
- Development of partnerships with private companies that leverage USAID resources to support expansion and use of improved water, sanitation, and hand washing infrastructure and hygiene behavior.

All of these elements will require systematic coordination with related USAID/Ghana projects, relevant Government of Ghana agencies, other USAID water/sanitation programming in Ghana, and other donors supporting water and sanitation programs. Since Ghana is performing relatively well in achieving the MDGs related to access to water the WatSan project will be expected to have 50% or more of its efforts focused on infrastructure, maintenance and behavior change related to sanitation rather than having too tight a focus on potable water access and use. It is understandable that the project efforts must be community driven, however, USAID would like see balance between water and sanitation activities.

These components are described in greater detail in Section IV. C. The Expected Results and associated Illustrative Indicators for each component are presented in Section IV. D.

B. Geographic Focus and Population Targeting

With the Government of Ghana, USAID has agreed to implement this project in the same regions as its health and education programs: Greater Accra; Central Region; Brong-Ahafo; and Western Region. In addition, as part of Global Development Alliances with Coca Cola and Rotary International, the Recipient will need to perform some aspects of the scope beyond these four regions, notably in Volta and Eastern regions, as described in Section C 5) below.

The **Greater Accra** Region is characterized by a population estimated at 3.8 million in 2008 and is almost 90% urban containing several large urban slums. It has received comparatively little funding from health development partners in recent years. New and innovative USAID health programming addressing the needs of the urban poor began in just the last few years. These efforts will be expanded over under the new USAID/Ghana Health Strategic Framework. A major challenge for these efforts will be identifying and mobilizing urban poor communities of greatest need of assistance. The same will be true for water, sanitation and hygiene activities under the WatSan Project. The 2003 Core Welfare Indicators Questionnaire (CWIQ) Survey estimated that about 82 per cent of the households in this region obtain their drinking water from improved water sources (pipe water in the dwelling, outdoor tap, borehole, and protected well) down from 94.3 per cent in 1997. The majority (86.4 per cent) of this region's urban households use improved water sources for drinking compared to about half (50.2 per cent) of its much smaller number of rural households. Both poor in this region have significantly lower access to improved water sources. Access to improved sanitation is relatively high in this region but as is typical in Ghana relies heavily on questionable-quality shared sanitation facilities. The poor also have significantly lower sanitation access.

Central Region has an estimated 1.8 million population and has long been classified as one of the four poorest regions in Ghana (along with the three northern regions). Urbanization is progressing rapidly with about 40% of the current population living in towns and the regional capital, Cape Coast. USAID has already supported intensive assistance for the health program in this region over the past five years. Many of the regional and district health staff have already participated in one or several USAID-funded activities, including actions to improve community understanding and involvement in a number of health areas. The 2003 Core Welfare Indicators Questionnaire (CWIQ) Survey estimated that eight out of ten (80.9 per cent) households in the region obtain their drinking water from improved water sources. Overall access to both improved water and sanitation facilities in urban areas is only slightly better than in rural areas.

Western Region has the urban area and port of Takoradi, but the majority of the region's population, about 55%, is still rural. Its estimated population of 2.3 million includes many who lack access to basic health services. Similar to the Greater Accra Region, it has received comparatively little funding from health development partners in recent years. This region is the site of the offshore gas and oil exploitation that is beginning in Ghana, so it is likely to experience both rapid growth of economic activity and potential strains to its social services and infrastructure. At the same time, there is considerable potential for partnerships with these new commercial actors to improve health and related infrastructure in the area. The region also includes major cocoa farms and production of other major export crops such a palm oil kernels and pineapple. In this region, project activities are expected to begin in the southern districts, as the more northern districts present significant logistical challenges due to lack of roads and other transportation links. The 2003 Core Welfare Indicators Questionnaire (CWIQ) Survey estimates that the need for improved water supply is still significant. Only seven out of every ten households in the region obtain their drinking water from an improved source. The rural and urban poor again fare much worse than the general population. Access to basic sanitation facilities (shared or unshared) remains very low among the region's rural and urban poor.

Brong-Ahafo Region has an estimated population of almost 2 million with a level of urbanization similar to Central Region, almost 40%. This region has not been and will not be a focus of USAID health activities although USAID education activities will be conducted here. Of the four focus regions for the WatSan Project, the 2003 Core Welfare Indicators Questionnaire (CWIQ) Survey found improved water supply access to be the lowest. Less than 70 per cent of households in the region obtain their drinking water from an improved source, lower than the national average of 74.1 per cent. The survey also found low levels of improved sanitation.

Selection Criteria for Communities

The targeting of specific communities, school and clinics within these four regions by the WatSan Project activities should be based on identification of opportunities through (1) consultation with Community Water & Sanitation Agency, Ghana Water Company Limited, and District Assemblies; (2) consultation with Development Partners such as DANIDA and UNICEF, international NGOs working in these four regions; (3) synergistic implementation with other USAID/Ghana health and education activities to target schools already pursued by USAID Education program and Communitybased Health Planning and Services (CHPS) developed by USAID Health program; (4) innovative program development; and (5) potential for engagement with willing and motivated local stakeholders. Also, Project activities will target completion of (1) some activities in all four regions, and (2) at least 30% of Project level of effort in addressing the needs of poor urban populations.

For school-focused activities, the Project will initially focus on a list of 30 primary schools developed by the USAID/Ghana Education Team in the Greater Accra, Western and Brong-Ahafo regions that have priority water and sanitation infrastructure needs. This list is not necessarily exclusive, but should be used for early prioritization of activities in schools. The schools will be selected within the target districts on a competitive basis by USAID/Ghana Education Office in cooperation with the Recipient. The process envisions that the districts will apply to be included with some competitive criteria for selection (clusters, number served, proposed match by district, etc.)

C. Project Components

1) Infrastructure Development. Through sub-contracting, direct implementation, community mobilization efforts, and/or a combination of these implementation modes, the WatSan Project should contribute to development of new or rehabilitation of existing infrastructure that most cost effectively and appropriately meets the water supply and sanitation needs of target communities. These might include:

- Boreholes and appropriate pumps.
- Hand-dug wells and installation of appropriate pumps and/or protection devices to maintain water quality.
- Pipe system establishment or expansion including establishment of community stand posts.
- Secure community water storage facilities connected to piped networks.
- Construction and/or manufacture of appropriate improved sanitation system components or facilities and their installation.
- Installation of improved sanitation facilities at clinics and schools.
- Public hand-washing facilities at clinics and schools or other communal areas.
- Rainwater harvesting systems.

For all infrastructure improvements, the Recipient must ensure that the work done is of high standards and is in compliance with all applicable U.S. and Ghanaian laws and requirements. For example, the Project must test water from all supply improvements to verify its biological and chemical safety according to guidance established by USAID environmental compliance regulation. All infrastructure improvements must also be consistent with SIP guidelines. Close oversight will be required for all phases of infrastructure work: design, planning, implementation, official acceptance of the work and follow-up of any problems that occur after official hand-over.

For sanitation infrastructure, the WatSan Project will (1) only support development of shared facilities when robust and financially-viable arrangements for the operation and maintenance of such facilities are established, and (2) use program approaches that minimize the level of subsidization of household level improvements.

2) Small Grants Facility. There are many complicated challenges to sustainably extending water and sanitation services, from ensuring proper maintenance of shared sanitation, and hand-washing infrastructure in schools and clinics to finding affordable ways to extend piped network access to urban slums. Regardless of the specific challenge, there tends to be a range of stakeholders that need to contribute to finding solutions. In addition to the obvious government (CWSA and GWCL) or private sector organizations responsible for service provision, it is the community of beneficiaries themselves that are the key stakeholders. In Ghana, these community stakeholders are commonly given a unified voice

through local NGOs, CBOs, parent-teacher groups associated with schools, community groups associated with health clinics, local political bodies, social clubs, and civic unions, etc.

The main purpose of the Small Grant Facility is to build capacity of these WatSan community groups so as to empower them to more effectively contribute to the equitable establishment and sustained operation of water and sanitation infrastructure. To this end, the Small Grants Facility will provide seed funding for innovative community-generated activities that will complement its Infrastructure Development activities in schools, clinics and at the household level.

- In developing this Small Grants Facility, the WatSan Project will need to:
- Conduct a landscape analysis and identify prospective groups in targeted communities of the four regions;
- Establish guidelines for submitting small grant proposals, including the range of funding to be made available and the types of activities based on local needs to be supported and parameters for community-provided matching;
- Introduce the Small Grants Facility approach to high priority prospective grantees;
- Establish a process for proposal review and revision, where appropriate;
- Establish a process for disbursement and tracking of funds and reporting on activities conducted; and
- Follow up on issues and problems as needed.

3) Capacity Building Support. It is likely that some local district authorities and many community groups awarded small grants will need support to ensure that they can effectively play their important roles. These roles will likely include: oversight of or actual maintenance of infrastructure; identifying sources for and generating funds to purchase spare parts, cleaning supplies, and the like; ensuring compliance with guidelines on use of such facilities as water pumps, waste disposal, etc.; keeping the larger community informed of issues and problems and assisting in solving them; and, establishing effective approaches to participation and governance. To support these groups in carrying out their roles, the WatSan Project will need to:

- Provide appropriate technical and management training to the community groups.
- Provide Hands-on technical assistance and support.
- Facilitate sharing of lessons learned from one group with others.
- Facilitate collaboration among groups to improve their governance and support.

USAID's previous experience shows that WatSan infrastructure development is less problematic and easier to accomplish than proper maintenance and preservation of the already built facilities by the local community groups. To address the problem of sustainability, the project will be expected to focus equally on strengthening governance and building capacity of local community groups rather than focusing too much on the infrastructure development. This approach is more sustainable, with a higher likelihood that the facilities will remain functional years after USAID completes its activities.

In addition, the WatSan Project will encourage a positive political and support environment for the community groups at the district and regional levels. This support could include capacity building for local political, and district and regional level entities especially to help facilitate on-going funding, support and oversight of community level efforts.

4) Strategic Behavior Change Interventions. To achieve the health impacts that are intended with the Project investments in water supply and sanitation infrastructure and management, target communities must maintain, appropriately use the infrastructure, and also improve personal, family, and community behaviors and norms regarding hygiene. In close cooperation with other USAID/Ghana health partners, the WatSan Project will lead formulation of a strategy to promote these necessary behaviors, develop partnerships for its implementation at the local level, and assist in coordinating its execution. For the strategy, the WatSan Project will guide the conduct of formative research to prioritize those behaviors of most significance to improving health in target communities, development of messages and materials, support for behavior change communication and demonstration campaigns and other initiatives for the targeted communities, evaluation of these efforts, and revisions as needed. It is anticipated that these initiatives will address behaviors such as the following:

- Use of improved water sources and maintenance of their environment.
- Protection of potable water from contamination in the home (e.g., appropriate containers, covers).
- Promotion of household water treatment.
- Maintenance of improved sanitation facilities.
- Consistent and appropriate use of sanitation facilities.
- Appropriate hand-washing and related hygiene (e.g., encourage individuals to wash hands using soap, particularly after going to the toilet and before eating).
- Others, as appropriate and needed.

The WatSan Project will ensure that the messages and materials are consistent with those promoted by the Ministry of Health, the Ghana Health Service, CWSA, and other health education entities. This program should draw from messages already developed by the Ministry of Health and the USAID funded School Health Education Program and print additional copies of posters and other handouts for distribution, especially in schools and clinics.

- Important partners at the community level for these initiatives will include:
- Community entities that receive small grants under the Small Grant Facility.
- Political and religious organizations and leaders.
- Health clinics and their staff and community support groups.
- Schools and teachers as well as parents groups.
- Other CBOs and NGOs.
- Private sector groups that have skills in developing and using promotion materials, print media and other, local media.
- Other formal and informal groups in the community.

5) Public-private partnerships: In the 1970s, 70 percent of resource flows from the United States to the developing world were from official development assistance and 30 percent were private. Today, 85 percent of resource flows from the United States to the developing world are private and 15 percent are public. USAID seeks to leverage these private resource flows through the Global Development Alliance (GDA).

GDA is a public-private partnership model that allows USAID to leverage resources from private sector partners and to use those assets in a way that benefits the business interests of the resource partner while furthering the goals of the USAID Mission. A GDA meets the following criteria:

- At least 1:1 leverage (in cash and in-kind) of USAID resources;
- Common goal defined for all partners;
- Jointly-defined solution to a social or economic development problem;
- Non-traditional resource partners (companies, foundations, etc.);
- Shared resources, risks and results; and
- Innovative, sustainable approaches to development.

A number of private companies and voluntary organizations are interested in partnerships with USAID that will aim to expand access to and support programming for improved water and sanitation in Ghana. Already, USAID/Ghana is in the process of finalizing terms of cooperation with Rotary International and Coca-Cola related to water issues. These partnerships are likely to leverage additional resources for safe water supply, sanitation, integrated water resources management and hygiene. The recipient will be working closely with these two organizations on implementing agreed targets. The WatSan Project will be expected to provide important technical advice and support for:

- Identifying jointly agreed upon geographical areas and needs as well as organizational arrangements for focusing partnership activities;
- Drafting concept papers and other documentation for solidifying the understandings and roles and relationships of the parties to new partnerships;
- Facilitating the partnership arrangements and start up;
- Monitoring implementation and identifying issues and helping to resolve them;
- Reporting on successes and contributions of the partnerships to the desired results.

USAID— Coca-Cola Partnership

The Coca-Cola Company (TCCC) and the U.S. Agency for International Development (USAID) have created the “Water and Development Alliance” (WADA), a unique partnership to address community water needs in developing countries around the world. In conjunction with the USAID Mission in Ghana and Coca-Cola system partners (foundations and bottling facilities), and with support from the Global Environment and Technology Foundation (GETF), the WADA partnership in Ghana supported through this program will increase access to water supply and sanitation services for Ghanaians.

The USAID-Coca-Cola alliance will focus on the Greater Accra region. It will be implemented through the recipient of this award. This alliance is expected to be valued at $1,500,000 over the three year life of project (LOP). The recipient will work closely with USAID/Ghana Mission staff and GETF on monitoring a progress of the alliance. This alliance will be implemented from 2009-2011.

USAID and Coca-Cola are in a process of developing a detailed implementation plan for the alliance. All activities covered by the alliance will fall within the mandate and components of the USAID/Ghana WatSan project:

- Infrastructure development valued at $1,000,000 will be funded by the Coca-Cola Africa Foundation and USAID/Africa Bureau. Funding will be administered as a subaward from GETF to the recipient of this award This will be included in the award budget as Coca-Cola leverage funding;

- Behavior change communication and capacity building aspect of the alliance valued at $500,000 will be sponsored by USAID/Ghana as part of this award. The recipient is expected to support this effort working closely with the implementing organization of the USAID/Ghana BCS project.

USAID—Rotary International Partnership

USAID and Rotary International (RI) teamed-up to save lives by bringing clean drinking water and basic sanitation to communities in the developing world in a GDA alliance called "International H20 Collaboration". The public-private alliance will leverage the resources of both organizations to implement sustainable, long-term water supply, sanitation, and hygiene projects in three countries: Dominican Republic, Ghana, and the Philippines. Other countries will follow based on the success of these pilot experiences. Alliance activities in each country are funded jointly by USAID and Rotary International, with each partner managing its own resources under a parallel funding model.

The USAID-Rotary International H20 Collaboration activity will begin in Greater Accra and the Central Region, expanding to the Volta and Eastern regions in the second and third year. This alliance is expected to be valued at a combined total funding of $2,000,000 over the three year LOP. This alliance will be implemented from 2009-2011.

USAID/Ghana and local Rotary International representatives are in a process of developing a detail implementation plan for the alliance. All activities covered by the alliance will fall within the mandate and components of the WatSan project:

- Infrastructure development valued at $1,000,000 funded directly by the RI Foundation to organization(s) of their choice. This will not be a part of the award budget; and
- Behavior change communication and capacity building aspect of the alliance valued at $1,000,000 sponsored by USAID through this award, with a possibility to expend the scope of work into infrastructure as resources allow. The recipient is expected to support this effort, working closely with the implementing organization of the USAID/Ghana BCS project.

Rotary International is responsible for procuring services for its component of funding without major USAID or recipient involvement. The recipient will only be directly responsible for carrying out the USAID-funded component of the Alliance's agreement. However, the recipient will work closely with USAID/Ghana Mission staff and RI on coordinating and sequencing all activities, and monitoring the overall progress of the alliance.

Cross Cutting Issue: Systematic Coordination. Given the complexity and dispersed nature of the various activities to be implemented under the WatSan Project and the multiple government and donor stakeholders in the relevant sectors, the Project requires an effective but lean management unit in Accra to systematically lead coordination of project activities and engagement with sector stakeholders. This management unit must provide the following:

- **Leadership.** A clear vision of the Project's roles and responsibilities is needed to achieve the results in a collaborative and integrated environment with other USAID, other donor, private sector, and Ghanaian partners and investments.
- **Harmonized Development of Project Mechanisms.** The Recipient will establish and manage several implementation mechanisms, such as the small grants facility, that will assure the effective functioning of the various project components as described below. These mechanisms must be designed and managed in a harmonized manner.

- **Monitoring and Oversight.** Highly effective procedures will be required for monitoring contracts, small grants and other agreements under the Project to ensure that all activities and infrastructure inputs are of high quality and promote sustainability to assure long-term effectiveness. To achieve maximum impact, the WatSan Project must collaborate closely with other USAID and other donor activities, and be fully aligned with GOG plans and frameworks. For all such integrated and collaborative activities, the WatSan Project will be responsible for ensuring that activities and funding managed by the Project are appropriately tracked to document both the impact from Project funding and leveraged collaborative inputs.
- **Coordination.** To help develop effective intersectoral interventions, project activities must be closely coordinated with other USAID programs as well as those of the GOG and other development partners. The Water and Sanitation Specialist will be the USAID's Agreement Officer's Technical Representative. He will be the liaison between the implementing partner, other USAID/Ghana projects, and the USAID/Ghana Alliance Specialist. The primary collaborating partners anticipated for this Project are described below.

Behavior Change Support Project

The USAID Behavior Change Support (BCS) Project will support the Ghana Health Service and other private and civil society groups to increase the health status of Ghanaians through communication, community mobilization and marketing interventions that can be sustained over time. The Ghana Water and Sanitation Project must work in close collaboration with the BCS Project in the development and implementation of its BCC component. Coordinators for these two projects must meet on regular basis, suggested to be bi-monthly, to discuss and synchronize activities. With its partners and counterparts, the BCS Project will develop evidence based communication, mobilization, and community-based distribution interventions that positively impact health behaviors in households and communities, including use of key services. The BCS project will assist in all technical areas (FP, MNCH, including nutrition, malaria, HIV/AIDS, water and sanitation, and others) to strengthen capacity and effectiveness in these key functions and complement the key service delivery counterparts and partners, including the Focus Region Health Project. The BCS Project will assist in identifying and developing local, private sector expertise, e.g., in mass media, to develop and implement BCC campaigns and effective, longer-term strategies to support behavior change and health service utilization. The WatSan activity will focus on the technical inputs to behavior change messages, while the BCS project will focus on the crafting and delivery of messages. Some of these issues and specific roles and responsibilities of each project will be clarified in the respective start-up plans and subsequent annual workplans.

Social Marketing

USAID/Ghana is in the process of transferring social marketing support to a new, locally incorporated not-for-profit entity. This entity will continue to build the market for commercial distribution of family planning products including condoms, oral contraceptives and injectables, and may be asked to add support for water purification tablets (Aquatabs), and other health products to the social marketing program. The Aquatabs will be an important complement to the Ghana Water and Sanitation Project's work in improving access to potable water. To maximize impact, the marketing initiatives including the distribution strategies, messages and use of mass media for these and other products will be closely coordinated with the BCS Project mentioned above as well as with other relevant USAID projects.

Focus Region Health Project

To ensure impact with its limited resources, USAID/Ghana's support for FP/MNCH (IR 1) and support for improved management and systems (IR 5) will concentrate on three targeted regions, including

Greater Accra, with a significant urban population. The Focus Region Project will provide technical and financial assistance for strengthening management systems from the regional to district and community levels and with community engagement in health sector and program implementation. Given its systems emphasis and anticipated relationships with the regional and district health teams, the Ghana Water and Sanitation Project will need to coordinate its activities closely with those of the Focus Region Project.

Malaria Project

USAID/Ghana's bilateral Malaria Project includes a substantial component for subgrants to local NGOs. It is anticipated that these sub-grants, particularly for those in the three focus regions for USAID's health program, will include FP and MNCH activities and services and may include support for water and sanitation, if appropriate.

Education Projects

The program of USG support to education in Ghana is evolving. The WatSan project will need to closely monitoring this development to maximize synergies between its school-based activities and other US government supported efforts.

Other Development Partner Activities

There are numerous donor supported projects, international NGOs, and local NGO implementers working in the four WatSan Project regions, including the USAID/WAfunded West Africa Water Initiative. The WatSan Project will work to minimize overlap and develop complementary activities by linking with established donor and water and sanitation sector coordination mechanisms and developing direct contact with these stakeholders.

D. Expected Results and Illustrative Indicators

The Ghana Water and Sanitation Project will be results-focused. For each of the Project components, the primary expected results and associated proportional levels of effort (LOE) are presented below along with illustrative indicators for use in tracking results. After award, USAID and the Recipient will negotiate a final results monitoring framework and specific targets for chosen indicators (e.g., number of schools with improved hand washing facilities) that are both ambitious and feasible given the funding available, the needs of the clinics, schools, and households in target communities.

1) Infrastructure Development (illustratively, 30% LOE)

Activities under this component will result in improving access to improved water and sanitation infrastructure for individual households, communities, schools and clinics in the target areas. The specific definition of "improved" infrastructure will follow the principles described earlier and the standard definitions used by USAID (which mirror the internationally accepted MDG definitions developed by WHO/UNICEF Joint Monitoring Programme). Given the importance to USAID of reporting on contributions to the MDG for water and sanitation, the WatSan Project will be required to report on two indicators for this component. However, several other indicators would also be necessary to capture the achievement of the entirety of the expected results under this component.

Required Indicators

- Number of people/households in target areas that gained access to improved water supply as a result of USG assistance.
- Number of people/households in target areas that gained access to improved sanitation facilities as a result of USG assistance.

Additional Illustrative Indicators

- Number of clinics with access to improved drinking water supply.
- Number of schools with access to improved drinking water supply.
- Number of positive boreholes developed.
- Number of piped water systems installed and functioning, determined annually after installation, over the life of the project.
- Number of clinics with access to improved sanitation facilities.
- Number of schools with access to improved sanitation facilities with separate facilities for boys and girls.
- Number of handwashing facilities established in schools or clinics.

2) Small Grants Facility (illustratively, 20% LOE)

The Small Grants Facility should contribute to achieving the results under Component 2: Infrastructure Development by assisting in developing innovative modes of establishing new infrastructure. However, an even more central result under this component will be mobilizing communities to properly maintain and sustain infrastructure improvements over time.

Illustrative Indicators

- Number of targeted communities with evidence of regular activities performed by community members to maintain infrastructure, measured annually over the life of the project.
- Number of sanitation facility installations that are clean and well-maintained six months after installation and annually thereafter over the life of the project.

3) Capacity Building Support (illustratively, 15% LOE)

This component's activities will result in Small Grant recipients with improved capacity to mobilize community members to actively participate in the improvement and maintenance of water and sanitation infrastructure and local official bodies that provide support for these efforts.

Illustrative Indicators

- Number of Small Grant recipients trained in community mobilization techniques.
- Number of Small Grant recipients that have successfully institutionalized themselves (meet regularly, identify problems, take action to resolve problems, have funds for small purchases) and are actively maintaining infrastructure improvements.
- Number of local government/district/Ministry personnel trained to support/encourage community organizations to maintain infrastructure improvements.

4) Strategic Behavior Change Communication (illustratively, 20% LOE)

This component's activities are expected to result in water and sanitation infrastructure that is well utilized by target communities and increased adoption of complementary hygiene behaviors that will reduce water-borne disease.

Illustrative Indicators

- Number of hygiene messages disseminated by BCC entities to target communities

- Number of communities with measurable changes in behaviors such as handwashing, use of household water treatment and safe storage of water before use.
- Number of water supply and sanitation infrastructure installations that are actively -utilized, determined on an annual basis.
- Visible reduction or absence of fecal material around targeted clinics, schools and communities.

5) Development of Strategic Partnerships (illustratively, 15% LOE)

Activities under this component are expected to expand on the results of other components by managing existing partnership and potentially developing new partnerships with private sector and/or voluntary organizations committed to achieving the same results. The subsequent expanded impact will be measured using some of the indicators listed above but the results of efforts to develop and conclude these partnerships could be tracked using the following type of indicators.

Illustrative Indicators

- Existing partnerships perform adequately against agreed joint workplans.
- Number of memoranda of understanding signed with organizations to establish a new Global Development Alliance or other partnership.

Cross-Cutting: Systematic Coordination

These activities are expected to be integrated into and support achievement of all the components listed above. However, specific results are also expected including formal agreements with other USAID/Ghana development partners on modes of coordination, jointly designed activities, and high profile USAID engagement in national level water and sanitation sector donor and government coordination efforts.

Illustrative Indicators

- Number of memoranda of understanding signed with other development partners, donors, or other organizations detailing cooperative activities.
- Number of joint activities completed with other USAID development partners.

V. Performance Reporting

1. Annual Implementation Plan

The Recipient is required to prepare and submit an annual implementation plan on a schedule established by the USAID Agreement Officer's Technical Representative (AOTR) following the award. A first draft of the Year One work plan will be due within 60 days of the award of the Cooperative Agreement. It will cover the initial period through September 30, 2010. This implementation plan shall be reviewed and USAID will provide written comments forwarded to the Recipient within one month of submission. It will be finalized by the Recipient no later than two (2) weeks beyond the Recipient's receipt of USAID's written comments.

The implementation plan will serve as a guide for program implementation, a demonstration of links between activities and objectives, a basis for budget estimates, and the foundation for the monitoring and evaluation plan. The implementation plan will outline key activities and the expected results to be accomplished for that year and will be negotiated and shared within and outside of the USAID HPNO office as appropriate. A budget with sufficient detail to allow the AOTR to judge the efficiency of the

annual implementation plan should be included. The implementation plan budget should delineate an overall budget by line item, and a budget per objective and activity.

2. Monitoring and Evaluation Plan

Within 60 days of signing the Cooperative Agreement, the Recipient shall submit a final Performance Monitoring Plan for the timeframe of the project to USAID/Ghana. USAID expects that all performance measures will be part of a coherent system that will objectively assess the overall progress and impacts of project activities with the ultimate goal of achieving the expected results outlined in the program description. The plan should outline the processes that will be used to harmonize instruments and schedules to support GOG USAID/Ghana data reporting needs. This performance monitoring plan must include indicators pertinent to activity-level management and monitoring; baselines and/or a plan to establish any missing baselines within a three month period), and annual targets. The set of indicators should include the core Water and Sanitation indicators provided above.

The Recipient must use effective and efficient mechanisms to monitor progress, impacts, and successes of their activities and performances at all levels. USAID expects that the Recipient will be innovative and creative in their efforts to capture, document, and report all the outcomes of USAID assistance, while strengthening and using relevant national, regional and district level reporting systems.

3. Required Reports

Semi-Annual and Annual Status Reports

On a semi-annual basis following submission of the first work plan, and within 30 days following the close of each six month period (based on the USG fiscal year), the Recipient shall prepare and submit to USAID/Ghana written status reports (Semi-Annual Reports) that:

- Identify and relate the benchmarks and achievements, as identified in the applicant's annual monitoring and evaluation workplan, of the six month period of the approved work plan;
- Identify key problems or issues encountered, how they were or will be resolved, and, if/as required, recommended Mission-level intervention to facilitate their timely resolution;
- Include a brief summary of achievements during the concluding quarter towards planned targets; and
- Present success stories that the Mission might use in reports to either the GOG or USAID/Washington.

The second semi-annual status report will serve as the annual status report for the concluding year, and shall be submitted within 30 days following the close of the fourth quarter. In addition to meeting the above requirements, the annual report shall include a discussion, supported with quantitative and qualitative evidence, (which evidence shall remain auditable under the terms of the agreement and USAID program implementation procedures), of progress against indicators and/or impacts achieved to-date. This shall include clear identification of which impacts achieved were within the manageable interests of the Recipient and which were likely catalyzed by Recipient supported initiatives, leading to substantial, sustained achievement of results. This discussion will be instrumental in helping the Mission to complete Annual Reports to USAID/Washington on overall program impacts.

Quarterly Financial Reports

The Recipient must present a quarterly financial status report to USAID/Ghana on activity implementation, including actual and accrued expenditures for the concluding period and planned expenditures for the subsequent quarter.

Final Report

The Recipient must submit the original and one copy to the AOTR, one copy to the Agreement Officer and one copy, in electronic (preferred) or paper form of final documents to one of the following: (a) Via E-mail: docsubmit@usaid.gov; (b) Via U.S. Postal Service: USAID Development Experience Clearinghouse M/CIO/KM RRB M.01 U.S. Agency for International Development Washington D.C. 20523; (c) Via Fax: (202) 216-3515; or (d) Online: http://dec.usaid.gov

The final performance report must contain the following information:

- A comparison of actual activities and results with the plan established for the life of the program (may be presented in table format);
- Reasons why targets were not achieved or surpassed and why activities were delayed or not carried out, if appropriate;
- Success stories including examples of synergy and collaboration with partners.
- A summary of progress made in achieving indicator targets during the program (based on valid data collection and analysis);
- Other pertinent information, including recommendations and lessons learned, related to overall program results.

VI. Substantial Involvement

Substantial involvement during the implementation of this Agreement shall be limited to approval of the elements listed below:

- Approval of annual implementation plans and modifications that describe the specific activities to be carried out under the Agreement;
- Approval of specified key personnel;
- Agency may immediately halt a construction activity if identified specifications are not met;
- Agency and Recipient Collaboration or Joint Participation:
  - Concurrence on the substantive provisions of the small grant subawards including participation in the development of the selection criteria and/or participate in selection panels.
  - Approval of monitoring and evaluation plans, and USAID involvement in monitoring progress toward achieving expected results and outcomes.

USAID/Ghana reserves the right to visit project sites including but not limited to the offices of the Recipient, health facilities, communities and field sites for the purpose of monitoring any aspect of this award.

VII. Authorized Geographic Code

The authorized geographic code for procurement of services under this Cooperative Agreement is 935. The Recipient must comply with source and origin requirement in 22 CFR 228 for the procurement of commodities.

2. REQUEST FOR PROPOSALS (RFP)

SECTION C: DESCRIPTION/SPECIFICATIONS/ STATEMENT OF WORK

INDONESIA URBAN WATER, SANITATION AND HYGIENE (IUWASH) PROJECT

C.1 Introduction

C.1.1 Objective

The Indonesia Urban Water, Sanitation and Hygiene (IUWASH) Project will provide a range of technical assistance, both long- and short-term to support USAID/Indonesia's assistance objectives related to increasing safe drinking water and adequate sanitation access.

C.1.2 Importance to Foreign Policy Goals

Access to safe water and sanitation has multi-faceted development benefits, positively impacting environment, health, economic growth, women's empowerment, and school retention outcomes. Recognizing this importance, the international community established the Millennium Development Goal (MDG) target to "halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation" from a 1990 baseline. Similarly, the Senator Paul Simon Water for the Poor Act was passed in 2005 making "…access to safe water and sanitation for developing countries a specific policy objective…" of US foreign assistance. The Act placed particular emphasis on the increased sustainable access to safe drinking water supply and sanitation services, improvement of the services quality, and hygiene promotion. In response to the Senator Paul Simon Water for the Poor Act, USAID in Indonesia is launching IUWASH as a major component of the Sustainable Water Resources Management Assistance Objective.

C.1.3 Overview

Indonesian demographic trends suggest that ensuring safe drinking water and sanitation access will increasingly be an urban challenge. Already half of the population lives in urban areas, compared to only around 30% in 1990. This proportion is forecast to reach almost 60% by 2015.

Poverty is also becoming increasingly urban. By 2015, 45% of poor households will be in city slums as opposed to 30% in 2006[40].

Indonesia is currently off track in its efforts to meet an MDG target of 86% of the population with safe drinking water access by 2015[41]. Unlike in rural areas where progress towards the goal is being made, proportional access to improved drinking water sources in urban areas in Indonesia has been in a gradual decline since 1990 due to the burgeoning urban population. The proportion of households connected to

[40] United Nations Department of Economic and Social Affairs, 2006

[41] World Bank, Investing in Indonesia's Health: Challenges and Opportunities for Future Public Spending, 2008

piped water systems in urban areas remains particularly low. Only about 34% of urban Indonesians have direct access to such networked water supply systems which deliver services at a lower unit cost than many other alternatives[42]. Poor households suffer most. Because of prohibitively high connection fees and/or regulatory barriers to supplying water to informal settlements, up to 12 million of the 112 million Indonesians without piped water connections buy water from water vendors at prices twenty or more times higher than utility supplied water prices. This situation forces poor households to spend large proportions of their scarce incomes on water and works to limit their water consumption to levels inadequate for maintaining basic health and hygiene.

Under Indonesian law, local government is responsible for providing water and sanitation services. However, investment by local government water utilities (PDAMs) is lagging far behind the pace of demand. Through the National Action Plan on Clean Water (2004-2015), the planned investments in water supply were estimated at US$50 million per year. However, in order to meet the MDG of halving the number of people lacking sustainable access to clean water by 2015, nearly US$450 million per year needs to be invested[43].

GOI financing initiatives, such as subsidized commercial loans from state-owned banks, are being prepared to ameliorate investment gaps. The financing needs for water supply cannot be covered solely from the government budget. PDAMs lack creditworthiness due to a high burden of debt and arrears from previous loans. These result from: 1) previous central government driven projects that were too ambitious and not cost-effective; 2) the expected tariff adjustments that could not be executed as initially scheduled; 3) low tariffs that could not cover operational costs, let alone debt repayment; and 4) national monetary crises. PDAMs' debt to Ministry of

Finance (MOF) is now worth over IDR 6 trillion (US$500 million). Improving PDAM creditworthiness would make these utilities more attractive for needed financing.

Even more worrying is the urban sanitation situation. Only about 69% of urban households have access to the most basic sanitation, e.g., an improved pit latrine or more sophisticated system like a pour flush toilet. Even open defecation remains common with an estimated 20 million urban Indonesians (about 18% in 2006) living without access to any sanitation facility. Progress to address the resulting threats to human health and the environment has been very slow and is predicted to contribute towards Indonesia falling well short of its MDG basic sanitation target of 73%.[44] This figure does not consider quality of existing services.

Generating necessary demand that will accelerate improved sanitation faces many challenges.

One key problem is the low awareness in both the civic and government sectors on the importance of adequate basic sanitation, especially in relation to public health and productivity. The results of a Water Sanitation Program (WSP) sanitation impact study[45] indicated that the poor quality of sanitation in

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[42] WHO/UNICEF—Joint Monitoring Program (JMP), Republic Indonesia: Improved Water Coverage Estimates (1980-2006), 2008.

[43] National Action Plan for Water Supply, Director General of Cipta Karya, Ministry of Public Works, 2004.

[44] DHV BV et al: Capacity Building for Urban Sanitation, 2008; Robinson, A.: Enabling Environmental Assessment—East Java, Indonesia, WASP, 2007; WHO/UNICEF—Joint Monitoring Program (JMP), Republic Indonesia: Improved Water Coverage Estimates (1980-2006), 2008.

[45] WSP: Economic Impacts of Sanitation in Southeast Asia (Cambodia, Indonesia, the Philippines and Vietnam), November 2007.

Indonesia is resulting in economic losses of around US$6.3 billion per year or 2.3 % of the GDP. The low level of attention to adequate basic sanitation is illustrated by the small public budget allocated to developing basic sanitation. In the last 30 years, the GOI investment in the sanitation sector has been only USD $820 million or Rp. 200 per capita, much less than the required investment of at least Rp. 47,000 per capita.[46]

Political support for improving water supply and sanitation access in Indonesia has been limited in the past. However, such support is growing and could be at a critical tipping point, especially for sanitation. In beginning of 2009, Vice President Jusuf Kalla launched a government initiative of 10 million new water connections in 2013, which is led by the Ministry of Public Works with support from BAPPENAS and Ministry of Finance. For sanitation, the Ministry of Public Works prepared a five-year plan to develop 216 city-wide sanitation strategies, as well as improve solid waste management and drainage in 100 cities in 2014. BAPPENAS led Sanitation Technical Team (TTPS) gears up the national sanitation plan, in coordination with Ministry of Health, Ministry of Public Works and Ministry of Home Affairs. New guidance and regulations issued by the Ministry of Home Affairs Directorate for Public Administration on inter-jurisdictional cooperation and public service contracting may encourage new and more effective management approaches by local government. Also at the national level, "Minimum Service Standards" for local government delivered public services are being established and will include water and sanitation. The IUWASH Project will aim to take advantage of the opportunities offered by reinvigorated central government support for the sector and increasing local government responsibility.

While central government support and leadership for the sector is critical, they cannot do it alone. Decentralization over the last decade means that more control and responsibility for delivery of water and sanitation services lies with Indonesia's local governments. Urban water utilities, in addition to standards and regulations set at the national level, are also subject to the policies, priorities, procedures and resource allocations of local governments in Indonesia. For reasons ranging from lack of political will, corruption, weak capacity, unresponsive bureaucracy, and (in the case of sanitation services) low demand, local governments have not devoted adequate attention or resources to the improvement of water and sanitation services. A better functioning local government—one in which the executive and legislative branches are accountable for service delivery—is critical to the sustainability and continued improvement of water and sanitation programs. At the same time, in an era of decentralization, new ways for central and local government to work together to achieve development objectives must be developed and strengthened.

Over the last decade, USAID has supported several programs that have piloted and begun to roll out innovative approaches to addressing urban water supply and sanitation challenges in Indonesia. The most recent and significant contributions in this area have come from the Environmental Services Project (ESP). This activity is ending in March 2010 but has provided many valuable lessons for ongoing USAID and other donor efforts.

Lengthy ESP experience has consolidated USAID's comparative advantage in water, sanitation, and hygiene promotion in urban, as opposed to rural areas. The gaps that are related to urban areas, for both water supply and sanitation, include inadequate institutional capacity to deliver needed services, inadequate total coverage, inadequate inclusion of the poor (less than their proportion of the total

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[46] Urban Sanitation: Portrait, Hope and Opportunity, joint publication of BAPPENAS and WSP-EAP, 2006.

population), and lack of sufficient financial resources. There is an increased GOI desire for technical guidance and definition for institutional and operational improvements of water and sanitation services in urban setting. For water, these include focus on performance and governance improvements, planning, and financial management, for local government owned water utilities (PDAMs), the executive and legislative bodies. For sanitation, support would focus on advocacy and awareness raising, formation of local, multi-Agency sanitation working groups to prepare citywide sanitation strategies, and pilot community-based sanitation approaches. For hygiene, improvements include more defined roles and building behavior change communications skills.

The USAID-supported Safe Water Systems Program (SWS) experience over the last several years has complemented the work of ESP. Their efforts have demonstrated the low acceptance of safe water treatment options beyond boiling, and the importance of Ministry of Health involvement in disseminating messages about other options. Collaboration with the Ministry of Health led to the inclusion of Air RahMat, a chlorine-based water disinfectant, and other household treatment options (solar disinfection, ceramic filters, etc.) into the new national health and hygiene campaign. The campaign presents household water treatment and safe storage as major a factor in reducing diarrheal disease. Other healthy behaviors being promoted are: hand washing with soap, eliminating open defecation, solid waste management, and waste water management; of which altogether covered in recently launched National Policy and Strategy on Community Based Total Sanitation (STBM).

Technical solutions are critical to achieving successful water, sanitation and hygiene outcomes. However, USAID and other donor experience also points to the importance of citizen demand for better government services and mechanisms through which local governments will be held accountable to that demand. As such, long-term sustainability of water, sanitation and hygiene improvements is predicated on the adoption of more participatory and open processes (plans, budgets, service delivery) that involve not just PDAM and government executive branch, but also the citizens and local councils.

IUWASH will help address the growing urban water supply and sanitation challenges, taking advantage of growing political support for rolling out innovative solutions, and build on lessons learned from its recent urban water and sanitation assistance. By addressing accountability and governance issues simultaneously, the project will strengthen the capacity of local executives, legislative bodies, and civil society organizations to develop appropriate policies, allocate resources, execute budgets, and achieve performance standards needed to meet water, sanitation or other basic service needs of citizens, especially the poor.

Adapting to climate change is an environmental challenge that the project will address. Climate change can affect the quality and availability of raw water sources that supply utilities. For example, rising sea levels could infiltrate groundwater, mixing saltwater into the freshwater supply. Changed rainfall patterns may exacerbate variability of raw water yields, with significant implications for technology choice and design of water/sanitation facilities. An increase in extreme climate events such as droughts, floods, or storms may increase risks of damage to expensive infrastructure investments. The project will assess climate-related vulnerabilities related to water supply and sanitation services delivery, support innovative adaptive measures (both ‘hardware’ and ‘software’) and monitor results.

C.2 Statement of Work

C.2.1 Expected Results

The overall goal of IUWASH is that, at the end of 5 years, USAID assistance will have helped make significant progress in achieving Indonesia's safe water and sanitation MDG targets by expanding access to these services. The expected results to be achieved are:

- 2 million people in urban areas gain access to improved water supply as a result of US Government assistance.
- 200,000 people in urban areas gain access to improved sanitation facilities as a result of US Government assistance.
- The per unit water cost paid by the poor in targeted communities decreases by at least 20% through more participatory, transparent, accountable and financially enabled services.

In pursuing the expected results, the IUWASH project will support the Paul Simon Water for the Poor Act of 2005 priorities of ensuring both equitable and sustainable access to safe drinking water and sanitation. To contribute to more equitable access, IUWASH will emphasize expanding access among Indonesia's urban poor, currently those people with the most limited access to these services. To ensure that access improvements are sustained, IUWASH will be guided by a development hypothesis that requires the Contractor to execute activities which contribute to the achievement of three distinct types of intermediate results. These results include:

- Demand for safe drinking water access and improved sanitation mobilized among urban communities and households with currently unimproved access.
- The capacity to sustainably supply this mobilized demand with improved water and sanitation services built among the public and private sector institutions best placed to provide these services in urban areas.
- A governance and financial enabling environment created that supports equitable access to safe drinking water and improved sanitation in urban areas.

These intermediate results, the activities required to achieve these results and the indicators for tracking their achievement are prescribed below.

Component 1: Demand Mobilization for Improved Water and Sanitation Services

Demand for affordable and safe drinking water is high among the poorest Indonesian households. Surveys show that the urban poor pay on average 10-20% of their monthly income on water. The water that most of these households purchase is expensive or of questionable quality. The challenge is to mobilize this existing demand so that communities can work with water utilities to access more affordable and increasingly high quality piped water services. Several community mobilization approaches to accomplish this result have recently been piloted by USAID/Indonesia partners and others. To further mobilize demand for improved water supply access, IUWASH tasks are to include, as a minimum, the following tasks:

- Supporting scale-up of successful piloted schemes, e.g., community bulk water and micro financing for house connection, especially by building the capacity to implement these schemes within water utilities, local government, and their civil society partners.

- Promoting new innovations that can bring communities together to engage with utilities to broker more affordable, reliable, and safe water supply access. Possible innovations might include piloting pay-as-you-go systems managed at the community level, community water point-ablution block construction, and others.
- Promoting greater use of information and media to raise public awareness of PDAM performance in delivering water to poor communities and the cost higher costs paid by the poor for water.
- Developing citizen-based mechanisms for monitoring water services.
- Improving advocacy skills of water user groups or associations and help PDAMs and the executive and legislative branches of local and national government establish public fora through which public officials and water users can engage in dialogue.

A continuing challenge in expanding access to improved sanitation services is the comparatively low household demand or willingness-to-pay for such improvements. As such, IUWASH will target increasing the demand for improved sanitation at both the household and community levels. To lead the urban poor to invest in household and community-level sanitation improvements, IUWASH will increase the awareness of the urban populations to the economic, environmental, and health benefits of improved sanitation and use community pressure to build demand for improved sanitation access via the following tasks and other strategies:

- Developing skilled and adequately-funded government cadres and District Health
- Puskesmas) Sanitarians responsible for on-going sanitation and complementary hygiene awareness/behavior change efforts.
- Developing reward and competition programs among Districts, sub-Districts, and neighborhood units (RWs and RTs) for achievement of sanitation and related hygiene improvement goals of the citywide strategies or other local government programs,
- Supporting small-scale sanitation improvements in overall STBM strategy at communities, schools, and/or other public institutions and train the staff at these facilities to help model good sanitation and related hygiene practices among community members.
- Creating opportunities to involve citizens in monitoring performance of sanitation services.
- Promoting greater media coverage of sanitation issues through training in investigative reporting and the effects of sanitation on public health.

To ensure that all such demand mobilization efforts are sustained into the future, IUWASH will focus on building the capacity for implementing and expanding such efforts within relevant GOI institutions at both national and local levels, utilities, and civil society groups.

The targeted outcomes for this area will include:

- At least 40,000 households willing to pay for sanitation improvements (based on survey evidence or observed increased investments by households and/or communities in improved sanitation facilities).
- At least 40 civil society groups and/or government cadres implementing programs to mobilize improved access to safe drinking water and adequate sanitation.

- At least 20 civil society groups that report on PDAM operations or performance.

Component 2: Capacity Improvements to Provide Sustainable Safe Water and Sanitation Services

To sustainably realize overall expected results, IUWASH capacity improvement activities will facilitate the delivery of expanded water supply and sanitation services on a sustainable basis, i.e. effectively meet demand. To this end, IUWASH will provide technical assistance to water utilities, private businesses that can contribute to sanitation improvements, and local government institutions contributing to both sustainable water and sanitation service improvements. This assistance will address the technical, financial and accountability aspects of improving/ expanding water and sanitation services.

Building and expanding on the successes of past USAID assistance in building water utility capacity, especially under the Environmental Services Program, IUWASH will work to systematically improve the capacity of water service providers to provide high quality service and expand service to new customers, especially the urban poor, through the below tasks:

- Improving operational performance and governance/management of water utilities (PDAMs) through development of Standard Operating Procedures, staffing improvements, non revenue water reduction, energy efficiency improvements, billing systems improvements, addressing autonomy and revenue retention issues with local governments, network pressure management, and customer services improvement.
- Improving water utilities' planning capacity through assistance in business plan development, tariff analysis and structuring, and capital improvements planning and water resources management including response options to adapt successfully to global and climate induced changes and impacts.
- Improving water utilities' financial performance and credit worthiness through financial and investment plan development, full cost recovery tariff setting, debt management, and performance monitoring tools for water utilities to obtain an investment-grade credit rating that will attract investment to the water sector.
- Building utility capacity to leverage resources from government/donors/private sectors/investors to fund expanding water services for the poor.
- Building utility capacity to scale-up successful piloted schemes, e.g., communal metering and micro financing, and to promote new innovations that can bring communities together to engage with utilities to broker more affordable, reliable, and safe water supply access.
- Strengthening PDAM reporting and other means of accountability to local government and citizens.

For sanitation, IUWASH will focus both on the government institutions responsible for the planning and implementation of community and city level sanitation improvements (i.e., sewerage and associated drainage and solid waste management) as well as the private sector providers that can construct and manage small-scale household and community level sanitation improvements. In particular, tasks will include:

- Improving local planning and implementation of sanitation improvements via technical assistance to the multi-stakeholder Sanitation Working Group (POKJASAN) in developing and implementing more participatory citywide sanitation strategic plans in collaboration with the National Working Group on Water and Environmental Sanitation (POKJA AMPL) and Sanitation Technical Team (TTPS), led by BAPPENAS.

- Engaging local governments in the implementation of the Ministry of Health's National Community-based Total Sanitation Strategy (STBM) that includes the five pillars of diarrhea prevention i.e. stop open defecation, hand-washing with soap, household drinking water management and hygiene food preparation, household solid waste management, and household waste water management.
- Building private sector and/or community based organization capacity to develop and provide appropriate, affordable, and appealing improvements to household level sanitation facilities (e.g., improved toilet facilities affordable to poor households) and small-scale community improvements (e.g. community septic tanks, sustainably operated communal toilet facilities).
- Supporting local government efforts to introduce and implement new systems of performance management for sanitation (and water) including setting appropriate targets, collecting and analyzing data, improving the quality of reporting and rewards/punishment for good/bad performance.

To sustain and promote future scaling up of such capacity improvement efforts, IUWASH will coordinate with Ministry of Public Works in building national and/or regional-level institutional and human resources capacity to continue such work into the future for example through such organizations as PERPAMSI (Association of Indonesian Water Enterprises). To disseminate good practices to urban local governments, IUWASH will work with existing associations and NGOs such as the Association of Indonesian Cities (APEKSI), Association of Indonesian Districts (APKASI), Urban and Regional Development Institute (URDI) or Center for Local Government Innovation (YIPD).

The targeted outcomes for this component will include:

- At least 40 PDAMs with improved technical, financial and management performance as indicated in the PDAM 'healthy' indicator defined by the Ministry of Finance.
- At least 20 PDAMs in default of old debts are assisted in restructuring their outstanding debt.
- At least 20 PDAMs with improved credit worthiness.
- At least 20 PDAMs implementing necessary climate change adaptation measures, based on preliminary raw water sources vulnerability assessment.
- At least 20 local governments implementing integrated sanitation and hygiene interventions that reflect their citywide sanitation strategic plans.
- At least 30 small and medium businesses providing affordable construction and sanitation facility management services.
- At least 20% increase of poor residents in targeted communities who report greater satisfaction with water and sanitation services.

Component 3: Create An Enabling Environment Supporting Equitable Water and Sanitation Services

The overall enabling environment in Indonesia must improve to ensure that both demand mobilization efforts and water and sanitation improvements are sustained and able to be scaled up so that water and sanitation improvements reach all urban poor. Two important aspects of this enabling environment include increased political and institutional support for policies that promote desired sector reform and access to financial resources to fund water/sanitation services improvements (at the city/utility level and at the household level). IUWASH tasks to create enabling environment will include:

- Supporting advocacy efforts to expand political support for improving water supply and sanitation access in urban settings among governments and legislatives bodies at local, regional and national level. This advocacy will promote improvements in relevant policies, better coordination in planning, monitoring and evaluation systems to track progress in meeting MDG safe water and sanitation goals, and securing adequate budget allocation for this sector. Direct technical assistance to local councils and executive branch should be provided where necessary to educate and help institutionalize appropriate policies, budgets and procedures to enable the desired service improvements.
- Supporting multi-stakeholder action planning for improvement of water services based on minimum service standards.
- Establishing public information system or customer service/complaint center for local government water and sanitation services.
- Identifying and brokering access to long-term finance options for water companies and sanitation service providers.
- Promoting creative micro-finance options for households that will allow them to make the necessary household investments in water supply (e.g., pay for connection fees to water utilities) and sanitation (e.g., pay for improved household level or shared small-community sanitation facilities).

The targeted outcomes for this component will include:

- At least 40 participating local governments that put greater priority on safe drinking water and sanitation through supportive local policies and budget allocation increases.
- At least 15 PDAMs or local governments obtain access to long-term funding for water or sanitation investment plans.
- At least 10 percent increase in financial resources accessed by service providers from public and private sources for the expansion of improved water and sanitation services.
- At least 40,000 low-income households accessing micro-finance for household improvements in water or sanitation.
- At least 20 local governments adopt new or improved mechanisms for citizens to engage local government in water and sanitation.

C.2.2 Site Selection

The Offeror is responsible for proposing particular urban sites where the expected results will be achieved. At a minimum, however, Offerors must propose working in Jakarta to engage the central government, and in one or more cities in at least four (4) Indonesian Provinces –North Sumatera, East Java, South Sulawesi, and a province in eastern Indonesia. Overall, Offerors must propose to work on expanding access to safe water supply among a minimum of 10% of the total Perusahaan Daerah Air Minum (PDAMs) in the country, and work to expand adequate sanitation in at least half of the areas served by these same PDAMs. For the purpose of this project, “urban” is defined as municipalities with a population greater than 50,000. To maximize the impact of this project, site selection will consider the following criteria:

- Existing local government commitment to water supply and sanitation service expansion, especially among the urban poor.
- GOI central government regional or city-specific priorities.
- The potential for cost effective establishment of training sites or PDAM-hosted in setting up role models or "centers of excellence" for use in promoting best practices in safe water and sanitation service expansion.
- The potential to have complementary activities with other USAID projects, such as the Democratic Governance Project.

C.3 Small Grants Funds

A Small Grant Fund is included as part of the Contract as one tool to achieve contract objectives. The purpose of the Small Grants Fund is to provide the Contractor with a flexible means, where necessary and/or useful, to encourage participation and/or collaboration of local entities toward the achievement of the four activity components.

The Grants Fund is not seen as an end in itself. The Contractor will not be judged according to how many grants are issued in a given period. The Contractor shall award grants where appropriate, in combination with technical assistance, training, and/or other Contractor inputs toward achievement of specific objectives that respond to expressed local needs and contribute to achievement of stated Contract Results. In keeping with the principles of the USAID's Global Development Alliance program, Contractors are encouraged to leverage funding from other non- USG resources, e.g. as a "matching grant" for an NGO or private sector activity.

Examples of Small Grants would include:

- Pilot activities in support of IUWASH objectives and expected intermediate results, with USAID funding provided on a declining basis.
- Activities, equipment, materials to increase access to water and sanitation services with leveraged resources from communities, the private sector, and government.
- Information/education/communications campaigns by an NGO, civil society or the private sector to promote water and sanitation services improvement.
- Activities, equipment, materials to develop citizen-based mechanisms for monitoring performance of water and or sanitation services.

C.4 Gender

The Contractor shall ensure that activities are responsive to gender considerations, and seek to ensure that the assistance provided and the results achieved are beneficial to women and girls. Regarding sanitation-specific improvements, women and girls generally have great concerns and needs for privacy, security and convenience. Women's participation in decision-making will be enhanced and encouraged in this project. In addition, the Contractor will look for opportunities to develop the capacity of women entrepreneurs to participate in the water, sanitation and hygiene supply chain. This component of the project has the potential to benefit women and children directly from increased income-generating opportunities. Appropriate indicators and key variables must be identified that will help determine

whether gender equity and inclusion of other marginalized groups is promoted, eroded, or unaffected by the project activities, or serve to identify constraints, increase our understanding of the negative impact of such disparities with the goal of devising appropriate strategies to eventually attain equality and adequate representation.

C.5 Project Management

C.5.1 USAID Management

Technical direction for the project will be provided by a Contracting Officer's Technical Representative (COTR) from the USAID/Indonesia Environment Team. The COTR will be responsible for monitoring the quality and effectiveness of the Contractor's performance by maintaining close contact with the Contractor's key personnel, the GOI and other key counterparts and by reviewing accomplishments against annual work plans. The COTR shall participate in periodic progress meetings with the Contractor's team. At frequent intervals, the Contractor will be requested to coordinate with and brief USAID on project activities and progress toward achieving performance targets and contract results. When required, the Contractor shall deliver professional judgments to USAID about the effectiveness of personnel and partners employed under the project.

C.5.2 Emphasis on Utilizing Local Resources

The Contractor is expected to utilize the services of qualified Indonesian firms and expertise as well as non-government organizations, professionals, and administrative and clerical staff to the greatest extent possible.

C.5.3 Technical Directions

Technical directions during the performance of this project shall be provided by the USAID/Indonesia COTR. International travel authorization and approval of terms of reference for short-term personnel must be obtained from the COTR before travel or work commences.

C.5.4 Donor Coordination

The World Bank, Water and Sanitation Program, Asian Development Bank, Japan International Cooperation Agency, the Australian Agency for International Development, the Royal Netherlands Ministry for Development Cooperation, and others are either already providing or are interested in providing assistance to the GOI for the improvement of safe drinking water and sanitation services. In order to avoid duplication of effort as well as to optimize the leveraged efforts, it is desirable to have good synergy with GOI and other donors funded projects/strategy in planning and implementing IUWASH. USAID/Indonesia will take the lead in the donor coordination efforts and may designate IUWASH for specific water and sanitation coordination.

The Contractor should report to the COTR on the content of meetings attended or held with other donor staffs. Copies of all correspondence to partners should be sent to the COTR. The Contractor should also summarize activities conducted in collaboration with other donors in the Quarterly and Annual Reports discussed above.

C.5.5 Monitoring and Evaluation

Within thirty (30) days after the contract award date, the Contractor shall finalize and submit the Contract Performance Monitoring System to the COTR. This system should include all indicators in Section C.2 as

well as any other indicators the Contractor believes to be necessary in order to adequately track progress and impact of activities. The monitoring and evaluation system shall effectively track the inputs and outputs of activities and achievement of Contract Performance Outcomes over the life of the Contract. The system should also be able to track gender disaggregated results data as appropriate. This system shall also facilitate the flow of information within the Contractor's organizational structure, enabling all parties to more effectively monitor and manage activities required. The system shall be designed to collect, store, and report administrative, financial and programmatic data on project inputs and outputs as well as actual progress toward achieving the Contract Performance Benchmarks. The Contractor's final monitoring system is subject to approval by the COTR. Any modifications required will be requested by the COTR within ten (10) days of submission of the final system. The Contractor shall commence implementation of the system within ten (10) days following receipt of the COTR's approval of the system.

C.6 Staffing

The Contractor shall recruit and establish a team of experts and supporting staff to develop and implement the project and to manage its central and local elements including short-term consulting and coordination with other partners in the project. For those positions not designated\ as expatriate, USAID encourages the use of Indonesian professionals to the greatest extent possible. Where qualified Indonesian professionals are not available, the Contractor will consider building the capacity of senior Indonesian professionals to take over increasing levels of responsibility during the course of the project. The Contractor will have requisite levels of professional expertise to address the three results areas outlined in the 'Expected Results' section.

C.7 Key Personnel

Offerors are required to propose a minimum of five "key personnel" to lead the implementation of IUWASH. Where possible, the Offeror is encouraged to utilize Indonesian staff for these positions. Building local capacity so that the majority of these positions are filled by Indonesian staff prior to the end of the five-year project period is also encouraged. When recruiting "key personnel" or making changes thereto, the Contractor will forward the names and resumes of qualified candidates to the USAID/Indonesia COTR for approval before hiring decisions are finalized. All "Key Personnel" require the Contracting Officer's written consent prior to any placement under this project.

C.7.1 Chief of Party (US)

The Chief of Party (COP) will be based in Jakarta to enhance the opportunities to link more closely with other USAID/Indonesia Mission-sponsored projects, other USG-sponsored cross-sectoral activities, and GOI agencies and ministries on the urgent actions and partnerships needed to achieve the expected results. The COP will serve as the Institutional Liaison and will be responsible for chief administrative oversight for the project.

The COP will have the following minimum set of qualifications:

- A minimum of fifteen years of professional experience in fields related to the successful implementation of this project such as water and sanitation technical expertise, local governance capacity building for improvement of water and sanitation services, and behavior change promotion.

- An advanced graduate degree in a similarly related field of study, e.g. environmental or civil engineering, public health, business administration, governance, etc.
- Proven leadership in the administration of similar size international donor support programs with skills in strategic planning, management, supervision and budgeting.
- Proven ability to develop and communicate a common vision among diverse partners and the ability to lead multi-disciplinary teams.
- Evidence of strong communication skills, both interpersonal and written, to fulfill the diverse technical and managerial requirements of the contract.
- Proficiency in Bahasa Indonesia preferred.
- Knowledge of Indonesian water supply and sanitation issues preferred.

C.7.2 Other Key Personnel

All other key personnel and minimum qualifications criteria are named below:

1) Behavior Change Advisor

- At least ten years of behavior change communication experience, especially related to current Indonesian hygiene and sanitation context.
- Proven experience in undertaking activities aimed at empowering poor urban communities and individuals including organizing civil society groups or community based organizations for improved access to safe drinking water, sanitation and hygiene.
- At least a Masters Degree in environmental health, public health, communications, or behavioral research.
- Strong communication skills, both interpersonal and written, to fulfill the technical and managerial responsibilities proposed.
- Working experience in developing countries; experience in Indonesia preferred.
- Strong English writing and speaking skills.
- Some proficiency in Bahasa Indonesia and knowledge of Indonesian culture preferred.

2) Water/Sanitation Technical Advisor

- At least ten years of urban water and sanitation sector expertise, especially related to current Indonesian utility and local government context.
- Proven experience in undertaking activities aimed at capacity building of water utilities to effectively manage services, carry out system operation and maintenance, improve technical, financial and management performance, and extend service coverage.
- At least a Masters Degree in environmental or civil engineering, or public utilities administration.
- Strong communication skills, both interpersonal and written, to fulfill the technical and managerial responsibilities proposed.
- Working experience in developing countries; experience in Indonesia preferred.

- Strong English writing and speaking skills.
- Some proficiency in Bahasa Indonesia and knowledge of Indonesian culture preferred

3) Water/Sanitation Financing/Governance Advisor

- At least ten years of general institution strengthening and partnership building expertise including a track record in effective institution strengthening, public policy development, public participation and partnership building with government at local and national levels.
- Proven experience in undertaking activities aimed at increased political support and access to financial resources for water and sanitation improvement.
- Demonstrated understanding of decentralized Indonesian governance system including
- Experience advising executive and legislative branches of local government in budgeting, planning, management of services and/or policy development.
- At least a Masters Degree in public financing, regional development, business administration, or similar fields.
- Strong communication skills, both interpersonal and written, to fulfill the technical and managerial responsibilities proposed.
- Working experience in developing countries; experience in Indonesia preferred
- Strong English writing and speaking skills.
- Proficiency in Bahasa Indonesia and knowledge of Indonesian culture required.

4) Grants Manager

- At least ten years of grants management with development agencies or their funded programs, including a track record in effective grants management to achieve project objectives.
- Strong understanding of USAID grants and contracts policies and regulations.
- Strong communication skills, both interpersonal and written, to fulfill the technical and managerial responsibilities proposed.
- Working experience in Indonesia with strong network among Indonesian NGOs and entities preferred.
- Strong English writing and speaking skills.
- Some proficiency in Bahasa Indonesia and knowledge of Indonesian culture preferred.
- Additionally, the following type of expertise and skills is required to be represented in some combination among the proposed key personnel (including the COP):
- Experience in small and medium enterprise development and/or social marketing approaches in support of such development.
- Municipal/utility finance and micro-finance expertise.
- Track record of effective liaison with Indonesian government officials and policy makers.

C.7.3 Other Staffing Considerations

Short-Term Expatriate and Local Consultants—It is expected that the Contractor will propose to hire sufficient short-term expertise in order to implement this project effectively, that will make use of local specialists to the greatest extent possible. The amount and nature of such staffing will be described within the Offeror's proposal.

Local Staff—It is expected that the Offeror will propose to hire sufficient local, professional and support staff based in Jakarta and regional offices in order to implement this project effectively. The amount and nature of such staffing will be described within the Offeror's proposal.

C.8 Environmental Compliance

The Foreign Assistance Act of 1961, as amended, Section 117 requires that the impact of USAID's activities on the environment be considered and that USAID include environmental sustainability as a central consideration in designing and carrying out its development programs. This mandate is codified in Federal Regulations (22 CFR 216) and in USAID's Automated Directives System (ADS) Parts 201.5.10g and 204 (http://www.usaid.gov/policy/ads/200/), which, in part, require that the potential environmental impacts of USAID-financed activities are identified prior to a final decision to proceed and that appropriate environmental safeguards are adopted for all activities. Offeror environmental compliance obligations under these regulations and procedures are specified in the following paragraphs of this RFP.

In addition, the Contractor must comply with host country environmental regulations unless otherwise directed in writing by USAID. In case of conflict between host country and USAID regulations, the latter shall govern.

No activity funded under this Contract will be implemented unless an environmental threshold determination, as defined by 22 CFR 216, has been reached for that activity, as documented in a Request for Categorical Exclusion (RCE), Initial Environmental Examination (IEE), or Environmental Assessment (EA) duly signed by the Bureau Environmental Officer (BEO). (Hereinafter, such documents are described as "approved Regulation 216 environmental documentation.")

An Initial Environmental Examination (IEE), reference as Asia 09-86 Indonesia IEE and Environmental Threshold Decision (ETD) has been approved for the Project funding of this RFP IUWASH. USAID has determined that a Categorical Exclusion applies for IUWASH project activities involving technical assistance and training, analyses, studies, academic workshops and meetings that do not entail laboratory work, field studies or involve actions that directly affect the natural or physical environment. A Negative Determination with Conditions is applied for IUWASH activities involving field studies and other actions that directly effect the physical or natural environment, including small-scale water and sanitation improvement and or construction activities of the IUWASH. The mitigation measures in the conditions list—in Attachment 1—are to ensure mitigation of the potential impacts to public health or the environment.

The Contractor shall be responsible for implementing all IEE conditions pertaining to activities to be funded under this contract. As part of its initial Work Plan, and all Annual Work Plans thereafter, the Contractor, in collaboration with the USAID Cognizant Technical Officer and Mission Environmental Officer or Bureau Environmental Officer, as appropriate, shall review all ongoing and planned activities under this Contract to determine if they are within the scope of the approved Regulation 216 environmental documentation.

If the Contractor plans any new activities outside the scope of the approved Regulation 216 environmental documentation, it shall prepare an amendment to the documentation for USAID review and approval. No such new activities shall be undertaken prior to receiving written USAID approval of environmental documentation amendments.

Any ongoing activities found to be outside the scope of the approved Regulation 216 environmental documentation shall be halted until an amendment to the documentation is submitted and written approval is received from USAID.

The Contractor shall prepare an environmental mitigation and monitoring plan (EMMP) or a project mitigation and monitoring (M&M) plan, describing how the Contractor will, in specific terms, implement all IEE conditions that apply to proposed project activities within the scope of the award. The EMMP or M&M Plan shall include monitoring the implementation of the conditions and their effectiveness. The EMMP or M&M Plan shall be integrated into the initial work plan and subsequent Annual Work Plans, with any necessary adjustments to activity implementation in order to minimize adverse impacts to the environment.

C.9 Reports/Plans

C.9.1 Mobilization and Quick Start Activities

The Contractor shall fully mobilize personnel and offices within 30 days of contract award. Offerors will identify quick start activities in their proposals that are high priority and can begin even while the work plan is being developed. Quick start activities may commence prior to work plan approval subject to prior Mission approval.

C.9.2 Work Plan

The Contractor, in coordination with the GOI relevant Ministries and other implementing agents, shall submit its first year work plan and annual work plans to USAID for review and approval by the COTR. The work plan shall include clear and concise language identifying the specific package of activities to be implemented for each of the targeted urban areas and:

- Provide a clear and concise rationale for inclusion of selected sites and/or modification of sites from those originally proposed or selected in prior work plans.
- Describe activities and corresponding levels of effort that address, as appropriate, the three results areas.
- Include a plan and timetable for developing strategies and action plans that are crosscutting in the three results areas and toward which the Contractor shall jointly implement with major stakeholders.
- Propose criteria for the selection of sub-contract/grants in support of achieving the expected results.

DUE DATE:

- The Contractor will submit the First Year Work Plan promptly following award, but no later than 30 days following contract award. COTR approval of first year work plan will be provided approximately 10 days following submission of the work plan
- The Contractor will submit each Contract year's Annual Work Plan no later than two weeks prior to the anniversary date of the contract.

C.9.3 Performance Monitoring Plan

The Offeror must explain within its proposal how it will measure impact in the targeted areas. Innovative approaches and creative technologies to monitor and track the project progress and achievements is encouraged. After review and comment by the COTR, the Contractor shall finalize the PMP. The PMP is a performance management tool for planning, managing and documenting how performance data are collected and used. It should include both USAID Standard Foreign Assistance indicators as well as customized indicators developed specifically for the IUWASH project. In a uniform format, the Contractor shall prepare a Performance Indicator Reference Sheet which describes indicators in detail and includes definitions, data sources, and frequency of data collection and reporting. The Contractor shall submit quarterly and annual performance reports to the COTR for review and approval.

DUE DATE: The Contractor will submit the project-level PMP no later than 30 days following Contract award.

C.9.4 Procurement Plan

The Contractor shall prepare and submit a procurement plan which shall contain the following:

- Specifications and the estimated costs of all non-expendable supplies and equipment to be purchased under this contract;
- An explanation of the intended use of each item;
- The source and origin of each item; and
- A description of how the Contractor will monitor and control the use of non-expendable resources.
- The Contractor shall abide by all source and origin requirements when procuring nonexpendable commodities, particularly vehicles, under this Contract.

DUE DATE: The Contractor will submit the Procurement Plan no later than 30 days following Contract award.

C.9.5 Grants Project Plan

USAID anticipates that the Contractor will provide approximately $2.5 million in grants over the life of project for implementation activities under this scope of work. The total value of any individual grants to any organization will not exceed US$100,000.

Offerors must address how these grant funds will be used to support a process of constructive engagement and planning between communities, indigenous NGOs, local institutions, PDAMs, private sector and other relevant government agencies to work collaboratively in implementing the activities under this scope of work. Within two months of award, the Contractor shall submit grants manual and grant project implementation plan for COTR review and CO approval.

Grants shall be directed towards the selected sites and shall address the specific results areas in some or all sites. The Contractor shall make every attempt to work with local partners that have proven know-how and experience in the results areas. The grants will be provided to nongovernmental organization (NGOs) and/or small and medium scale enterprises which may include indigenous, national or international organizations. To the extent possible, USAID encourages the use of indigenous and national organizations.

The COTR shall approve the selection and funding level of grant recipients. No grants may be awarded without the consent of the Contracting Officer. All grants must be compliant with ADS 302.3.4.8, Grants under Contracts.

DUE DATE: The Contractor will submit the Grants Manual and Grant Implementation Plan within 45 days from contract award.

C.9.6 Strategies and Action Plans

The Contractor shall prepare and submit to the COTR for review and comment the strategies and action plans developed for each site with stakeholder buy-in according to the schedule for these deliverables set forth in the work plan.

C.9.7 Quarterly Reports

The Contractor shall prepare and submit to the COTR regular quarterly reports on IUWASH activities, issues, constraints, progress toward goals, and achievements. The format for these reports will be jointly established between the Contractor and the COTR.

DUE DATE: The Contractor will submit Quarterly Reports no later than two weeks following the end of each U.S. fiscal year quarter.

C.9.8 Annual Reports

The Contractor shall prepare and submit to the COTR an Annual Report for each year of IUWASH implementation. The Annual Report is not intended to be a compilation of Quarterly Reports. Rather, the Annual Report will set out, in text and graphically, progress made in achievement of the expected results and those related to the three results areas. It will draw on the PMP and provide a clear presentation of progress over the course of the year and analysis of successes and challenges.

DUE DATE: The Contractor will submit Annual Reports no later than two weeks following the end of the U.S. fiscal year (October 15).

C.9.9 Project Information Services

The Offeror must explain within its proposal how it will create and regularly maintain a variety of outreach platforms, including email distribution of newsletters, project update stories for wide distribution on a regular basis with photos and quotes, both in Bahasa Indonesia and in English, and a project web site available to the public. In collaboration with other USAID/Indonesia implementing partners working in related Assistance Objectives, the Contractor may be expected to create and regularly maintain a joint project outreach platforms.

C.9.10 Final Report

The Contractor shall provide a draft final report to the USAID/Indonesia COTR for review within 30 days prior to the contract completion date. The report shall discuss all activities and achievements of the Contract Performance Objectives from the start of the project through its completion. Any comments on the draft report are to be made by the USAID/Indonesia COTR and provided to the Contractor within ten (10) days. The final report shall then be resubmitted in final to an agreed upon list of distribution.

3. REQUEST FOR TASK ORDER PROPOSALS (RFTOP)

LEBANON WATER AND WASTEWATER SECTOR SUPPORT (LWWSS)

SCOPE OF WORK

A. Objective

Building on recent support to the water and wastewater sector through infrastructure projects and through the Lebanon Water Policy Program (LWPP), USAID/Lebanon aims to continue partnering with the four Water Establishments (WEs) and the Ministry of Energy and Water (MoEW)to strengthen their capacity to deliver quality services at sustainable costs.

Under the Lebanon Water and Wastewater Sector Support (LWWSS) project, USAID funds shall be utilized to provide technical services and related resources (such as technical equipment) to the four WEs and MoEW in order to: build the capacity of their staff; increase their managerial, administrative, technical, financial and operational efficiencies; improve the quality of water and wastewater services; expand access to water and sanitation; and improve capital investment planning and asset management. Urgent and critical infrastructure needs will also be funded to significantly enhance water and wastewater service delivery or access and coverage.

The LWWSS project will build on, and be implemented in close coordination with other USAID and donor-supported projects in the sector that aim to improve and expand water and wastewater services.

The duration of the Task Order will be four years. The total estimated life of project funding is estimated to be between US $18 million and US $20 million. A percentage of this amount is to be devoted for emergency or critical water infrastructure works.

B. Background

B.1. Existing Conditions:

B.1.1. Condition of Infrastructure and Quality of Services

Since 1975 and the advent of the civil war, Lebanon has been through difficult times. Reconstruction since the early 1990s restored stability and economic activities in Lebanon, but due to continuing sectarian tensions and external conflicts, problems with basic infrastructure and government services persist. The quality of drinking water is generally good, even if the supply does not always match. The multiplicity of water sources and the difficult topography require pumping stations but the lack of spare parts and the unreliability of energy supply induces discontinuous and sometimes unreliable water supply.

According to the WHO, access to safe water and basic sanitation is 100% country-wide, except for rural sanitation where coverage is assessed at 87%. Reality differs significantly, with most Lebanese receiving water supply intermittently, notably in summer. According to UNICEF figures, only 56 % of Lebanese are connected to the main water supply, which sometimes only deliver one day a week. Nearly one in three Lebanese buys drinking water (usually from mobile water trucks) while average pipe leakages reach 50 % and more. Access to sanitation also fails to describe the lack of wastewater treatment facilities, and the health, economic and environmental impacts caused by raw sewage flowing into streams and the sea (an estimated 60 % of Lebanon’s water system lacks any form of sewage treatment).

B.1.2. Policy, Legal and Regulatory Reform

The Government of Lebanon (GoL) has demonstrated some commitment to reforming the water and wastewater sector. Laws 221 and 224 (both 2000) and 337 (2002) restructured the water sector so that the 21 various water authorities and smaller local water committees were consolidated and replaced by four Regional Water Establishments (WEs):

- Beirut and Mount Lebanon Water Establishment.
- North Lebanon Water Establishment.
- Bekaa Water Establishment (covers North and South Bekaa).
- South Lebanon Water Establishment.

The WEs are responsible for all water and sanitation management within their jurisdiction. This reform was intended to pave the way for some level of private sector participation by transforming the WEs into viable commercial institutions.

The MoEW's role and powers have been accordingly reduced to preparing a national water policy and master plan, carrying out studies and implementing large-scale projects.

The water governance structure of Lebanon remains however convoluted, with the Council for Development and Reconstruction (CDR) responsible for management of donor funding through loans/grants for the rehabilitation of all water, wastewater and solid waste infrastructure. On the other hand, both MoEW and the WEs remain understaffed and lack both financial resources and capacity.

The legal and regulatory framework for the water and wastewater sector also remains complex. A water sector law ("Code de l'Eau") was drafted in 2005 with technical assistance from the French Aid, but has yet to be endorsed by the Council of Ministers and then presented to the Parliament.

B.1.3. Capital Investments

Infrastructure investments in Lebanon are mostly handled by the Council of Development & Reconstruction (CDR). Given GoL's indebtedness, funding remains limited and mainly comes from donors.

Regarding water infrastructure, investment planning remains weak, with only the MoEW's ten-year water plan (2000-09) identified as a planning document. This plan however lists water infrastructure needs without prioritization and with limited justification. Most of the inventoried needs focus on resource mobilization (dams, potable water collection and treatment). Proper planning and prioritization is of course seriously hampered by the internal tensions between political factions, and the incapacity of the GoL to provide clear leadership.

After construction, the relevant Water Establishment becomes responsible for the operation and maintenance of the new infrastructure.

Several donors (European Commission, European Investment Bank, French Aid, Italian Aid, etc.) are funding water infrastructure, notably drinking water and wastewater treatment plants, and also the rehabilitation, upgrading or extension of water networks.

USAID has been funding the Small Village Wastewater Treatment Plants (SVWTP) project under which seven plants were identified and designed in the Litani River Basin. Two have been completed as of early 2009, two more will be started soon.

Apart from water and wastewater treatment plants and networks, the World Bank is the main donor funding large infrastructure such as dams. The Chabrouh dam (storage of 8 M m3) was recently completed to provide drinking water to the Kesrouan area north-east of Beirut. The World Bank is now discussing with the GoL a Greater Beirut Water Supply Project, a $300 M project that would include the construction of a conveyor, networks and storage reservoirs, and possibly of a main dam (Bsiri dam) on the Awali River. The main objective would be to provide Greater Beirut with reliable water supply given the current summer shortage.

B.1.4. Specific Challenges

The political situation in Lebanon renders the GoL unable to provide clear leadership in general and specifically in the water sector. As a consequence, policy reforms that are much needed, starting with a revised water law and a clear national water strategy, are unlikely to be defined and implemented in the near future. For the four Water Establishments, this implies that there is limited support to provide them with the institutional, policy and financial framework that would help them improve their performance. WEs are faced with four major challenges:

1. Staff: a hiring freeze policy has been implemented by the GoL in the last ten years or so; any staff hiring request has to be presented to the Civil Service Board whose approval pace and ratio are low; this is due to the heavy indebtedness of the GoL who is reluctant to increase its payload (and used to favor outsourcing to the private sector), along with the usual confessional nature of any hiring or appointment in Lebanon. This has resulted in a dramatic situation for the Water Establishments whereby staff has steadily aged and shrunk. The WEs somehow coped with the situation by hiring contractual/short-term staff or by resorting to service contracts with private firms. While private outsourcing should definitely be considered, core functions (strategic thinking, work and contract supervision, financial management) cannot thus be delegated. As of early 2009, only 12% of staff working directly for SLWE is permanent staff, and most are over 55 years old. This issue has been recently acknowledged by the GoL and there is hope that it will be tackled through some large hiring processes. Meanwhile, this issue represents a serious obstacle for donors to provide sustainable technical assistance and capacity building.

2. Tariffs: these remain comparatively low; the political sensitivity of the issue, the absence of proper regulating mechanisms, and the lack of autonomy of the WEs combine to prevent adequate tariff structures that would allow decent cost recovery and financial sustainability.

3. Planning: GOL has no clear planning strategy for water supply and demand management. Capital projects are developed on ad hoc basis according to regional/confessional considerations and in response to the influx of donor funding channeled through CDR.

4. Sustainability: capital investments are not supported by proper managerial structures that ensure long term sustainability and continuity of the infrastructure, thus creating a larger burden rather than a relief.

B.2. Donor Support to the Water and Wastewater Sector

B.2.1. USAID Assistance

USAID has in recent years developed a successful partnership with the Government of Lebanon (GoL) in the water and wastewater sector. While some of this assistance has focused on the construction of water treatment plants, USAID/L pioneered interventions at the water management level since 2002 under the Lebanon Water Policy Program (LWPP). Under LWWP, USAID helped the GOL focus on water demand management and reform of laws governing domestic use and distribution of water. The aim was to restore efficient use of water and decrease water losses. Through the LWPP, USAID targeted its assistance towards strengthening the capabilities of water establishments by training their employees, and introducing new management and analytical tools. As a result, the two targeted water establishments—Beirut & Mount Lebanon and South Lebanon - have for the first time a clear vision and are empowered to improve their planning based on sound and accurate financial data. By developing these tools, USAID introduced new cultures and concepts in water utility management in Lebanon such as full automation of accounting procedures, human resources management, customer service management and private-public partnership that would help Water Establishments raise revenues and attract private investors, and ultimately provide better services to the people of Lebanon.

At national level, LWPP has:

- Developed a framework for a national water tariff strategy, as basis for regional tariff strategies.
- Promoted public-private partnerships in the water sector through seminars, workshops and study tours.
- At regional level, LWPP worked with the South Lebanon and Beirut/Mount Lebanon Water Establishments (SLWE and BMLWE) on financial, institutional and operational sustainabilities:
    - Financial Sustainability: by developing a Financial and Accounting system (FAS) for SLWE, a financial cost recovery model and a tariff strategy for both establishments.
    - Institutional Sustainability: by assisting the preparation of five-year business plans for both establishments, by proposing reforms to the organizational structure, by implementing capacity building activities for staff and public outreach for customers to promote a water accountability culture.
    - Operational Sustainability for SLWE: by preparing a water optimization plan for the efficient use of water resources (and substantial savings in electrical and operational costs), providing production and zone meters, developing a customer metering strategy, developing wastewater master planning, assessment of water infrastructure a comprehensive GIS database for asset management, and plans for tariff restructuring.
- Detailed information on LWPP achievements is available under section H. Applicable Documents.

Based on LWPP's demonstrated successes, especially at SLWE, USAID was approached by other water establishments to build on LWPP's work. Other donors (namely the EU, GTZ, and French Aid) are now also providing technical assistance to the four water establishments.

B.2.2. GTZ Technical Assistance

GTZ launched in February 2008 a 3-year, € 5 million project entitled " Rehabilitation of water and wastewater systems in Lebanon—Technical assistance for water sector reform". The objective is to

- Strengthen the capacity of the MoEW to support and regulate the water establishments.
- Strengthen technical and management capacities of the water establishments.
- Improve customer relationships.

While the definition of GTZ activities will be flexible and demand-driven, the main focus will be on providing the four water establishments, and the MoEW as their supervising entity, with tools to monitor their performance in financial, operational and technical terms.

B.2.3. EU Technical Assistance

The European Commission is funding a 3-year, € 5 million project entitled MOTGE (Mise en place d'Outils Techniques de Gestion de l'Eau). Technical assistance was started in December 2008 with the objective to consolidate and disseminate the management tools (computer systems for asset, staff, financial management, for operation and maintenance) that were provided to the WEs by the previous IPP-Water project (IPP stands for Investment Planning Project, a multi-year multi sector EC project for Lebanon).

The overall objective is to improve the quality and reliability of water and wastewater services, and to contribute to the financial autonomy of the WEs.

- Specifically this entails supporting:
- The routine collection, analysis and storage of water data.
- The development and implementation of an integrated customer management system (including customer database, invoicing and billing, fee collection, etc.).
- The establishment of modern accounting systems and practices.
- The development and use of modern O&M systems and practices for the potable water production and distribution.
- The establishment of a GIS-based system for asset management.
- The definition of the specific mandate, role and responsibilities of each department or unit within the WEs.
- The drafting of job definitions, and the development of staffing and training plans to match staff qualifications and size to functions.

B.2.4. AFD (French Aid) Technical Assistance

AFD is preparing a technical assistance activity that will focus on the North Lebanon Water Establishment, as a follow-up to the previous French involvement through the service contract carried out by Ondeo.

This activity is currently under design.

C. Statement of Work

C.1. Overview of Components and Technical Approach

C.1.1. Overview of Components

Under the Lebanon Water and Wastewater Sector Support (LWWSS) project, the Contractor shall work with national and regional institutions to improve planning and operational capabilities and to implement reforms to the water and wastewater sector in Lebanon. The Contractor shall provide technical services and related resources to the Water Establishments and their supervising Agency the MoEW in order to improve the operational performance of the sector and increase its ability to attract private investments thus improving and expanding water and wastewater service delivery to the Lebanese people.

To achieve the LWWSS project objectives, the Contractor shall undertake tasks grouped under the following seven components:

1) Conduct Initial Assessment to provide elaborate details on activities to be conducted, and initiate environmental assessment when necessary.

2) Build the capacity of staff, increase managerial, technical and operational efficiency, improve the quality of services;

3) Increase the financial and commercial viability of the Water Establishments;

4) Procure technical equipment for WE Staff so as to complement the technical assistance and capacity building activities; such equipment could be water monitoring tools, computer hardware and software, vehicles and other, for WE staff to efficiently operate and maintain water infrastructure and networks;

5) Develop and implement capital investment planning and project monitoring mechanisms.

6) Fund urgent or critical infrastructure works which significantly enhance water and wastewater service delivery or access and coverage.

7) Develop a corporate culture, improve the customer service orientation and develop public outreach projects to increase awareness regarding the vulnerability and protection of water resources.

The Contractor shall build on the significant achievements of previous LWPP program and GoL reform initiatives that have helped strengthen the enabling framework and build institutional capacity amongst key players in the sector. The Contractor shall carry out all tasks in close coordination with other USAID and donor-supported programs that aim to improve and expand water and sanitation services.

C.1.2. Technical Approach

To achieve its objectives, the LWWSS project shall be (a) customer-driven; (b) strategic, flexible and responsive to targets of opportunity; and (c) results-oriented. For all the components of the SOW, the Contractor shall build upon the significant achievements and gains made under previous USAID projects notably LWPP and GoL reform initiatives that have helped to strengthen the enabling framework, and build institutional capacity amongst key players in the sector. The Contractor shall implement the LWWSS project in close coordination with other USAID and donor-supported projects in the sector that aim at improving and expanding water and sanitation services in Lebanon.

(a) Customer-Driven: The Contractor shall provide assistance that responds to the needs of the primary clients of the LWWSS project, namely the four Water Establishments and their supervising Agency the Operation Directorate ("Direction de l'Exploitation") of the MoEW. The Contractor shall also collaborate with public, private and non-government institutions and organizations as needed to achieve the objectives stated in this SOW.

In order to monitor progress in the performance over time of the Water Establishments, it will be critically important that MoEW and WEs set progressive targets for key performance indicators such as: cost recovery; collection efficiency; service standards; chemicals and electricity consumption per cubic meter of water produced and wastewater treated; non-revenue water; etc., that are somehow linked to performance agreements and compensation plans.

GTZ is currently providing technical assistance to MoEW and to the WEs to that end. The Contractor will have to closely coordinate with GTZ to complement GTZ activities as needed and also to use these performance tools and indicators to monitor progress of the WEs and thus the impact of LWWSS technical assistance activities.

(b) Strategic, Flexible and Responsive: The Contractor shall assist clients to evaluate progress toward goals and to identify adjustments in activities that appear to be needed in light of progress achieved, lessons learned, or changes in the environment. The LWWSS shall: (a) closely monitor the political and institutional environment; (b) assess the prospects for key reforms in the sector; and (c) shift resources in a timely fashion out of areas where progress is unlikely into areas where opportunities emerge. The Contractor shall coordinate closely with other donor projects and strive to minimize duplication of efforts.

The Contractor shall recommend adjustments to its Annual Work Plan to de-emphasize less promising activities and/or to capitalize on targets of opportunity. These recommendations should be based on the contractor's analysis of the sector and the progress made by the client organizations, requests from these organizations, and/or a detailed understanding of the status of other donor and GoL projects. Recommended changes must be discussed with GoL counterparts and approved by the CTO.

(c) Results Oriented: Results-oriented management is an essential element of the Contractor's performance. The Contractor shall have available a range of assistance mechanisms (e.g. provision of expatriate or local technical expertise, institutional capacity building, partnerships with public or private organizations, training activities, study tours, etc.) and, subject to USAID's technical direction, shall select the combination of approaches most appropriate to achieving the desired results. USAID expects that the Contractor's assistance provided under the LWWSS will have discernable and positive impacts on the sector and counterpart institutions by the end of the project. This impact may be measured in terms of systems developed and in use; institutional capacity built; financial viability achieved; project planning improved; quality of service improved; coverage extended; and technical capacity strengthened.

The Contractor is expected to demonstrate how it proposes to address the expected activities outlined in the SOW and the approach that will best achieve these results.

To reach the intended results under the project core components described in detail under sections C.2.2, C.2.3, C.2.4, C.2.5, C.2.6, and C.2.7 the contractor shall start under component C.2.1 with conducting an initial technical assessment that would build on their submitted offer and provide more elaborate details of the specific activities and tasks that the contractor will perform.

During the initial assessment period, the contractor shall perform an Environmental Assessment (EA) if necessary and as directed by USAID on selected or all activities as per 22 CFR 216.

C.2. Project Components

In order to achieve the results identified in the SOW, the Contractor shall provide a wide variety of services to support each of the project components. For each project component, the SOW provides additional background information as appropriate, a description of the objective of that component, and a

set of activities that are envisioned as the minimum required to achieve the sought results. The Contractor is required to identify and carry out any additional activities that are needed to achieve the sought results.

While the Contractor might not have full control over recipient adoption and use of some of the systems developed under the LWWSS, the Contractor is required in such cases to clearly demonstrate that it has completed all related deliverables to the satisfaction of USAID and the GoL partners, and has exerted reasonable effort to ensure that results are achieved.

Because of the existing extensive technical support to MoEW and Water Establishments by other donors, it is particularly important that the Contractor coordinate efforts to avoid duplication.

The Contractor shall procure and provide for the installation of equipment to be used in the institutional support; project management; and establishment of systems and projects including, but not limited to, training equipment, computers and peripherals, and computer software for the selected subsidiaries.

C.2.1 Initial Assessment

Through an initial technical assessment, the contractor shall provide elaborate details of the specific activities, tasks and deliverables that the contractor will perform in order to achieve the intended results under project components of the SOW described in detail in sections C.2.2, C.2.3, C.2.4 C.2.5, C.2.6.

The contractor shall perform over the first four months of the project a thorough assessment of the existing systems, strengths, weaknesses, challenges, and opportunities in the water sector.

The contractor shall identify during this assessment priority actions and preliminary benchmarks for the support. The contractor shall also identify the required resources for achieving the intended results.

During the 4 month initial assessment period, the contractor may be requested by USAID to perform an Environmental Assessment (EA) on selected or all activities that are determined by USAID to have a negative environmental impact.

Deliverables:

Initial Assessment Report: At the end of the four month initial assessment, the contractor shall submit a report titled “Initial Assessment Report (IAR)”. The IAR shall include a description of the process and findings of the assessment, a detailed and specific list of proposed activities, tasks, and deliverables for achieving the results of the LWWSS, and a time frame for implementation over the life of the project. The contractor shall obtain USAID/Lebanon consent on the proposed activities prior to proceeding with their implementation. The IAR findings shall be reflected in the yearly work plan described in section E.3 below. Annual Work Plan updates will elaborate on the detailed activities for each subsequent year of the project.

Environmental Assessment Report: The EA shall be prepared as per 22 CFR 216 and shall present the environmental impacts for each activity with the necessary mitigation measures to be presented under the Environmental Monitoring Plan. The EA findings and recommendations should be submitted for USAID’s approval prior to proceeding with any of the concerned activities. The EA shall not be conducted unless USAID determines the need for it.

High Priority Intervention Plan (HPIP): During the initial assessment exercise, the contractor shall develop the HPIP that identifies the immediate and high priority equipment and infrastructure needs at selected WEs and MoEW. Activities identified under HPIP are subject to USAID approval and will be considered as specific deliverables under components C.2.5 and C.2.6.

C.2.2 Capacity Building for Managerial, Technical and Operational Efficiency

This component addresses the core issues and challenges being faced by the Water Establishments in efficiently managing the water and wastewater systems. Management efficiency will be improved by a combination of managerial, technical, operational measures and improvements.

Additional Background: If the Water Establishments are allowed to proceed with the hiring they desperately need, there will be substantial need for staff development to be able to efficiently perform the assigned responsibilities. While there are training projects funded by other donors, the need for a long range plan to increase the skills and capabilities of the work force in the sector exists. Beyond the introduction of the basic needs of any organization, the Contractor should introduce relatively low cost, off-the-shelf training modules that will provide the organization with the basic skills and regularize a career path for the employees. Familiarizing staff with other management and operation systems and cultures would help in improving the skills and performance of the staff.

Illustrative Activities to be considered by the Contractor:

Provide the needed managerial and operational tools that improve WEs delivery of services and provide the necessary training in technical and operational management. These shall include but not be limited to geographical information systems (GIS), management information systems (MIS), SCADA systems, leak detection, mapping, and asset management. Wherever possible, link technical training to measurable outputs to help determine whether skill levels have been achieved and technical training is applied.

- Support the preparation of job descriptions, the definition of mandates, and clear roles and responsibilities for each division, department or unit within the WEs.
- Promote the development of Performance Based Incentive Systems based on market conditions, individual performance and continuous education efforts.
- Clarify the respective roles and responsibilities of the MoEW and the WEs and the business relationships between them.
- Develop or update a strategy for the WEs' human resources development and training plans that responds to the immediate and long term needs of each department.
- Develop and implement study tours projects and participation in international exhibitions and training courses and events for different departments.
- Promote private sector participation in the water sector through exposure to best practices in PPP; develop options and recommendations regarding the outsourcing of non-strategic service activities to the private sector.
- Build staff capacity to prepare and supervise outsourcing service contracts with the objective to realize cost savings and improve service delivery to customers.
- Build capacity for efficient O&M of water and wastewater infrastructure and networks; develop operation and maintenance planning procedures and systems.
- Develop and support the implementation of optimization plans in order to achieve cost savings; measures such as chemical and electricity rationalization and redundant administrative costs should be investigated.

- Build WE's capacity to manage wastewater, that is to collect and treat domestic and industrial sewage effluents and to cover the associated costs; this may entail supporting the establishment of a specific wastewater and pollution control department within each WE.

Specifically in coordination with the GTZ technical assistance activities:

- Recommend a management arrangement to clarify and document the process of setting performance targets for the WEs and monitoring responsibilities of the MoEW.
- Assist, as need be, the introduction, under the GTZ technical assistance of performance targets as part of the budgeting and planning process.
- Promote mechanisms for tying performance targets to incentives for staff and management and contractors (through the budgeting process, a performance agreement, outsourcing incentivized contracts, or any similar arrangement.

Tentative deliverables include:

- Institutional Development Workplan (IDW) for each of the selected WEs and MoEW which includes: training plan, managerial and operational tools, needs plan, human resources development plan, optimization plan.
- Training activities for staff and for senior and mid-level managers.
- O&M, outsourcing and procurement training.
- Human resources development plans and market based compensation plans.
- Study tours projects on selected topics determined in IDW and participation in international exhibitions and training courses and events.
- Operation and maintenance planning procedures and systems, long term preventative maintenance standards and guidelines.
- Performance Based Incentive Systems based on individual performance and continuous education efforts.
- A clear well defined and documented description of the different roles of the MoEW and the WEs and the business relationship between them.
- Recommendations for Service Standards that could be used as the basis for reviewing performance of companies.
- A study of outsourcing options and recommendations.
- Optimization plans.
- Initiate wastewater and pollution control department in selected WEs.
- Develop and implement a management agreement with GTZ (and other involved donors during implementation) for assistance in setting performance targets.

C.2.3 Increase Financial and Commercial Viability of Water Establishments

This component addresses the issue of the sustainability and financial autonomy of the Water Establishments. Financial efficiency will be improved by a combination of technical, financial, legal and

public outreach measures and improvements. Interventions under this component aim to promote and strengthen the financial autonomy and corporatization of the WEs.

Illustrative Activities to be considered by the Contractor:

- Provide training in financial management, including financial planning; accounting; cost recovery; etc. and on commercial practices, including tariff analyses and setting; billing procedures; etc. Wherever possible, link training to measurable outputs to help determine whether skill levels have been achieved and technical training is applied.
- Develop or assist, as need be, in the introduction of improved financial and cost recovery systems including: financial management; budgeting, financial planning and accounting procedures.
- Build on and train on the FAS and Cost Recovery Model implemented at SLWE for ensuring long term sustainability.
- Develop or update tariff studies, and comprehensive tariff plans which include progressive tariff revision that takes into consideration inflation, depreciation, and cost of services; long-term financial autonomy of the WEs and service improvement should be key factors for tariff recommendations.
- Promote strategic thinking and planning at the WEs through the development, updating and implementation of Business plans which should involve prospective analyses of market/customers, revenues, finances, staffing needs and costs, asset management costs, legal issues, etc.
- Prepare recommendations for, promote and strengthen the autonomy/corporatization of the Wes.

Specifically in coordination with the EU technical assistance activities:

- Develop or assist in the development of improved systems including: computerized metering, billing and collection; assets valuation and management; staffing; and management information systems.

Tentative deliverables include:

- Training activities for staff and for senior and mid-level managers on financial management.
- Introduction at selected WEs improved financial and cost recovery systems.
- Training on FAS and Cost Recovery Model implemented under LWPP.
- Long term Financial Training Plans for WEs.
- Tariff studies and tariff strategy for cost recovery and long-term viability.
- Corporatization procedures and recommendations.
- Develop modern management and financial systems.
- Develop business Plans.

C.2.4 Capital Investment Planning and Program/Project Management

In Lebanon, capital investment planning is carried out on a relatively ad hoc basis. Investments are made primarily on a project basis mostly through donor projects, occasionally through grants and loans from the central government (through the CDR). In the absence of a comprehensive approach to capital investment planning, budgeting and implementation; the water and wastewater sector in Lebanon has generally not properly accounted for the true cost of infrastructure investments and has not dedicated sufficient resources to maintain, upgrade and expand services over time.

On the implementation side, the lack of a strategic capital investment planning and budgeting process combined with weak project management practices has resulted in large numbers of projects with serious implementation problems such as poor construction, or cost overruns and operation challenges.

The objective here is, for each WE, to: (1) develop integrated medium-term master planning and capital budgeting for water and wastewater investments, and (2) strengthen the GoL's institutional and technical capacity to effectively manage the public investment through the project cycle. Each Master Plan should include (1) an assessment of existing assets, (2) demographic information and hydrological assessment plus projections for the next 30-years to identify needs, and (3) 5-year lists of prioritized projects. A consolidation of these Master Plans could also be used as the basis for a National Strategic Water and Wastewater Master Plan in order to provide the MoEW with data required to plan and prioritize short, medium and long-term investments, and establish a sector-wide financing plan. The Master Plans will address both urban and rural needs and include plans for large-scale and small-scale infrastructure investment requirements.

The Contractor shall build upon gains made in previous USAID activities and will complement other donor projects aimed at improving planning, budgeting and managing water and wastewater capital investments.

Additional Background: the bulk of capital investment planning and project implementation/supervision is currently carried out by the Council for Development and Reconstruction (CDR), in coordination with the MoEW and the WEs. This arrangement makes sense as CDR can channel and coordinate the allocation of donor funds. But conversely it creates a discontinuity between the two phases: construction and operation and maintenance; but this kind of arrangement prevents O&M managers from getting acquainted with the infrastructure while it is being built, from getting trained on the job by supervising the contractor; finally the transfer of responsibility often leads to cross finger-pointing when deficiencies occur.

Obtaining a policy decision to transfer infrastructure planning, funding and supervision from the CDR to the WEs is not part of this SOW. The Contractor should however build capacity of MoEW and WE staff for short, medium and long-term infrastructure planning and project implementation.

Illustrative Activities to be considered by the Contractor:

- Develop an integrated approach to short- medium- and long-term planning and capital budgeting; i.e. provide assistance to refine the process for capital investment planning and budgeting to make the process more strategic.
- Provide support to each WE on the process of developing, updating, and implementing a Strategic Master Plan for Water and Wastewater.
- Provide support to the MoEW on the process of consolidating these into a National Strategic Master Plan for Water and Wastewater.
- Assist MoEW and WEs to prioritize projects according to needs, resources, durations, and impacts.
- Train MoEW and WEs' staff on the modern approaches to capital investment planning and budgeting.
- Introduce the concept of funding planning including cash flow requirements.
- Strengthen procurement planning procedures (including advertising, preparing documents, forming required evaluation panels and selection committees); develop key documents (standard

specifications, TORs for developing engineering designs and procuring construction management services at the project level, prequalification documents, contractors' register, Invitations for Bid, contract documents, operation manuals, reporting, etc); develop prequalification methodologies for construction management firms and construction contractors; and provide recommendations for establishing dispute resolution boards.

- Support identification and assessment of local capabilities of design and engineering firms, construction management firms, suppliers, general contractors, specialized contractors, laboratories, GoL human resources requirements for projects and management, outsourcing possibilities.
- Strengthen project management and project/construction management techniques; prepare and disseminate manuals guidelines and procedures.
- Develop or, as needed, assist with capacity building on a management tool for WE staff to supervise and monitor progress on infrastructure projects at the technical and financial levels.
- Establish meaningful and measurable indicators to measure actual progress of construction.
- Build capacity at mid level to inform these tools and at senior level to use them for decision-making.
- A key task will be to assist WEs in developing a list of priority infrastructure rehabilitation/upgrade/ extension works to improve the quality or expand the coverage of water and wastewater services. Some of these priority works will be selected and funded by LWWSS (see next component C.2.5).

Tentative deliverables include:

- A study and report with recommendations on comprehensive and strategic approaches to capital investment planning; project management; and project/construction management; strategic capital investments decision-making; more effective allocations of limited budgetary resources for water and wastewater infrastructure.
- Long and medium terms Capital Investment Plans which address strategic development priorities, required financial resources, and cash flow requirements.
- Training of MoEW and WE staff to build institutional and technical capacity to effectively monitor and manage water and wastewater capital investment planning, and project cycle (comprising of identification, appraisal, preparation, prioritization, implementation, management, monitoring, evaluation, startup. etc.).
- Report and recommendations for carrying out the master planning process and ensuring regular updates both at regional (WE) and national (MoEW) levels.
- Training of MoEW and WEs' staff on master planning and capital investment planning and budgeting.
- Report and recommendations for MoEW and WEs on the prioritization of projects according to needs, resources, durations, and impacts.
- Strengthened procurement planning procedures (including advertising, preparing documents, forming required evaluation panels and selection committees); develop key documents (standard specifications, TORs for developing engineering designs and procuring construction management services at the project level, prequalification documents, contractors' register, invitations for Bid, contract documents, operation manuals, reporting, etc); develop prequalification methodologies for

construction management firms and construction contractors; and provide recommendations for establishing dispute resolution boards.

- Report and recommendations on identification and assessment of local capabilities of design and engineering firms, construction management firms, suppliers, general contractors, specialized contractors, laboratories, GoL human resources requirements for projects and management, outsourcing possibilities.
- Manual on establishing meaningful and measurable indicators to measure actual progress of construction projects.
- Project management tools that allow data collection and analysis for proper project supervision and monitoring, at technical and financial levels.
- Strengthened capacity at mid level to inform these tools and at senior level to use them for decision-making and specific actions to respond to problems.

C.2.5 Procurement of Technical Equipment to Strengthen WEs

Capacity building alone cannot improve the managerial, technical and financial performance of the Water Establishments. Essential equipment is necessary for WE staff to perform their responsibilities in terms of water and wastewater services. The Contractor will assess the relevant needs in terms of water monitoring tools, computer hardware and software, vehicles and other similar types of equipment. These needs will be assessed early on during project implementation and presented as a procurement plan to the USAID/L COTR for approval.

The items to be procured here are for the direct and immediate benefit of the Water Establishments and the MoEW, and differ from the equipment needed by the Contractor to implement the technical assistance activities.

Tentative deliverables include:

Procurement of selected equipment identified under HPIP plan prepared by contractor during the four month initial assessment as described under section C.2.1.

C.2.6 Small to Medium Scale Rehabilitation/Upgrade/Extension Water and Wastewater Works within WEs Areas.

In order to build an integrated USAID water project, the contractor shall engage in limited and small scale infrastructure activities that build into and relate to the technical, managerial and financial assistance efforts provided to the WEs. By engaging simultaneously in capacity building/planning activities and small scale interventions on the ground; quick impact, visible and concrete results would be achieved contributing to more efficient water management.

It is of a significance importance for USAID that the final products implemented under this component meet a high quality standard, and are subject to acceptable implementation and safety specifications during the implementation phase. The contractor is required to produce its internal Construction Quality Control Plan for this component and demonstrate its ability to follow and implement such a plan for the sake of delivering a final quality product.

Illustrative Activities to be considered by the Contractor:

- Installation of Zone/Production meters in locations previously determined under LWPP for SLWE after consultation with SLWE. Develop and implement a training project on data extraction, reading and analysis;
- Installation of customer meters in pilot areas specifically but not limited to South Lebanon Water Establishment as determined in customer metering Strategy developed under LWPP. Develop and implement a training program on data extraction, reading and analysis;
- Implementation of optimization measures and works developed under the WEs' optimization plans, specifically but not limited to the South Lebanon Water Establishment; and
- Implementation of selected works recommended under the WEs' Water and Wastewater Master Plans, or other works recommended by the WEs.

Tentative deliverables include:

- Construction of selected projects and installation of related equipment as per HPIP plan prepared by contractor during the four month initial assessment as described under section C.2.1.
- In the definition and construction of select rehabilitation/ upgrade/extension water and wastewater works, the Contractor will focus on activities that significantly impact the quality or coverage of water and wastewater services delivered by the WEs.
- It is envisioned that after defining the work activities to be carried out, the Contractor will prepare tender documents and perform a tender/award process in order to award work contracts. The Contractor will act as an Architect/Engineer and supervise the work activities at the design, award, and implementation phases. All these steps will be carried out in direct collaboration with WE staff with the constant goal of building their capacity to implement similar activities on their own in the future.

C.2.7 Corporate Culture, Customer Service Orientation and Public Outreach

Additional Background: If the Water Establishments are allowed to proceed with the hiring they desperately need, there will be substantial need for staff development to be able to efficiently perform the assigned responsibilities (as defined under Component 1) but also a great opportunity to reinforce appropriate corporate standards and attitudes.

The objective here is to reinforce a good corporate culture for a water utility. Such a corporate culture is shaped by senior management and involves moral, social, and behavioral norms that inspire staff and managers to excel. Corporate culture is established through clear Mission statements and performance objectives for service quality and coverage. It shapes the beliefs, core values, attitudes, and ability of the staff to set priorities to achieve their mission.

Illustrative Activities to be considered by the Contractor:

- Raise awareness among WE staff to develop a proper corporate culture based on elements such as: well-defined Mission statements for the WEs and for individual departments; transparent competitive hiring processes based solely on experience and qualifications; promotions and salary increases based on performance; explanation and dissemination of key management decisions; accountability at all levels; etc.

- Promote customer service orientation including establishing Customer Reception Offices, having transparent and accountable procedures for handling customer requests and complaints.
- Develop and implement communication plans to increase public awareness of water issues (quality and quantity), responsibilities of the Water Establishments, benefits and costs of water services, progress in the performance of the WEs.
- Provide public awareness on the benefits of consumer meters as a tool to monitor water consumption and link consumption to costs.
- Develop a service disconnection policy for non-payers as well as an incentive plan for regular payers and required steps to empower the WEs to implement such policies.

Tentative deliverables include:

- Defined Mission statements for the WEs and for individual departments; transparent competitive hiring processes based; promotions and salary increases based on performance; explanation and dissemination of key management decisions; accountability at all levels; etc.
- Public Awareness Plans and activities.
- Training on corporate culture and customer service.
- Establishment of customer reception office and guides in selected WEs.
- Develop service disconnection policy.

D. Key Working Relationships

D.1. USAID

Principal responsibility for project management of the Lebanon Water and Wastewater Support Project (LWWSS) project will reside with USAID/Lebanon and USAID/Egypt Office of Assistance and Acquisition.

D.2. Other USAID Projects

The LWWSS Contractor shall interface closely with other USAID projects, in particular those activities supporting the water and wastewater sector to ensure that USAID objectives are met while avoiding any duplication of services rendered or equipment delivered, or any redundancy of systems developed.

D.3. MoEW

The Contractor shall keep the Ministry of Energy and Water (MoEW) informed of the plans and progress in carrying out the SOW. The contractor shall establish a reasonable level of coordination with senior MoEW officials (notably the “Direction de l’Exploitation” i.e. Operations Directorate)to ensure that all activities and results are in line with the MoEW policies and plans for the sector and to avoid any duplication of services rendered or equipment delivered, or any redundancy of systems developed.

D.4. Water Establishments

As the Water Establishments are the primary counterpart and recipient of the services, the Contractor shall interface on a daily basis with their managers and representatives (as specified in each task above) to ensure that all tasks are efficiently carried out in a timely manner, and that all partners are committed to

the success of the project. The primary point of contact in each WE is the Chairman of the Establishment or his designee.

D.5. Donor Coordination

USAID/Lebanon has a good relationship with other multilateral and other bilateral donors. Donor coordination will be an important part of the LWWSS project. The Contractor shall, under USAID guidance, ensure that proper coordination with other donor projects in the area of water and wastewater sector policy reform exists. The Contractor will endeavor to keep other donors informed about its activities, to disseminate reports and findings to other donors, and to collaborate with other donors on the full range of tasks as defined in the SOW. The LWWSS Contractor will stay informed about other donor's activities so as to avoid duplication and to exploit opportunities to coordinate or collaborate in specific activities. In some cases, the Contractor may be requested to follow the lead of, and provide additional support to, other donor initiated projects. The Contractor shall report on pertinent other donor contacts and relationships as part of its quarterly report. As opportunities arise and circumstances allow, the Contractor is encouraged to collaborate with other donors in sponsoring symposia, workshops or other public events.

E. Reporting Requirements

E.1. Delivery Schedule for Reports

All reports under this contract shall be submitted in English to USAID at the times indicated in the RFP. The Contractor shall, however, promptly notify the COTR of any problems, delays or adverse conditions which materially impair the Contractor's ability to meet the requirements of the contract. The reporting requirements include the following:

The Contractor shall submit all reports in the appropriate MS Office format. All printing/copying shall be double-sided. The Contractor is encouraged to use recycled paper whenever possible.

E.2. Work Plans

In consultation with USAID, the Contractor will develop the following:

Start-up Plan:

A basic blueprint for the first six months of the contract. The start-up plan shall reflect contractor's course of action during the first six months of implementation. This shall include, the initial assessment, schedule, mobilization, and other logistics. The initial Work Plan is due within 30 days from the Effective Date of the Contract.

Annual Work Plans and Updates:

The Annual Work Plan will form the basis for activities to be initiated in each year of the contract. The COTR and selected Lebanese counterparts will collaborate with the Contractor in determining appropriate activities for each year. The COTR will review and approve the Annual Work Plans. Modifications that respond to changed conditions may be made; however, major modifications to each annual work plan are subject to the approval of the COTR and Contracting Officer (CO). The Annual Work Plans will provide a detailed description, schedule, and expected results for activities in support of each component under the SOW.

Following review and comment by USAID, the Contractor shall prepare a Final Work Plan for each year. Subsequent Draft Annual Work Plans shall be due no later than the 11th month of the prior year for submission to USAID for review and approval. The Annual work plan for Year One will be submitted after fourth months of the start of the project and upon USAID consent on the activities proposed in the IAR.

Annual Training Plan

The annual training plan will contain a flow chart of training activities, cover in-country and overseas training, and all other proposed project-funded training. The training plan will estimate annual numbers of trainees by type and category of training, training projects and potential training institutions, proposed timing for training, an implementation schedule and estimated costs. The annual training plan shall be submitted after six months of the start of the project.

Annual Procurement Plan

The life of project (LOP) procurement plan will develop an inventory and budget for equipment and commodities to be procured for the WEs and MoEW.

It will also detail the envisioned methods of procurement (advertising, evaluation of offers, award of contracts, shipment date of commodities, site preparation, training and any incidental services). This LOP procurement plan shall be updated annually to indicate actual progress in relation to the established milestones, and any additional information which may be useful. The annual procurement plan shall be submitted after six months of the start of the project.

Performance Monitoring Plan

The approved Work Plans shall form the basis for evaluating the Contractor's performance. The Contractor shall submit a draft performance monitoring plan (PMP) six months after the start of the project . After review and comments by USAID, the Contractor shall finalize the PMP. Reporting on performance will be incorporated in the Quarterly Reports

The PMP will include clear and well defined benchmarks, suggested performance indicators, and targets that help measure progress toward the project objectives and results described in the SOW. Proposed indicators shall meet USAID data quality standards for validity, integrity, precision, reliability and timeliness described in ADS 203.3.5.1 http://www.usaid.gov/policy/ads/200/

A plan for collecting baseline and follow on data should be included.

Management of Subcontracts plan

The contractor will include a Management of subcontracts plan that will demonstrate the contractor's capability of managing the different subcontracts especially under the construction part. The plan shall elaborate on the potential scenarios where a subcontractor fails to deliver as per the project requirements and the contractor's backup plans.

The management of subcontracts plan shall be submitted along with the start up plan, 30 days after the effective start of the project.

E.4. Quarterly Reports

The Contractor shall prepare and submit Quarterly Performance Reports that include necessary financial information of the contract and a summary of progress of the major LWWSS activities in relation to the requirements of the contract, indicating any problems encountered, and proposing remedial actions as appropriate. The report should articulate progress toward goals and highlight key achievements and problem areas that require senior management intervention.

Quarterly reports shall be submitted to the USAID no later than two weeks following the end of each quarter of the contract.

E.5. Short-term Consultant Reports

Upon completion of the services of each short-term consultant, the Contractor shall submit a report to USAID summarizing the activities, accomplishments and recommendations of the consultant. This can be either in written or verbal form as determined by the COTR.

E.6. Technical Reports

The Contractor shall provide copies of all technical reports including analyses, policy recommendations, comparative studies, etc. to the USAID COTR as these are developed by project consultants.

E.7. Completion Report

At the end of the contract, the Contractor shall deliver to the COTR a Completion Report that: (1) summarizes the base line conditions, project accomplishments, deliverables, and results; (2) contains an overall description of activities during the period of the contract; (3) describes the methods of work used; (4) provides comments on recommendations of where follow-up work could further improve the performance of the sector; and (5) contains a financial report that describes in detail how contract funds were utilized.

F. Location of Services

The Contractor shall establish a central office in Beirut for implementation of LWWSS within the first month of the activity. It is advisable that the Contractor explores the possibility of providing dedicated full-time staff(s)to be present in targeted WE offices. WEs could choose to retain the assigned staff project closure thus ensuring continuity and project sustainability.

G. Period of Performance

The contract performance period will be an estimated 48 months from the effective date of the award.

H. Applicable Documents

"LWPP final report" is posted on http://www.sendspace.com/folder/z1fjmn

I. Level of Effort

In its proposal, the offeror shall provide a detailed description of their proposed staffing pattern and set out the level of effort by staff to implement LWWSS project over the four-year period. Offerors should note that their proposed staffing pattern and level of effort will be evaluated. USAID encourages the use of local professionals to the greatest extent possible. Reliance on resident expatriate advisors should be minimized.

The offeror must detail the extent of Home Office support required

Key Personnel:

* Chief of Party: The Contractor shall provide a resident Chief of Party (COP) for the duration of the contract. The Contractor shall delegate adequate authority to the COP to make all LWWSS implementation decisions in the field. The COP shall be responsible for all reporting to USAID and is expected to play a lead role interacting with senior Government officials, water utility officials, donors, and other key water and wastewater sector stakeholders.

The Chief of Party candidate should meet the following minimum qualifications:

- A minimum of 15 years experience with successful water and wastewater utility reforms or institutional strengthening projects;
- A minimum of 10 years experience as a COP or Project Director for projects with similar magnitude and complexity in developing countries;
- Demonstrated expertise in institutional strengthening of water and wastewater utilities; capacity building; water and wastewater infrastructure planning; utility corporatization and regulation; performance-based contracts for water utilities; public outreach; and
- Excellent interpersonal and written communication skills.

* Deputy Chief of Party: The Contractor shall provide a resident Deputy Chief of Party (DCOP) for the duration of the contract. In the absence of the COP, the DCOP shall be responsible for all reporting to USAID. The DCOP is expected to play a lead role in the design and implementation of tasks and activities targeted at improving the management capabilities and performance of the Water Establishments, and for interacting with senior Government officials, water utility officials, donors, and other key water and wastewater sector stakeholders.

- The Deputy Chief of Party candidate should meet the following minimum qualifications:
- A minimum of 10 years experience with management of successful water and wastewater utilities or institutional strengthening projects;
- A minimum of 10 years experience on projects with similar magnitude and complexity in developing countries;

- Demonstrated expertise in institutional strengthening of water and wastewater utilities; capacity building; water and wastewater infrastructure planning; utility corporatization and regulation; performance-based contracts for water utilities; public outreach; and
- Excellent interpersonal and written communication skills.

* Construction Management Specialist: The Contractor shall provide a resident Construction Management Specialist for the duration of the contract. The Construction Management Specialist is expected to play a lead role in the capacity building of WE staff for capital investment planning and the supervision of infrastructure works.

- The Project Management Specialist candidate should meet the following qualifications:
- Holder of an Engineering degree Civil or Mechanical;
- A minimum of 15 years experience with capital investment planning and program/project monitoring of water and wastewater works;
- Demonstrated experience on supervision and management of water and wastewater construction works; and
- A minimum of 10 years experience on projects with similar magnitude and complexity in developing countries.

Illustrative list of other long and short term skills/experiences required:

- Managerial, technical and operational efficiency of water and wastewater utilities;
- Financial and commercial operations of water and wastewater utilities;
- Procurement expertise in general, and procurement under USAID contracts in specific;
- Accounting, tariff analyses and setting;
- Asset management;
- Capital investment planning and program/project monitoring;
- Project and construction management;
- Development and capacity building on corporate culture, customer service orientation;
- Public outreach projects to increase awareness regarding the vulnerability and protection of water resources;
- Management Information Systems;
- Information technology;
- Training and capacity building, human resources management; and
- Quality control and assurance; etc.

GLOSSARY OF TERMS

A

Access to information: Refers to the right of interested parties (the public, NGOs, the media, etc.) to receive information held by government. This right, protected by international and national laws, provides that official documents should be generally available, and that any exceptions should be limited and specific. Access to information increases government accountability to its citizens and reduces opportunities for corruption.

Accountability: Accountability denotes a relationship between a bearer of a right or a legitimate claim and the agents or agencies responsible for fulfilling or respecting that right.

Activated sludge: Activated sludge itself is an aqueous suspension of microorganisms cultivated in a waste treatment process to break down organic matter into carbon dioxide, water, and other inorganic compounds. The activated sludge process has three basic components: 1) a reactor in which the microorganisms are kept in suspension and aerated; 2) liquid-solid separation; and 3) a sludge recycling system for returning activated sludge back to the beginning of the process. The activated sludge process is a common method of secondary (biological) sewage (wastewater) treatment.

Advanced (tertiary) treatment: Treatment step added after secondary treatment stage to remove specific pollutants, such as nutrients, suspended solids, organics, heavy metals or dissolved solids (such as salts).

Advocacy: Advocacy means taking action to bring about the change you are seeking. Advocay can be targeted at changing national or even internal policy. But it can also take place in a local context: It can mean empowering individual and local communities to take action for themselves to achieve change.

Aquaculture: Raising plants or animals in water (water farming)

At scale approaches to sanitation: At scale projects build on network theory, focusing on strengthening bonds among sectors, and bridging across sectors to synergize and coordinate around a shared action agenda. At scale approaches contrast to scaling up, which starts at a pilot level and then works up to reaching broader targets.

B

Bid rigging: Occurs where officials or managers rig or interfere with the contract award to favor a particular bidder, or bidders (usually in return for a bribe or kickback payment).

Bribes: Payments to an official or utility staff member, paid in advance in return for a promise to act a certain way (for example, award a supply contract to a particular firm, or install a connection within a particular time frame).

Biogas: Gas consisting mainly of methane produced by anaerobic digestion of organic waste. Biogas can be produced and collected at community wastewater treatment works, or in smaller scale household biogas plants, as has been practiced widely in China and South Asia.

Black water: Wastewater from the toilet, which contains heavy fecal contamination and most of the nitrogen in sewage.

Biochemical oxygen demand (BOD): BOD is the measure of the amount of oxygen required by bacteria to stabilize material that decomposes under aerobic conditions. BOD is a commonly used determinant of the organic strength of a waste, as it serves as an indicator of the waste's capacity to remove oxygen from water. Oxygen concentrations in water determine the quality of fish and other organisms that can survive and flourish in the water; severe oxygen depletion can create offensive conditions, including bad smells.

Build-Own-Operate-Transfer (BOOT): A BOOT model involves a single organization or consortium designing, building, funding, owning, and operating a scheme for a define period of time (usually around 25 years) and then transferring the ownership across to an agreed party.

Bulk water: Treated water supplied by a utility to a facility in large volume for use, onward sale or distribution to consumers.

C

Child-friendly designs: Technical designs for latrines and bathrooms that take into account skills, preferences and abilities to use (and sometimes maintain) them.

Citizen report cards (CRCs): CRCs are survey in which local communities rate the performance of public utilities, like water and sewerage.

Community-led total sanitation (CLTS): An approach used most often in rural areas that ignites a process of behavior change across the entire community to eliminate the practice of open defecation.

Composting latrine/composting toilet: (also called biological toilets, dry toilets and waterless toilets). These contain and control the composting of excreta, toilet paper, carbon additive, and, optionally, food wastes. Some composting toilets aim to separate urine (urine diversions toilets) to control the moisture of the compost.

Condominial sewers: A small bore shallow sewer usually laid in the back garden or lane of a group of house with significantly lower capital and operating costs when compared with conventional sewers.

Constructed wetlands: Engineered systems designed to optimize the physical, chemical, and biological processes of natural wetlands for reducing BOD and TSS concentrations in wastewater.

Corporatization: Corporatization a process y which a public sector service provider is transformed to have commercial orientation like a private company. The intent is to capture the advantages of a privately run company while retaining government accountability.

Cost recovery: The degree to which the costs of sanitation services are paid for by the users. Cost recovery includes two categories of costs: the initial investment costs and the continuous or recurrent costs of operation and maintenance. The basic cost recovery principle requires that 100 percent of operation and maintenance costs be covered by the users. As for the initial investment costs, users are usually required to pay a part of them, possibly through in-kind contributions made by households, while governments or donors pay the balance of initial set-up and marketing costs.

D

Demand responsive approach (DRA): A project development and management approach in which community members make informed choices about participation, desired levels of service, management of funds, and operation and maintenance. Government plays a facilitative role, sets clear national policies and strategies, encourages broad stakeholder consultation, and facilitates capacity building and learning. An adequate flow of information is provided to the community, and procedures are adopted for facilitating collective action and decision making within the community.

Desludging: Removing accumulated sludge from septic tanks, aqua-privies, etc.

Disability adjusted life years (DALYs): Public health metric of healthy life years lost to disease due to both morbidity and mortality, adjusted for disability.

Disinfection: The inactivation of disease-causing organisms using chemicals, radiation (also solar), heat or physical separation processes.

Dug well/borehole/tubewell: Ground water is obtained through the digging of a well. Wells can be manually dug which limits the depth or they can be dug with machinery (borehole). Boreholes are used when the water is far below the surface or when the ground is too hard to dig a well by conventional means. Because they are so deep boreholes require an electric pump to bring water to the surface. When a borehole has a liner within the shaft it is called a tubewell.

E

Ecological sanitation (ecosan): Sanitation the design of which strives to protect ecosystems, and treats excreta as a valuable resource to be recycled. The term is widely understood to reflect this general approach to excreta management, but ecosan technology often implements the approach through the separation of urine and feces at the level of the individual toilet.

Effluent: Out flowing liquid.

Enabling environment: Policies, financial instruments, formal organizations, community organizations and partnerships which together support and promote needed changes in hygiene practices and access to technology.

Environmental sanitation: A wide range of interventions designed to create and maintain an environment conducive to human health. This includes sanitation (defined as the infrastructure and services required for the safe management of human excreta) but also includes solid waste management, drainage of surface water and sullage, vector control, air pollution control, etc.

Environmental sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their needs. Encompasses, e.g. keeping population densities below the carrying capacity of a region, facilitating the renewal of renewable resources, conserving and establishing priorities for the use of non-renewable resources, and keeping environmental impact below the level required to allow affected systems to recover and continue to evolve

Escherichia Coli (E.coli): A bacterium found in the gut of warm blooded living beings, used as an indicator of fecal contamination.

Evaluation: The means ascertaining whether the objectives of an activity have been achieved, how they were achieved, and what can be learned from the success or failure.

Excreta: Feces and urine.

F

Facultative pond: A pond which is aerobic near the surface, but anaerobic at lower depths.

Facultative: The ability of microorganisms to live under either aerobic or anaerobic conditions.

Fecal coliform bacteria: Common, harmless forms of bacteria that are normal constituents of human intestines and found in human waste and in wastewater. Fecal coliform bacteria counts are used as an indicator of the possible presence of pathogenic microbes. (see E.coli above).

Fecal sludge: Fecal sludge is the solid or settled contents of pit latrines and septic tanks. Fecal sludge differs from sludge produced in municipal wastewater treatment plants. Fecal sludge characteristics can differ widely from household to household, from city to city, and from country to country. The physical, chemical and biological qualities of fecal sludge are influenced by the duration of storage, temperature, intrusion of groundwater or surface water in septic tanks or pits, performance of septic tanks, and tank emptying technology and pattern.

Fecal-oral: Transmitted by any route enabling fecal material to reach the mouth.

Food security: Physical and economic access, at all times, to sufficient, safe and nutritious food to meet dietary needs and food preferences for an active and healthy life

G

Groundwater table: The level at which the subsoil is saturated with water.

Groundwater: Water found below ground level in the soil.

H

Household connection or yard tap: Piped water from the public distribution system that reached a home or yard. Yard taps may be shared among several families within a compound.

Hydrology: Hydrology is the study of the movement, distribution and quality of water on the Earth's surface.

Hygiene education: An element of hygiene promotion concerned with teaching people about how diseases spread; for example through the unsafe disposal of excreta or by not washing hands with soap after defecation. Although this type of awareness-raising may be part of a larger hygiene promotion program, it should not be the sole focus of the project.

Hygiene promotion: A planned approach to preventing sanitation-related diseases through the widespread adoption of safe hygiene practices. It begins with and is built on what local people know, do and want.

Hygiene: Behaviors related to the safe management of human excreta, such as handwashing with soap or the safe disposal of children's feces. Hygiene thus determines how much impact water and sanitation infrastructure can have upon health, because it reflects not the construction, but the use, of such facilities.

I

Integrated Water Resources Management (IWRM): Process that promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

K

Kiosk: A water kiosk provides some shelter around a set of taps available for public use. Kiosks can be quite sophisticated and even include other items for sale. They can also be quite basic, consisting of a concrete slab and a basic protecting wall around the taps.

L

Latrines: Latrines are simple toilets, the basic infrastructure for sanitation

M

Maturation pond: An aerobic pond for wastewater treatment, usually the final pond in a waste stabilization pond system.

Millennium development goals (MDGs): These are a list of 10 goals (including eradicating extreme poverty and hunger, improving maternal health and ensure environmental sustainability) adopted by the UN General Assembly. The MDGs commit the international community to an expanded vision of development, and have been commonly accepted as a framework for measuring development progress

N

Night soil: Human excreta transported without flushing water.

Non-revenue water (NRW): The water for which the utility receives no revenue. It includes unaccounted for water as well as water this is not paid for because it is used for things like firefighting or free water from community standposts.

O

Off-site sanitation: System of sanitation where excreta are removed from the plot occupied by the dwelling and its immediate surroundings.

On-site sanitation: System of sanitation where the means of collection, storage and treatment (where this exists) are contained within the plot occupied by the dwelling and its immediate surroundings.

Open defecation: This is the practice of defecating in the open air. Using an open pit latrine with no lid is a form of open defecation.

Operation and maintenance: The procedures and actions required to keep water supply and sanitation assets functional.

Organic matter: Materials which come from animal or vegetable sources. Organic matter generally can be degraded by microorganisms.

P

Pathogens: Disease causing organisms. The main organisms that pose a threat to health related to poor sanitation are pathogenic bacteria, viruses, parasitic protozoa and helminths that are excreted in large numbers from infected individuals. Many of these organisms have low infectious doses (e.g., helminths, protozoa and viruses) which means that only small quantities of infectious agents are needed to infect a new host (the infective dose varies between organisms and with respect to the susceptibility of the exposed individual).

Patronage: Patronage refers to support or sponsorship of a patron (wealthy or influential guardian). Patronage is used, for instance, to make appointments to government jobs, promotions, contracts for work, and so on. However, there is no such thing as a free lunch. Most patrons are motivated by the desire to gain power, wealth, and status through their behavior. Patronage transgressed the boundaries of legitimate political influence, and violates the principles of merit and competition.

Peri-urban: As rural populations migrate to cities in developing countries, they often create informal settlements or slums, typically at the margin of the city. There areas are often called peri-urban. Slums can also develop in pockets within city limits—these are not peri urban in nature.

Pit latrine: Latrine with a pit for collection and decomposition of excreta and from which liquid infiltrates into the surrounding soil.

Polluter-pays principle: The idea that the person or organization that causes pollution should pay to put right the damage that it causes. Environmental damage may include land and water pollution but also damage to the biodiversity of any protected species or habitat

Point of Use: Refers to the treatment of water at the point where water is consumed, mostly commonly in the household, but can also be a school or clinic. Several methods and technologies are available including chlorination, solar disinfection, boiling, filtration, and combined coagulation/flocculation and disinfection.

Pour-flush latrine: Latrine that depends for its operation of small quantities of water, poured from a container by hand, to flush away feces from the point of defecation.

Primary treatment: Initial wastewater treatment process to remove solids which settle by sedimentation, and floating objects by physical screening and skimming.

Privately-operated public sanitation facilities: Includes facilities at markets, transport hubs, religious shrines, etc. for which users pay a fee for use. These facilities provide sustainable sanitation and model appropriate sanitation to users. Funds are used to pay for cleaning, operation, maintenance, and administration of the facilities, which are operated by local entrepreneurs for profit. There may be controversy about whether these facilities contribute to meeting MDGs.

Public Private Partnership (PPP): PPP refers to contractual arrangements made between public agencies (national or local level) and private service providers or investors. These arrangements create

new partnership with assigned responsibilities for the provision of services that are typically provided by the public sector.

Public utility: A company that provides a public services such as water supply, sewerage, electricity, waste disposal, gas, etc. These are predominantly publically owned but may use private companies for aspects of operation and management or providing specialized services.

R

Raw water: Water not yet treated which comes from a source such as an aquifer, river, lake or rainfall.

Reforms: Water supply and sanitation sector reforms include changes in laws, regulations or policies, and institutions; changes in the organizational model of the service operator; strengthening water sector governance and accountability; and securing funds to invest in the WSS system.

Regulator: An independent body responsible for establishing, monitoring and enforcing regulations in the water sector.

S

Sanitation: Sanitation is the management of human excreta. Improved sanitation is defined 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. JMP

Sanitation marketing: The use of marketing techniques to promote the construction and use of sanitation facilities. Sanitation marketing considers the target population as customers. It borrows private sector experience to develop, place and promote an appropriate product: in this case the product is a toilet and excreta disposal system, be it sewerage connection, pit latrine or other mechanism. Critically the facilities must be readily available at an affordable price in the right place.

Sanitation subsidy: Referring to capital provided to a population unit to aid them in providing sanitation coverage is a key consideration in sanitation programming. Past approaches that provided highly subsidized household sanitation hardware have shown low impact on sustainable coverage. Current thinking on subsidies addresses approaches to strategically target vulnerable groups, moving subsidies into community-based incentives, providing subsidies through credit mechanisms, etc.

School sanitation: Proper sanitation infrastructure and behaviors at schools can improve attendance and improve educational outcomes, leading to societal impacts on human productivity and dignity. School sanitation is particularly advantageous for girls when appropriate numbers of girls' only latrines are constructed and maintained. Activities at schools also model sanitation technologies and behaviors that are transferred from schools and schoolchildren to households and community.

Secondary wastewater treatment: Wastewater treatment step following primary treatment to remove biodegradable dissolved and colloidal organic matter by using biological processes, such as activated sludge, trickling filters, or various kinds of ponds and lagoon systems. With primary and secondary treatment, up to 95 percent of the pollution capacity is removed, but the water is not yet rendered biologically safe.

Septage: Sludge removed from septic tanks. This material is not biologically safe, and the handling of septage remains a critical shortcoming in sanitation systems in developing countries.

Septic tank: An underground tank that treats wastewater by a combination of solids settling and anaerobic digestion. The effluents may be discharged into soak pits or small-bore sewers, and the solids have to be pumped out periodically. Emptying septic tank sludge and final disposal of this septage is a challenge to many countries, developed and developing alike.

Sewage: Human excreta and wastewater, flushed in carrying water into a pipe that can lead to on-site or off-site treatment and disposal.

Sewer: A pipe or conduit that carries wastewater or drainage water. Usually underground.

Sewerage: A system of sewer pipes, manholes, pumps, etc. for the transport of sewage.

Sludge: A mixture of solids and water deposited on the bottom of soak pits, septic tanks, ponds, etc. or is produced as a by-product of wastewater treatment. The term sewage sludge is generally used to describe residuals from centralized wastewater treatment, while the term septage is used to describe the residuals from septic tanks.

Small scale service providers: People and businesses involved in buying water (from the official utility) or producing water (e.g. from boreholes) and selling it on to consumers.

Soak pit: Similar to a pit dug for a pit latrine, except that feces are carried into the pit by water though a pour flush or flush toilet. Also referred to as a cesspool in the United States, soak pits, when properly located in soils with appropriate infiltration capacity, take longer to fill than dry pits. A soak pit can also refer to a pit in which the effluent from a septic tank flows or where gray water is disposed. Soak pits are problematic when soils do not provide sufficient infiltration or where the groundwater table is high.

Software: The set of activities relating to improving sanitation which do not comprise the construction and sue of infrastructure. Generally software includes the enabling environment, hygiene behavior change and sanitation marketing.

Stakeholder: An institution, organization, or group that has some interest in a particular sector or system. Also: individuals and constituencies contributing, either voluntarily or involuntarily, to wealth-creating activities, and who are therefore potential beneficiaries and/or risk bearers of its operations

Stand post: This is an outside tap to which a number of households can go to collect water. Public standposts are connected to the public water distribution systems. This is a common way for utilities to try to reach large number of customers. Private standposts are connected to a private water source like a borehole.

Sullage: Domestic dirty water not containing excreta. Also called grey water.

Suspended solids: Solids that are in suspension in water or other liquids.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

T

Tariff: Tariffs are the established cost per unit of water used by the customer or the cost per unit of wastewater produced by a customer. A tariff is meant to capture some or all of the cost of providing services.

Toilet: All types of technical sanitation solutions, including flush toilets, pour flush toilets, ventilated improved pit (VIP) latrines, pit latrines, etc.

Total solids: The sum of dissolved and suspended constituents in a sample, usually stated in milligrams per liter or percent.

Transparency: The quality of being clear, honest and open. As a principle, transparency implies that civil servants, managers and trustees have a duty to act visibly, predictably and understandably. Sufficient information must be available so that other agencies and the general public can assess whether the relevant procedures are followed, consonant with the given mandate. Transparency is therefore considered an essential element of accountable governance, leading to improved resource allocation, enhanced efficiency, and better prospects for economic growth in general.

Twin pit pour flush latrine: A latrine having a water seal and two unsealed pits which can be sued alternately such that waste in one pit decomposes before it is required to be emptied and re-used.

U

Unaccounted for water (UAW): UAW is the water that disappears because a utility cannot tell what happened to it, and for which they receive no revenue (i.e. water that is stolen, leaked, never billed, etc.)

Utility: This is an organization that provides a public service with responsibility for maintaining and operating the associated infrastructure. Utilities can be public or privately owned.

V

Valuation: Techniques for assessing the value of goods and services not priced and traded in markets. Most applications are to natural resources and environmental assets. Valuation process includes identifying affected benefit/cost categories, quantifying significant physical effects, estimating the values of the effects, quantification/pricing issues

Vector: Insect or organism that carries disease from one animal or human to another (such as a mosquito, fly, or bilharzia-infected snail.)

Ventilated improved pit (VIP) latrine: A VIP is a pit latrine with a slab and a ventilation pipe to remove foul smells from the pit and vent them to the air above the superstructure roof line. A fly screen is added to the top of the ventilation pipe to control flies.

Vulnerable groups: Groups which would be vulnerable under any circumstances (e.g. where the adults are unable to provide an adequate livelihood for the household for reasons of disability, illness, age or some other characteristic), and groups whose resource endowment is inadequate to provide sufficient income from any available source

W

Wastewater: The spent or used water from homes, communities, farms and businesses that contains enough harmful material to damage the water's quality. Wastewater includes both domestic sewage and industrial waste from manufacturing sources.

Water cycle: The paths water takes through its various states - vapour, liquid, solid - as it moves throughout the ocean, atmosphere, groundwater, streams, etc.

Water need: Also water requirement. Theoretical concept defined by the necessities and purposes of the activity generating it, and the efficiency of water uses - for a given quantity and quality - in relation with the results. Therefore this need is usually expressed per unit (per capita, irrigated hectares, production unit). Is independent from the supply volume

Water quality: The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Water supply: The water available in urban and rural areas for drinking and other household uses such as cooking, cleaning, and hygiene. People may access their water supply directly or get water through a third party like a water company or a vendor.

Water revenue: The sources of funds the water utility uses to pay its operating costs. These usually consist of revenue from water (and sewerage) tariffs and connection charges. Sometimes utilities also receive a subsidy from central or local government.

Water table: The level in the ground at which water is found when a hole is dug or drilled (same as Groundwater Table).

Water treatment: This is the process by which contaminants are removed or reduced in water unlit it is suitable for household use. It can be basic or involve several stages and technologies.

Water use: Three types are distinguished: withdrawal, where water is taken from a river, or surface or underground reservoir, and after use returned to a natural water body; consumptive, which starts with withdrawal but without any return (e.g. irrigation) and is no longer available directly for subsequent uses; non-withdrawal, the in situ use of a water body for, e.g. navigation, fishing, recreation, effluent disposal and power generation.

Water use plan: Sets out how water is to be managed, defines operating boundaries, recognizes environmental, social and economic values, and sets basis for compliance.