Senator Paul Simon
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Executive Summary

1. Introduction

President Bush signed the Senator Paul Simon Water for the Poor Act of 2005 (the Act) on December 1, 2005. The Act sets out as a central goal the provision of affordable and equitable access to safe water and sanitation in developing countries as a key component of U.S. foreign assistance programs. It requires the Secretary of State, in consultation with the U.S. Agency for International Development (USAID) and other U.S. Government (USG) agencies, to develop a strategy "to provide affordable and equitable access to safe water and sanitation in developing countries" within the context of sound water management. It also requires the Secretary of State, in consultation with the USAID Administrator, to submit a report to Congress describing that strategy not later than 180 days after the date of enactment of the Act, and annual reports thereafter. The legislation also asks for a report to Congress on efforts that the United States is making to support and promote programs that develop river basin, aquifer, and other watershed-wide mechanisms for governance and cooperation.

This is the second report to Congress under the Act. It builds upon the 2006 Report to Congress, which laid out the U.S. strategy on water, overarching principles towards programming, and six key areas for U.S. activities.[1] In Fiscal Year (FY) 2006, USG agencies obligated, bilaterally and through multilateral institutions, more than $844 million in official development assistance for water, sanitation, and related activities around the world. From USAID's investment alone in FY 2006, over nine million people received improved access to safe drinking water, and close to 1.5 million people received improved access to sanitation. USAID has also increased aid in some of the hardest-hit areas of the world, such as sub-Saharan Africa.

In a significant step since last year, the 2007 Report to Congress lays out region-specific strategies and specifies countries for FY 2007 investments. This report also addresses several emerging issues, including climate variability and climate change, wastewater treatment, land-based sources of pollution and coastal issues, and the special needs of urban populations.

2. The U.S. Water for the Poor Strategy

Over the past year, the State Department and USAID worked jointly to create a new framework to ensure better coherence in the planning, allocation, and monitoring of U.S. foreign assistance. It also strengthened the focus on achieving a single, shared goal: to help build and sustain democratic, well-governed states that respond to the needs of their people, reduce widespread poverty, and conduct themselves responsibly in the international system. The five pillars in this new framework -- Peace and Security, Governing Justly and Democratically, Investing in People, Economic Growth, and Humanitarian Assistance -- all include elements related to water, although the bulk of programs fall in Investing in People, Economic Growth, and Humanitarian Assistance.

The community of USG agencies addressing development assistance issues has made significant progress in addressing issues requested by the legislation, such as establishing metrics for measuring progress, consulting with recipient country nations and analyzing needs and

[1] The 2006 Report is available online at www.state.gov/g/oes/water.

opportunities for U.S. engagement, and developing regional strategies. In practice, programming decisions for water-related activities are made on a country-by-country basis and generally consider the following factors:

- Level of need – based on international reports and local experience;
- Enabling environment – including government commitment to water sector reform;
- Comparative advantage – building on the USG's expertise relative to other donors; and
- Partnership and leveraging opportunities.

3. USG International Water-Related Activities

Both USAID and the Millennium Challenge Corporation provide significant funding for water and sanitation provision and water-related programs. USAID, however, has the means to offer sector-specific technical advice at regional and global levels. This report lays out USAID strategies in four major regions, along with key countries for 2007 activities. The primary interventions, divided by USAID's four geographical bureaus, include:

- Sub-Saharan Africa:
    - Expanded access to small-scale water supply and sanitation, including watershed protection;
    - Improved hygiene education;
    - Utility governance and regulation;
    - Mobilization of domestic financing; and
    - Improved local and transboundary capacity for reducing water conflict.
- Asia and the Near East:
    - Expanded access to safe water supply;
    - Utility governance and regulation;
    - Mobilization of domestic financing; and
    - Expanded access to improved sanitation, with a focus on the urban poor.
- Europe and Eurasia:
    - Fundamental legal and regulatory reform;
    - Financial and operational sustainability for utilities; and
    - Mobilization of domestic financing.
- Latin America and the Caribbean:
    - Expanded access to safe water supply and sanitation;
    - Improved watershed management; and
    - Improved water productivity.

In addition, the report pays special attention to the links between emergency assistance (designed to meet short-term, humanitarian needs during and immediately after a crisis) and development assistance (designed to address basic human needs and spur economic growth). Better design of emergency assistance can support long-term development needs and provide a building block for sustainable access to water and sanitation services. However, challenges include addressing different planning horizons in the two sources of funding, the rapid turnover of expatriate response teams, and a lack of host government commitment to disaster preparedness. Successful interventions require community involvement in planning and application of other developmental strategies from an early stage. More effective management of assistance from a

variety of donors and funding streams, as well as building partnerships before the emergencies take place, will also increase the long-term effectiveness of humanitarian assistance.

4. Emerging Issues

Lastly, the report addresses several emerging issues: climate variability and climate change; wastewater treatment; and land-based sources of pollution and coastal issues. These three issues threaten long-term access to sustainable supplies of clean water in adequate amounts. A fourth area, the special needs of urban populations, is also addressed. For urban communities struggling with population increase and other development needs, inadequate access to basic services such as water and sanitation can exacerbate tensions and political instability. A lack of political will and weak institutional capacity, more than financial or technical issues, are the primary barriers to addressing the shortfall in urban services.

5. Conclusion

Since the 2006 Report to Congress, the U.S. has assessed country conditions in over 60 countries and consulted with local government officials, other development agencies, civil society groups, foundations, and the private sector on the U.S. role in the water sector. The U.S. government has also spearheaded international efforts to continue to rationalize indicators for a range of water-related projects and programs and developed region-specific strategies. Lastly, it has increased its aid devoted to water and sanitation issues in some of the hardest-hit areas of the world, such as sub-Saharan Africa.

As we move forward from the 2007 Report to Congress, the U.S. government will:

- Continue to integrate water-related issues into the new development assistance framework;
- Plan outreach meetings to consult with a wide range of stakeholders on specific areas of the report;
- Increase efforts to share best practices from around the world in order to promote the most effective interventions in our own work and that of our partners; and
- Work with local governments on a case-by-case basis to encourage them to prioritize access to water and sanitation and related water issues.

1. Introduction

President Bush signed the Senator Paul Simon Water for the Poor Act of 2005 on December 1, 2005. The Act sets out as a central goal, and as a key component of U.S. foreign assistance programs, the provision of affordable and equitable access to safe water and sanitation in developing countries. It requires the Secretary of State, in consultation with the U.S. Agency for International Development (USAID) and other U.S. Government (USG) agencies, to develop a strategy "to provide affordable and equitable access to safe water and sanitation in developing countries" within the context of sound water management. It also requires the Secretary of State, in consultation with the USAID Administrator, to submit an initial report describing that strategy and annual reports on its development and implementation until 2015.

1.1 The 2006 Report

On June 1, 2006, the Department of State presented its first Water for the Poor Act Report to Congress. The Report was not intended as a final statement, but rather the beginning of a long-term process to develop and implement a strategy to improve U.S. efforts on international water issues. The Report recognized the importance of water and sanitation to achieving key foreign assistance goals, and highlighted the need to address water and sanitation issues within the framework of sound water resource management. An overview of the U.S. strategy presented in the 2006 Report is shown in Box 1.1.

1.2 Overview of the 2007 Report

Section 2 of this 2007 report describes progress made in implementing the water strategy in 2006 and further develops the strategy in a number of key areas. Section 2:

- Explains how water fits within the U.S. foreign assistance framework;
- Documents recent efforts to improve monitoring and evaluation of U.S. water activities;
- Outlines how the goals of the strategy will be addressed in specific regions; and,
- Describes the role of humanitarian assistance in supporting long-term sustainable access to water and sanitation services as well as sound water management.

Section 3 describes U.S. support and achievements in the water sector in 2006. Section 4 further develops a number of the emerging issues identified in last year's report.

Similar to last year's report, this report is not intended as a definitive, final statement on the U.S. strategy to address water and sanitation issues in developing countries. Rather, this report reflects continuing U.S. efforts to develop and implement a strategy that meets the goals of the Act.

1.3 Methodology

The development of this strategy was coordinated by the U.S. Department of State (DOS), in close consultation with USAID and with the strong support of other federal agencies involved in the international water sector. In August 2006, DOS requested that U.S. Embassies and USAID Missions provide an assessment of water challenges and government commitment in their host

Box 1.1: Overview of the U.S. Water Strategy

U.S. Objectives on Water:

- **Increase access to, and effective use of, safe water and sanitation to improve human health;**
- **Improve water resources management and increase water productivity; and**
- **Improve water security by strengthening cooperation on shared waters.**

To reach these goals, the U.S. will focus its work in six key areas:

Governance Strengthening the role of institutions at the local, national, and regional levels to optimize the benefits from water among its potential uses and developing a supportive environment for private sector participation.	**Mobilization of domestic resources** Promoting sound utility management and cost recovery, and using innovative approaches to support investment by the private sector	**Infrastructure investment** Investing in both large and small-scale infrastructure to increase access to basic services and improve water management.
Protection of public health Advancing hygiene improvement activities, including suitable drinking water disinfection (e.g. point-of-use technologies), safe water storage, hand washing, and household sanitation.	**Science and technology cooperation** Advancing state-of-art knowledge in areas related to water management including pollution prevention, watershed protection, satellite remote sensing, global information systems, and modeling.	**Humanitarian assistance** Providing basic services in response to natural disasters and human-caused catastrophes abroad in addition to prevention, preparedness and mitigation measures to lessen impact of recurrent disasters.

The projects and programs in these areas will be guided by a number of key overarching principles, including:

- A country-driven approach – we will look for countries and communities that are committed to working with us to address these challenges;
- Results-based programming – metrics will be developed to measure the results of U.S. projects and programs and investments made where the largest returns can be obtained;
- Maximizing impact – a number of considerations will be taken into account to improve the effectiveness of U.S projects and programs, including meeting the special needs of women and children and building on previous work within the region; and
- Leveraging through partnerships – working with and through others to build upon and expand U.S. efforts.

countries, and identification of opportunities to strengthen U.S. engagement on water and sanitation. The Department received over 60 responses, which have helped shape country and regional programs.

DOS and USAID have also worked to engage other major actors in the water sector to better inform U.S. decision-making. On January 31 and February 1, 2007, the United States organized a meeting of the world's largest donors in the water sector to discuss the monitoring and evaluation of water and sanitation programs. (This activity is described in Chapter 2.)

Individual consultations have been held with recipient country governments, donor governments, intergovernmental organizations, foundations, and the private sector to better understand where others are engaging and how the U.S. could more strategically direct its own efforts. The U.S. has also worked to focus global events (such as World Water Week held each August in Stockholm, Sweden) on the exchange of best practices, lessons learned, and the development of partnerships in order to scale-up proven approaches for addressing these issues.

A notice was published in the Federal Register on March 28, 2007, to solicit written comments from all stakeholders on the 2006 Report. In addition, the Department of State co-hosted, with the Woodrow Wilson Center and the Center for Strategic and International Studies, a public meeting in Washington, D.C. on April 23, 2007 to discuss key elements of the strategy with experts and stakeholders. More than 70 people attended the public meeting. Public comments were also reviewed by U.S. experts and policymakers for consideration in the development of this report.

2. The U.S. Water for the Poor Strategy

The 2006 Report to Congress was a first step in a long-term process to develop and implement a U.S. strategy to "provide affordable and equitable access to safe water and sanitation in developing countries." This report builds on this strategy in four key ways:

- Defining how water and sanitation issues fit within the USG's new foreign assistance framework;
- Discussing steps that are being taken to better monitor and evaluate the results of water and sanitation programs, and measure overall sector trends at the national, regional, and global levels;
- Taking the general elements of the strategy (Box 1.1) and applying them to specific regions; and
- Demonstrating the important role of humanitarian assistance in laying the groundwork for long-term sustainable access to water and sanitation services.

2.1 The Role of Water in U.S. Foreign Assistance

The United States has long recognized the role that water and sanitation can play in advancing U.S. foreign policy interests. Sound water management and increased access to water and sanitation are critical to human progress. Water is a vital resource in protecting human health, improving educational outcomes, responding to humanitarian crises, promoting economic growth, and enhancing security. Demand for water can also be a catalyst in developing public participatory processes that improve governance. The challenge, given that resources are limited, is determining where and how to focus U.S efforts to achieve the greatest benefits in support of U.S. foreign assistance goals.

Box 2.1: U.S. Foreign Assistance Objectives

Peace and Security: To help nations effectively establish the conditions, capacity, and commitment for achieving durable peace, security, and stability; and for responding effectively against arising threats to national or international security and stability.

Governing Justly and Democratically: To promote and strengthen effective democracies in recipient states and move them along a continuum toward consolidation.

Investing in People: To help nations achieve sustainable improvements in the well-being and productivity of their populations through effective and accountable investments in education, health, and other social services.

Economic Growth: To generate rapid, sustained, and broad-based economic growth.

Humanitarian Assistance: To save lives, alleviate suffering, and minimize the economic costs of conflict, disasters and displacement.

Over the past year, the U.S. foreign assistance process has been reformed to:

- Ensure better coherence in the planning, allocation, and monitoring of U.S. foreign assistance funds; and
- Strengthen the focus of U.S foreign assistance on achieving a single shared goal – to help build and sustain democratic, well-governed states that respond to the needs of their people, reduce widespread poverty, and conduct themselves responsibly in the international system.

This process does not highlight specific sectors, but rather allows USG country teams to prioritize resources to those areas that the U.S. believes will promote and sustain long-term country progress. The new foreign assistance framework is organized to support five objectives: peace and security, governing justly and democratically, investing in people, economic growth, and humanitarian assistance (See Box 2.1). To best achieve each objective, thematic areas have been defined with a range of activities.

Most water and sanitation activities fall under the "Investing in People" and "Economic Growth" objectives. Within the "Investing in People" objective, the area of health contains activities to increase access to safe water and basic sanitation and to improve hygiene and safe water handling at the household level. Specific types of activities include:

- Direct support of community and municipal-level water supply and sanitation, and collection and treatment of wastewater;
- Support of institutions, governance, and financing arrangements that strengthen the delivery of water supply and sanitation infrastructure services, such as utilities, water users associations, municipal or other local credit, revolving funds, and public-private partnerships; and
- Household level water quality interventions, as well as improvement of personal and domestic hygiene and sanitation, such as point-of-use water treatment, hand washing, and sanitation promotion, including support of institutions and institutional relationships to strengthen and sustain such activities.

Within the "Economic Growth" objective, the area of environment includes the following types of activities:

- Watershed management activities to protect and sustain water supplies;
- Small-, medium-, or large-scale infrastructure development to divert or store water;
- Activities to reduce, mitigate, and prevent municipal and industrial water pollution;
- Solid waste management and related activities that ensure effective management of water resources in urban areas; and
- Water use efficiency activities in irrigated agriculture.

In addition, meeting basic water and sanitation needs as well as water needs for food security are fundamental in disaster or conflict situations to the "Humanitarian Assistance" objective. Activities that use water as a means of building trust and promoting cooperation within and among countries are included under the "Peace and Security" objective. Finally, water activities such as the formation of user groups and mechanisms that strengthen public participation in decision-making support the "Governing Justly and Democratically" objective.

2.2 Monitoring and Evaluating Progress

A key component of the U.S. strategy on water and sanitation is the development of measurement approaches to monitor and assess progress. This is particularly challenging in the water sector due to questions surrounding data quality and reliability, comparability, and geographic and temporal scale. In addition, confounding factors make it difficult to develop direct correlations between the specific outputs of activities undertaken by one party and the results achieved at local, national and regional levels. Questions related to what we should measure, how best to measure, and who should take responsibility for measuring are wider questions among all actors in the sector, as are fundamental challenges associated with local monitoring and evaluating (M&E) capacity.

The reform of U.S. foreign assistance and the requirements of the Senator Paul Simon Water for the Poor Act of 2005 have reinvigorated U.S. efforts to address these issues. However, addressing the challenges above will likely require a long-term effort both domestically and with our international partners.

Box 2.2: Illustrative Indicators Related to Water Resources Management and Water Supply and Sanitation Programs

- Number of people with access to improved drinking water supply as a result of USG assistance.
- Number of people with access to improved sanitation facilities as a result of USG assistance.
- Area of river basin/watershed with improved management as a result of USG assistance.
- Number of policies, laws, agreements, or regulations promoting sustainable watershed or water resources management that are implemented as a result of USG assistance.
- Number of policies, laws, agreements, regulations, or investment agreements (public or private) promoting sustainable water supply and sanitation that are implemented as a result of USG assistance.
- Monetary savings generated through prevention, mitigation, and reduction of pollution.
- Number of people adopting small-scale irrigation technologies.
- Liters of drinking water disinfected with USG-supported point-of-use treatment products.
- Number of hours per day that households in USG-assisted programs have potable water service.
- Amount of private financing mobilized with a Development Credit Authority guarantee.

U.S. agencies working on water and sanitation have well-established indicators for measuring project/program outputs based on many years of field experience (see Box 2.2). These types of data are useful in evaluating the efficiency and efficacy of U.S. interventions. They guide choices about which development approaches, technologies, and methodologies should be employed, and permit managers to track program progress and analyze reasons for success and failure. To strengthen U.S. capacity in this area, the United States has initiated a series of regular discussions between U.S. and World Bank experts on M&E issues throughout the water sector. Several meetings involving a number of U.S. agencies have occurred over the past year.

Measuring results for the U.S. water strategy (Box 1.1) will be aligned closely with evolving M&E systems for the new U.S. framework on foreign assistance. This will allow the U.S. to measure and track its own program-level contributions, as well as assess country and regional trends to facilitate decision-making regarding where and how resources should be targeted. To the extent possible, both levels of measurement will draw on widely used and accepted indicators and protocols, such as those employed by the WHO/UNICEF Joint

Monitoring Programme (JMP) for water supply and sanitation or those under development by UN Water and other international institutions. This will permit easier consolidation of results across USG programs as well as comparability across countries and donors.

In January 2007, the United States – working closely with a number of other key donors and UN agencies engaged in the water sector – launched a process to collectively think through approaches to monitoring and evaluation in the water sector. Three issues are being considered:

- How do we measure the performance and impacts of specific projects and programs?
- How do we assess overall national and global trends in the water sector?
- What are the international processes and mechanisms for monitoring and reporting in the water sector and are they meeting our needs?

With input from this process, efforts are now underway in the UN system to develop a short list of proven indicators to measure progress in the overall water sector. These issues will also be a major theme of the 2007 World Water Week (August 12-18, in Stockholm, Sweden). It will likely be some time before consensus is built around a small group of key indicators at the international level, but this is an important first step in improving U.S. and international efforts to monitor and evaluate progress in the water sector.

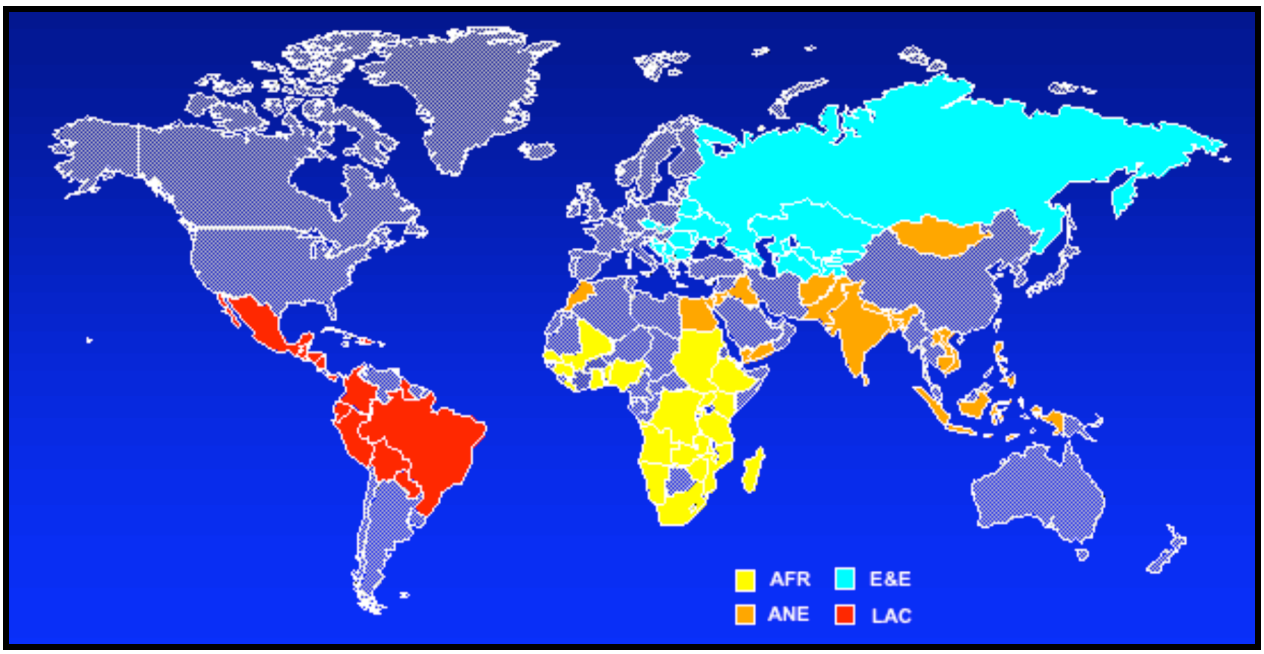
2.3 USAID's Regional Strategies

Within the U.S. government, both USAID and the Millennium Challenge Corporation provide significant funding for water and sanitation provision and water-related programs (see Chapter 3 for more information). USAID has the capacity to offer sector-specific technical advice at national, regional, and global levels. Although the Millennium Challenge Corporation provides active input into the development of individual Compact priorities, they do not dictate where a country must spend its funding. This section therefore concentrates on USAID's regional strategies to address water-related issues around the world. The four key geographic regions in which USAID operates are Asia and the Near East (ANE, including northern Africa), sub-Saharan Africa (AFR), Latin America and the Caribbean (LAC), and Europe and Eurasia (E&E) (see Figure 2.1). Each region has different needs, enabling environments, and cultural backgrounds, which influence the kinds of assistance most appropriate to the area. In August 2006, the U.S. Department of State requested that embassies and USAID missions assess the water and sanitation situation in over 60 countries, identifying challenges, and reporting on opportunities for strengthening U.S. engagement. Many of the responses are listed in Box 2.3. This information has informed discussions within the new foreign assistance framework of where and how addressing water and sanitation issues might most effectively advance U.S. development goals.

In general, improved governance of water resources was considered a key intervention in every region, ranging from utility management to developing capacity in integrated water resources management and strengthening institutions that support transboundary management decisions. Promotion of sanitation, hygiene education, and safe household water management were also frequently listed.

Each region within USAID has recently developed or revised its individual strategy using information from the cables, expert guidance from within the U.S. Government, and discussions

Figure 2.1: USAID Presence Countries



with donor governments, recipient governments, the private sector, and civil society groups. The Paul Simon Water for the Poor Act of 2005 states that designation of high priority countries should be made on the basis of need, and on where U.S. investments can make the largest contribution in promoting "good health, economic development, poverty reduction, women's empowerment, conflict prevention, and environmental sustainability." In practice, programming decisions for water-related activities are on a country-by-country basis, and generally consider the following factors:

- Level of need: The level of need is identified by USAID with input from many different sources. Key among them is the UNICEF-WHO Joint Monitoring Plan, which publishes country-level estimates of access to safe water and sanitation. USAID also uses input from technical reports published by the World Bank and other international finance banks, academic analyses, research from non-governmental organizations, and other local experience.

- Enabling environment: Interventions are more likely to be successful if the legal, policy, and institutional context for water resources management is committed to providing cost-effective water and sanitation services. USAID investments have greatest impact in countries which support water sector reform.

- Comparative advantage: USAID has clear areas of expertise in the water sector with respect to other donors. To ensure coordination and reduce duplication, USAID takes the plans of national governments, other donors, and the public and private sectors into account at the country and regional level to identify appropriate interventions.

- Partnership and leveraging opportunities: Donor assistance will never match the need for investment in the water sector, nor will public sector funds. USAID is actively developing partnerships with other donors, international financial institutions, and the private sector to leverage available funding and increase the impact of U.S. investment.

Box 2.3: Sample Responses from the Country Assessments for the Six Priority Areas

Governance:

- New pricing scheme needed to raise the funds to operate and maintain water and sanitation infrastructure. (Egypt)
- Functional business models for wastewater management are still lacking. (Thailand)
- There is a need to remove the mistrust and encourage collaboration between India and Nepal on river management. (Nepal)
- Although a national policy on water and sanitation was formulated in 2000, the three levels of government do not follow it. (Nigeria)
- Capacity building in trans-boundary conflict management and resolution is an important area of intervention. (Ethiopia)
- The government needs to encourage more efficient water use through public outreach, legislation, new building codes, and tariffs. (Jamaica)
- Sound water and natural resource management strategies need to be promoted. (Bolivia)
- Central institutions need to better manage funding of water and sanitation projects to discourage overlap and competition among government entities. (Ecuador)
- Necessary reforms include fiscal improvements and water service reforms to boost utility revenues. (Albania)
- Enhancement of Nistru River and Siversky Donets river basin management is needed. (Ukraine)
- Policies discourage resolution of transboundary upstream/downstream seasonal water conflicts. (Uzbekistan)

Humanitarian Assistance:

- Systems are needed to mitigate risk from hydro-meteorological or weather-related disasters like drought. (India)
- The government has identified safe, potable water as one of its priorities for post-conflict recovery. (Uganda)
- Some areas still lack sustainable water supplies since Hurricane Mitch in 1998. (Guatemala)

Mobilization of Resources:

- Additional investment commitments to expanded service coverage are required for both rural and urban areas. (Vietnam)
- The government is interested in encouraging private investment in the water and sanitation sector. (Maldives)
- Municipalities need help to issue bonds in the local capital market to raise capital for water and sanitation services. (South Africa)
- One goal is to encourage sustainability by leveraging private and public funds after USAID activity ends. (El Salvador)
- A priority is to expand potable water access to small towns by providing credit to local water companies. (Peru)
- Russia has the technology and scientific knowledge, but lacks investment. (Russia)

Infrastructure:

- Capital is needed for water and sanitation infrastructure in secondary provincial cities and rural areas. (Cambodia)
- Loss reduction programs is needed to address leaks and un-accounted for water. (Jordan)
- The City of Baghdad has identified disrepair of water treatment and wastewater treatment plants as a key infrastructure problem. (Iraq)
- Measures to develop alternative water sources and to repair broken pipeline infrastructure have not progressed. (Sierra Leone)
- Aging infrastructure is leading to copious water losses. (Botswana)
- More efficient irrigation systems for the agriculture sector will have to be developed and used. (Dominican Republic)
- The infrastructure must be strengthened to prevent water loss and declining agricultural production. (Peru)
- Of 22 wastewater treatment plants, not one is operating properly. (Armenia)

Box 2.3 (cont.): Sample Responses from the Country Assessments for the Six Priority Areas

Protection of Public Health:

- Programs are needed to promote household supply disinfection. (Philippines)
- There is a need to prevent use of contaminated groundwater from shallow wells for drinking and food preparation. (Afghanistan)
- Sanitation facility coverage is estimated to be as low as 3.6% in rural areas. (Eritrea)
- Poorly designed city gutters fill up with garbage and contribute to street floods that cause frequent cholera outbreaks. (Guinea-Bissau)
- Reduced morbidity from diarrhea will only be achieved by raising awareness of the importance of hygiene. (Madagascar)
- Many of the sicknesses in Guatemala affecting infants and children, such as diarrhea, hepatitis, typhoid, and cholera, originate from water. (Guatemala).
- Opportunities exist to introduce hygiene principles in schools and encourage proper waste disposal. (Haiti)
- Lack of a water supply and sanitation system directly contributes to health problems. (Tajikistan)

Science and Technology (S&T) Cooperation:

- Technical capacity is needed to make locally appropriate design standards and codes for water and sanitation facilities. (Indonesia)
- Hydrologists and meteorologists need to collaborate to improve flood forecasting models. (India)
- The government recently signed an agreement describing the need to increase technical cooperation with Egypt on the Nile river waters. (Sudan)
- Long-term graduate degree training for managers in water and sanitation would be welcomed. (Rwanda)
- Finding qualified hydrologists who have not migrated to the United States, United Kingdom, or Canada can be difficult. (Jamaica)
- Officials say they would like to do scientific collaboration to control invasive aquatic plant species. (Mexico)

Decisions about the countries listed as priorities in the following section have been made at the level of USAID country missions or in regional bureaus.

2.3.1 Sub-Saharan Africa (AFR)

Sub-Saharan Africa is struggling to meet the Millennium Development Goals (MDGs) to halve the proportion of people living without sustainable access to safe drinking water and basic sanitation by 2015. Although access to water supply in rural areas has increased by 6 percent between 1990 and 2004, access in urban areas has dropped by two percent.[2] Africa has experienced an annual growth rate in urban populations of almost five percent per year over the past two decades[3], one of the highest rates in the world. Most of that growth has occurred in slums with no access to basic services. A burgeoning population and limited financial and technical capacity at the national and local levels, exacerbated by conflicts throughout the region, are stressing already weak systems. Although some countries in sub-Saharan Africa have made great strides in developing the necessary policy framework to devolve decision-making and responsibility for providing basic water and sanitation services to the local level, the funding from the national government does not always follow. Local capacity to plan for and manage

[2] WHO-UNICEF Joint Monitoring Program, 2004 data. Available online at www.wssinfo.org.
[3] Cities Alliance, 2006. Urban Transition in Sub-Saharan Africa: Implications for Economic Growth and Poverty Reduction. Washington, D.C.

Table 2.1: Estimated USAID Water Obligations in Africa (Source: USAID) *(Dollars in Millions)*

	Fiscal Year				
Estimated USAID Water Obligations	**2002**	**2003**	**2004**	**2005**	**2006**
Water Supply and Sanitation (non-IDFA-funded)	$8.758	$9.785	$15.385	$19.444	$21.680
Water Supply and Sanitation (IDFA-funded)	12.383	29.449	35.230	63.926	59.738
Watershed Management	6.151	14.227	14.452	9.615	4.227
Water Productivity	3.790	11.056	14.640	12.912	5.119
Total	$31.082	$64.517	$79.707	$105.897	$90.764

services is limited; without strong support from the national level, local government institutions often cannot fulfill their obligations to deliver services.[4]

The U.S. government works in many ways to promote the prioritization of water by African host governments, to help establish an appropriate national policy framework, and to build host country capacity to manage water resources and to expand access to safe water and sanitation. For example, the Millennium Challenge Corporation is supporting work with the Government of Mozambique to expand access to water and sanitation, while engaging the U.S. Army Corps of Engineers to build the capacity of government agencies to manage and regulate these services. USAID and the State Department have ongoing programs with the Global Water Partnership program to facilitate national, public-private dialogues that raise awareness with policy makers, increase political support for water programs, and help create the enabling conditions for sustained and effective activities in water resource management and water and sanitation service provision. Such reforms are essential to long-term expansion of access to these services in Africa.

In addition to such institutional and policy reform efforts, USAID is attacking the challenge of increasing access to water and sanitation in Africa with investments in a number of strategic areas. In FY 2006, USAID's Bureau for Africa (AFR) established a new, regional program focused on provision of basic water and sanitation services. USAID's total FY 2006 funding for water activities in Africa was $91 million, of which $81 million was for water supply and sanitation activities with both non-IDFA and IDFA-funded activities. Of the water supply and sanitation funding, $59.7 million was from the International Disaster and Famine Assistance (IDFA) account. Details of USAID funding levels for different water activities in sub-Saharan Africa over the last five years are provided in Table 2.1. Funding obligations by USAID in FY 2006 in sub-Saharan Africa for "drinking water supply projects and related activities" was approximately 40 percent of the Agency's total worldwide obligations in this sector.

In FY 2007, this program is continuing to focus investments on small-scale infrastructure to increase the provision of basic services, while seeking to address critical issues in water governance at local, national, and regional levels. By addressing governance issues – e.g., making transparent the objectives, rules, and procedures by which all stakeholders will engage with the utility – it will be possible to begin bringing innovative interventions to scale.

USAID consulted with other key players in sub-Saharan Africa, such as the World Bank, the United Kingdom's Department for International Development, and civil society groups with

[4] Water and Sanitation Program (World Bank). 2006. Is Africa on target to meet the Millennium Development goals on water supply and sanitation? A status overview of sixteen African countries (draft for circulation).

long-term experience in the region to develop a strategy that complements the work of others and leverages partnerships with the private sector and a range of local institutions. USAID will have an important role in building knowledge about best practices in the AFR region, analyzing the effectiveness of innovative approaches, and increasing opportunities for new models to be implemented in other areas.

Key programmatic areas include the following:

Small-scale water supply, sanitation, and watershed protection

Focal Areas Supported:	Infrastructure, Mobilization of Resources, Protection of Public Health
Priority Countries:	Angola, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Tanzania, Uganda, and Zambia

AFR will continue to give priority to the provision of small-scale water supply and sanitation services, and to watershed protection activities to safeguard water sources. Investments in small-scale infrastructure are important to meet the immediate needs of rural communities for safe water and sanitation services. These efforts go hand-in-hand with preserving existing sources of water through watershed management programs to ensure that investments in service can be sustained over time.

USAID has three significant public-private partnerships in water supply, sanitation and watershed protection in Africa, expanding thereby the impact of USAID funding through at minimum a 1:1 financial match and other in-kind support. While the emphasis of these partnerships is on grassroots solutions, their regional nature allows for increasing coordination, sharing, and promotion of best practices and lessons learned.

The West Africa Water Initiative (WAWI) was initiated in 2002 to maximize the impact of water-related investments by both private and public actors, targeting interventions to highly vulnerable rural and urban populations. USAID works in conjunction with eleven other partners to support the four principal goals of WAWI: increased access to sustainable, safe water and environmental sanitation services; decreased prevalence of water-borne diseases; ecologically and financially sustainable management of water quantity and quality; and development of a new model of partnership. The full range of activities that will be undertaken in 2007 include well drilling and rehabilitation, alternative water source development, construction of latrines, household and school-based sanitation and hygiene education, community mobilization, hydrogeological analysis, policy development, livelihoods, income generation and food security, governance and the enabling environment, information management, and gender mainstreaming.

Through the Community Watershed Partnership Program (CWPP), USAID and the Coca-Cola Company will jointly invest $7 million in nine new water projects in Africa in 2007. This partnership combines local experience, technical expertise, community involvement, and funding to increase access to safe water supply, promote sanitation and hygiene, facilitate the productive and efficient use of water, and protect and conserve local water resources.

The PlayPumps Global Development Alliance is a $60 million public-private partnership between USAID, the Case Foundation, the Office of the Global AIDS Coordinator, the South African company, PlayPumps International, and other public and private, local and international

partners to provide clean water in ten sub-Saharan countries by installing 4,000 PlayPumps in schools and other community locations by 2010. The PlayPump water system includes innovative pumping technology – a merry-go-round that pumps water as children play, and a water tower with billboards for public service announcements and private advertising space. Innovative cost recovery and sustainability is achieved by selling advertising space on the PlayPump water tower, allowing PlayPumps International to offer a 10-year operational guarantee on each PlayPump water system. Additionally, the system promotes improved sanitation and hygiene behaviors and a reduction in the spread of HIV/AIDS through public awareness campaigns.

Hygiene education

Focal Areas Supported: Protection of Public Health
Priority Countries: Ethiopia, Madagascar, Uganda

The Hygiene Improvement Project (HIP) aims to reduce diarrheal disease prevalence in children under five through the promotion of key hygiene practices: handwashing, safe disposal of feces, and safe storage and treatment of drinking water. HIP also integrates hygiene improvement into other health platforms such as HIV-AIDS, and other infectious diseases, as well as non-health platforms such as schools. As mentioned in the Water for the Poor Act of 2005, hygiene interventions are important complementary activities to maximize the public health impact of improved infrastructure for water supply and sanitation.

HIP has launched three hygiene improvement initiatives in Africa. In Ethiopia, USAID/HIP works in collaboration with the World Bank/Water and Sanitation Programme to help guide the implementation of the National Hygiene and Sanitation Strategy in the Amhara Region of 20 million, and to support the Regional Health Bureau in achieving targets relating to hygiene and sanitation. In Madagascar, USAID/HIP works with the water, sanitation, and hygiene (WASH) national network to promote improved hygiene practices at scale in collaboration with over 130 partners from government, NGO/PVO, CBO, the private sector and others. In Uganda, HIP launched a project working with key national and international NGO/PVOs, the National Sanitation Working Group and the Uganda Water and Sanitation Network to help implement the behavior change component of the national hygiene and sanitation policy. A primary objective of HIP's technical assistance is to build the capacity of national partners to design, implement, and evaluate hygiene behavior change programming. The partnership also includes actors representing critical work with internally displaced peoples in the northern part of the country.

Utility governance and regulation

Focal Areas Supported: Governance
Priority Countries: Angola, Mozambique, Nigeria, Zambia, Regional Initiatives

Most of the growth in the coming decades will take place in slums where people live without access to the most basic services. In urban and peri-urban areas, utilities generally serve the richest populations, leaving poor and marginalized populations underserved. The result is that the poor generally pay exorbitant prices to vendors and other informal provision networks compared to the cost of services provided by the water utilities. Expanding water services to poor urban communities can be cost effective and can have considerable impact on achieving the Millennium Development targets. The World Bank has recently issued several major studies, including cases from sub-Saharan Africa, which address characteristics of good water utilities;

service models for the poor; innovative financing models; the challenge of financing sanitation; water pricing, regulation, and cost recovery; and the transition to bankability. USAID has also conducted a number of case studies recently that support similar conclusions, emphasizing the importance of corporate governance and utility reform.

Utility governance and reform efforts will build on experiences developed through USAID's EcoAsia and Blue Revolution programs. (See the 2006 Report to Congress for more information.) USAID's focus in sub-Saharan Africa is on developing pilot projects that demonstrate solutions to key water and sanitation issues, and on spearheading a regional learning network to share lessons learned, potentially through developing sub-Saharan utility leadership or through providing opportunities for technical twinning partnerships. While there have been fewer opportunities to work on sanitation services to date, USAID seeks to expand the role of utilities in providing sanitation services to cities and towns.

Mobilization of domestic financing

Focal Areas Supported: Mobilization of Resources
Priority Country: Uganda

In many developing and transforming countries, domestic capital is available to invest in public goods such as water and sanitation; the challenge is finding good "bankable" projects and connecting these with sources of financing. There is a range of innovative financing tools developed in the United States, Europe and elsewhere which can reduce financial risks and create incentives for the investment of local private capital into the water and sanitation sectors. These activities not only increase cash flows for infrastructure; they also help develop and strengthen and build local capital markets. While these financing models have been used in Central and Eastern Europe quite extensively and have been introduced in Asia, there has been much less experience to date in sub-Saharan Africa, particularly in the water sector. However, there is considerable potential to leverage limited donor and public sector resources by tapping private sources of capital for investment in water and sanitation infrastructure and building experience with these models within Africa.

One proposed pilot project is in Uganda, building on the success of Uganda's National Water and Sewerage Corporation (NWSC). The NWSC has been contracting for municipal services for over six years. The Ugandan government has now requested USAID's help in developing a water revolving fund to assist both private contractors and potentially small municipalities make capital investments, which will improve and expand water services.

Improved local and transboundary capacity for reducing water conflict

Focal Areas Supported: Governance, Humanitarian Assistance
Priority Regions: East Africa, Horn of Africa, Southern Africa

In post-conflict areas, providing basic human services such as water, education, and health is critical to encouraging internally displaced persons and/or refugees to begin returning home. In places where traditional methods of resolving conflict have broken down, maintaining tenuous peace agreements also requires building capacity for dispute resolution at the local level. As many conflicts can be exacerbated by struggles over limited local natural resources such as water, strengthening conflict management institutions and improving watershed management practices to mitigate conflicts can have a positive impact on larger peace and security issues.

Improved management of shared water resources can contribute to regional stability and improve long-term relationships between neighboring countries. For example, the increased trust between Ethiopia and Egypt that emerged due to regular meetings of the Nile Basin Initiative also led to an agreement on cattle imports. Improved transboundary management can also contribute to economic growth and increased access to water and sanitation. Establishing institutions to resolve water conflicts can confer legitimacy to major water projects and can increase investor confidence in the long-term viability of those projects, thereby attracting greater investment.

2.3.2 Asia and the Near East (ANE)

The ANE region contains three-fourths of the global number of people without adequate access to safe water and sanitation services. Approximately 20 percent of the region's population still lacks safe, reliable drinking water, and almost 45 percent have no access to basic sanitation. This situation particularly impacts the urban and rural poor, who suffer disproportionately in terms of the cost of water and impact on their health. In the ANE region, over 500,000 young children die from diseases caused by unsafe water supply, sanitation, and hygiene each year. Inadequate sanitation has also contributed to the extensive pollution of fresh water resources, exacerbating pressure on remaining water resources.

Water demand for domestic and industrial uses is exploding in the ANE region, while irrigated agriculture is also expanding. Much of the water crisis in the region is caused by poor operation and maintenance, inappropriate technology, and weak technical and financial management. Unless fundamental changes occur in water management practices, the region will experience harsh water shortages that will adversely impact economic growth. The World Bank estimates that water investment requirements in the Middle East alone are on the order of $5 billion annually to raise region-wide coverage to 90 percent for water supply, and 80 percent for sewerage and sanitation. Funds from public sector donors are expected to meet less than five percent of the increased financing requirements. Municipal and private-sector investment must be increased.

To meet basic human needs for water and mitigate tensions over increasingly scarce water resources, ANE countries need to pursue a different path to water resources development and management. This path involves bold, concerted action by governments, water users, donors, and the private sector working in partnership. To support the Water for the Poor Act, USAID launched in 2006 the Blue Revolution Initiative (BRI) for water, focusing on the following areas:

- Expanding access to and effective use of safe water supplies and improved sanitation, with a focus on the urban poor;
- Improving the effectiveness, governance, and accountability of utility operations;
- Improving access to financing for expanding water and sanitation infrastructure; and
- Increasing local investment in water and sanitation infrastructure.

Regional initiatives in all the BRI's focal areas provide a key opportunity for leveraging USAID's contributions and an important platform for sharing experiences, technical innovations, and expertise, and for improving cooperation among countries, cities, and communities. While water may be a source of tension among countries, water can also provide an opportunity for

cooperation. Through the Blue Revolution Initiative, USAID will support regional approaches that bring together water resource managers and experts from neighboring countries; build partnerships and networks that promote trust, confidence, and understanding of one another's problems; and provide opportunities for countries to work together to solve water-related issues.

Key programmatic areas include the following:

Expanding access to safe water supplies

Focal Areas Supported: Infrastructure, Protection of Public Health, Science and Technology Cooperation
Priority Countries: Afghanistan, Indonesia, Iraq, Jordan, Lebanon

Improving access to clean water and sanitation is among the most important challenges facing the ANE region, because of its broad impacts on human health and economic growth and close connection to the well-being of low-income populations. In Indonesia, USAID is providing support to increase the supply of clean, piped water to lower income families. USAID will support the "software" side of the water supply industry. This includes working with utilities and other commercial entities to produce and market "point-of-use" water treatment solutions to help improve the quality and safety of drinking water at the household level. In Jordan, the construction of the $125 million Zara Ma'in Water Supply project is underway, with USAID funding $104 million of the cost. This project will increase potable supplies by 40 percent in the capital. USAID is also implementing a $72 million component of the multi-donor rehabilitation of Amman's potable water distribution system.

Improving the effectiveness, governance, and accountability of utility operations

Focal Areas Supported: Governance
Priority Countries: Indonesia, India, Regional Initiatives

In the past, the water sector had a track record of inefficient operations and poor cost recovery. Water utility reform, combined with sustainable capital market financing, can help reverse this trend and is critical to meeting the needs of developing countries in water and sanitation. In developing countries, the water and sewage utilities are often operating far below sustainable cost recovery levels as they struggle to maintain even the currently inadequate levels of service. This also means they are even less able to attract the capital needed to expand service delivery to the poor populations in slums, peri-urban areas, and villages lacking access to safe water supply and sanitation services. Addressing problems of financial sustainability and weak management often requires fundamental changes in the operation and regulation of these utilities, and in the pricing and tariffs charged by the service providers.

USAID regional and country missions in Asia are working to support these reforms. For example, USAID/Indonesia is providing assistance to municipalities in water and sanitation planning, operator and management training, and capacity building to improve water and sanitation service delivery. In India, with mission support, the Government of Orissa has agreed in principle to move forward with a water utility sector reform consisting of corporatizing a state operating company to operate services in their three biggest cities, and developing operating contracts between the cities and the corporation. This is a notable development because Orissa, one of the poorest states in India, would be the first state in India to adopt a reform model that matches the best practices used in Eastern Europe and other advanced countries in water reform.

Improving access to financing for expanding water and sanitation infrastructure

Focal Areas Supported: Mobilization of Resources
Priority Countries: India, Jordan, Philippines, Regional Initiatives

Although lack of capital for water and sanitation infrastructure is often cited as a problem, many developing and transforming countries do have sources of private capital that can be invested to meet public needs. Innovative financial tools reduce risks and create incentives for the investment of local private and municipal capital into the water and sanitation sectors.

For example, in Jordan, USAID used an innovative financing arrangement to support the construction of the large As-Samra wastewater treatment plant that will process 60 million cubic meters per year. This project was funded through a build-operate-transfer (BOT) contract that was Jordan's first private sector BOT with 50 percent private sector financing and operation for a 25-year period. Approximately 46 percent of the cost is being provided by USAID in the form of a grant.

In the Philippines, the Philippine Local Water Utilities Administration, with USAID's assistance, has developed a lending facility to improve the credit-worthiness of water districts in the country. The ECO-Asia program is currently developing new lending strategies and products targeted for water districts that need to improve their credit-worthiness in order to qualify for long-term credit for expansion.

In India, investments in water and sanitation will improve water service delivery to 1.2 million people and businesses in eight municipalities in the Bangalore metropolitan area, Karnataka. The investment is being financed through a mix of Indian government grants from targeted water and sanitation funds, user fees, donor loans (sewage component) and commercial debt. A piece of the debt is through a $23 million pooled municipal bond, partially guaranteed by USAID, serving these eight municipalities.

Expanding access to improved sanitation, with a focus on the urban poor

Focal Areas Supported: Infrastructure, Science and Technology Cooperation
Priority Countries: Bangladesh, India, Indonesia

Even in ANE countries that have made significant investments in improved water supply, sanitation has typically not received the same attention. However, the ANE region is also home to promising, innovative approaches, where USAID missions are supporting sanitation marketing and are exploring opportunities to advance behavior-focused "Total Sanitation" approaches in India and Indonesia, as well as product-focused sanitation marketing approaches that have had success in Vietnam. In addition, USAID/Indonesia is providing assistance to municipalities in sanitation planning, operator and management training, and capacity building in sanitation service delivery.

2.3.3 Europe and Eurasia (E&E)

Many of the countries in the E&E region have moved from centralized to local management of public services. In these cases, new legislation at the national level has devolved responsibilities related to infrastructure and water management to the local level. Along with inadequate fiscal resources and a lack of technical capacity at the local level, unintended consequences of this change have included increased corruption and rent-seeking. In response, several countries have regionalized or fully centralized their water sector utilities.

The former Soviet sphere, including the former Soviet Republics and the Eastern Bloc nations, benefited from a relatively well-developed water supply and sanitation system. The systems provided piped water, but often did so inefficiently with unnecessarily high water losses and energy demands. Wastewater conveyance was also widespread, but treatment varied greatly from non-existent to generally uniform secondary treatment. Since the fall of Communism, the water sector has suffered. A spiral of disinvestment, declining services, unhappy consumers, and inadequate cost recovery has characterized the sector, with adverse effects on public health. It is important to reverse the loss of capital in the water sector before existing systems become unserviceable and citizens lose faith in the ability of local government to fulfill their public service obligations.

Lack of wastewater collection and treatment services also has a substantial negative impact on public health and the quality of both ground and surface water supplies. Communities struggle to build and operate wastewater collection and treatment systems when their potable water utilities are not financially sustainable. Until water supply needs are satisfied, wastewater investment is deferred. The weak financial capacity of sovereign and sub-sovereign utilities, low public capacity to pay, and the fact that the burden of wastewater tends to fall on people other than those who produce it, all contribute to low investment in this sector. There is a great need to develop "transitional" models of wastewater collection and treatment, which account for the constrained financial capacity of governments and consumers and the fact that wastewater investment tends to be a low public policy priority.

Investments in sustainable watershed protection and management are also difficult without financially viable potable water companies. Because many water resource management agencies rely in large part on fees and fines associated with raw water use and effluent release, fixing water utilities is a strategic precondition to implementing successful water resource management.

The European Bank for Reconstruction and Development, World Bank, Asian Development Bank, European Investment Bank, and Nordic Development Bank have substantial funds available for infrastructure capital development loans and grants in the region. However, because of their bias towards capital projects, they provide little money for technical assistance and training or for the development of "enabling frameworks" (e.g., regulatory capacity) through loan projects. In addition, while the EU has substantial resources available for technical assistance, it is focused on countries in the process of entering the EU.

In the E&E region, USAID has found that it can help countries transition to financial and operational sustainability for water and wastewater utilities through the use of technical assistance and training resources to improve sector structure, change institutions and their governance practices, build regulatory capacity, and begin to initiate innovative financing

approaches based on domestic capital markets. USAID also helps build the larger framework required for infrastructure growth by commercializing and/or restructuring key service providers and preparing utilities to receive loans by the other concessional lending agencies.

USAID's E&E approach is to tailor assistance to the stage reached by the water sector in targeted countries:

Fundamental legal and regulatory reform

Focal Areas Supported: Governance
Priority Countries: Georgia, Montenegro

The first step to transitioning to sustainability for water and wastewater utilities includes fundamental legal and regulatory reform, including institutional restructuring in the water/sanitation and wastewater treatment sectors. Such reforms can include requiring commercialization and corporatization of public sector infrastructure service providers, promoting private sector involvement in public services, and developing effective social safety net provisions.

Transition to financial and operational sustainability

Focal Areas Supported: Governance, Mobilization of Resources
Priority Country: Armenia

Restructuring and reforming local service providers leads to financial and operational improvements. Most countries in the E&E region are finding this second stage quite difficult, with some reforming utilities leading the way and others lagging far behind. In the majority of countries, USAID focuses on supporting the transition to sustainability, especially concentrating resources on E&E countries that have high proportions of unsustainable water and sanitation utilities.

USAID also supports the development of viable business cases for wastewater collection and treatment, both for reasons of public health as well as environmental improvement. In addition, USAID tries to build linkages to water resource management institutions through appropriate determination of fees and charges, due to the role these play in providing adequate raw water resources to downstream users.

Building financing mechanisms

Focal Areas Supported: Mobilization of Resources
Priority Countries: Armenia, Montenegro, Russia, Ukraine

The final stage of development is marked by the need to increase capital market investment in water and wastewater utilities through innovative financing mechanisms. At this stage, a few of the E&E countries are beginning to use revolving funds, municipal bonding, and other mechanisms to increase financing. This is an issue that must be addressed not only by national governments, but also by local governments and private infrastructure companies.

For example, USAID has been supporting the Institute for Urban Economics, which is developing a bond pool for municipal investments for the government of Russia. Now in the final design stages, the government has agreed to capitalize this fund over five years. In Ukraine,

USAID has assisted the government to establish a bond-based municipal finance facility. In Armenia, USAID is financing a feasibility study on the establishment of a water and sanitation financing mechanism, which was requested by the local government.

2.3.4 Latin America and the Caribbean (LAC)

The Latin America and the Caribbean (LAC) region has made strong progress towards meeting the Millennium Development Goals in water and sanitation. Improved drinking-water coverage increased from 83 percent in 1990 to 91 percent in 2004, reducing the number of people without access to improved water from 74 to 50 million. Sanitation coverage increased from 68 to 77 percent in the same time period, reaching an additional 127 million people. Yet challenges in the region remain, particularly with respect to the large urban-rural disparities of coverage and inequities reflected by the region's wide socio-economic spectrum. For example, Chile, Ecuador, Guatemala and Mexico have all met their targets, yet 95 percent of the people living without access to improved water sources are in rural areas. Furthermore, while 86 percent of the urban population region-wide benefit from basic sanitation, 51 percent of the rural population in the region lives without it.

During FY 2006, the LAC Bureau obligated more than $13 million for drinking water supply projects and related activities, with an emphasis on Ecuador, Bolivia, Peru and Guatemala, drawing on funding particularly from Andean Counterdrug Initiative, Food for Peace (P.L. 480), and International Disaster and Famine Assistance (IDFA) accounts. LAC obligated an additional amount of $19 million in FY 2006 for watershed management and water productivity improvement activities, bringing the LAC funding total for the year for all water activities to over $33 million.

Key programmatic areas include the following:

<u>Water Supply and Sanitation</u>

Focal Areas Supported:	Governance, Infrastructure, Protection of Public Health, Science and Technology Cooperation
Priority Countries:	Bolivia, Colombia, Ecuador

According to the Pan American Health Organization, only 60 percent of rural populations in LAC receive disinfected water and only 10-15 percent of collected sewage receives treatment. The majority of USAID's water supply and sanitation work is carried out in the Andean region of Latin America. Under USAID's Bolivia, Colombia, and Ecuador Alternative Development programs, missions are providing technical assistance, planning and training for local and municipal governments to help them provide sustainable water and sanitation services, increase access to safe water and sanitation, and protect human health and the environment. Missions will continue to help build and sustain community water and sanitation systems - from village latrines to sophisticated urban water systems – and provide hygiene, sanitation, and health education in schools, nurseries, and households.

Watershed Management

Focal Areas Supported: Governance, Mobilization of Resources, Science and Technology Cooperation

Priority Countries/Basins: Bolivia, Ecuador, El Salvador, Guatemala, Haiti, Honduras, and the Amazon Basin

The loss of tree cover and vegetation throughout the LAC region has led to increased soil degradation and sedimentation, resulting in clogged streams, deteriorating water quality, and an increased threat of flooding, all of which contribute to greater vulnerability to disasters and costly damage to public infrastructure. These problems are further compounded by growing competition for water from domestic, commercial, and industrial water users and untreated industrial wastes, agricultural chemical run-off, and other effluents.

Watershed management initiatives, including integrated water resources management, coastal zone management, and freshwater ecosystems management, are an integral and cross-cutting component of USAID assistance in LAC. From Central America to the Andes, USAID is working to help improve the management of critical watersheds by protecting habitats that contain important water resources and biodiversity, promoting sustainable economic growth and land use planning, and assisting local governments and communities implement natural resource management projects and adopt watershed management plans. Under the USAID Central American and Mexico Strategy and Plan, for example, integrated water resource management is one of the underlying foundations for all USAID development activities. As Central America is also a region prone to natural disasters, improved watershed management plays an important role in helping prevent and mitigate the devastating impacts that often result from such natural phenomena.

In El Salvador, USAID is supporting the development of farm plans, strengthening watershed organizations, and building local capacity to implement standard practices for watershed improvement. Such efforts lead not only to the elimination of many destructive practices, such as hillside burning in priority areas, but also to increased local income. In Ecuador, USAID's partnership with Quito's Water Protection Fund will continue to promote participatory watershed management in surrounding parks and protected areas that supply the city with 70 percent of its water. This initiative provides local governments with technical assistance to improve watershed management policies, practices and monitor water resources, directly benefiting down-stream users. It also helps establish financial incentives and mechanisms to support long-term investment in watershed and biodiversity conservation and increase civil society and private sector participation in and support for watershed management. In Bolivia, USAID is also working with the private sector through a partnership with the Coca-Cola Company and local non-governmental organizations to develop a practical model for water and watershed management that highlights the importance of public-private collaboration in watershed protection.

Under the Amazon Basin Conservation Initiative (ABCI), a five-year, $65 million USAID- and partner-supported program, efforts are also being undertaken to build greater local capacity and commitment for effective stewardship of the Basin's nationally and globally important biological diversity and environmental services. The Southwestern Amazonia in the region of Madre de Dios (Peru), Acre (Brazil), and Pando (Bolivia) is reaching a critical point in its history where large-scale infrastructure projects and rapid land-use changes will significantly modify the rich

cultural and unique biological diversity of the tri-national region. The ABCI consortium will work to strengthen environmental governance to help reduce the projected loss of biological diversity and environmental services focusing on the development of three tri-national watershed management plans (Rio Acre, Rio Abuna, and Rio Tahuamanu). The plans will include maintenance of riparian habitats to conserve ecosystem services and will serve as a collaborative landscape management model for transboundary watersheds facing similar threats in the Amazonia.

Water Productivity

Focal Areas Supported:	Governance, Mobilization of Resources, Science and Technology Cooperation
Priority Countries:	Bolivia, Columbia, Ecuador, Dominican Republic, Mexico, Regional Initiatives in Central America

While the LAC region is generally considered to have abundant water resources, the lack of clean water is increasingly becoming a problem due to poor or non-existent wastewater treatment, poor agricultural and land use practices, and excessive use of groundwater. Water productivity includes industrial water pollution control, water regulation and policy, and identification of best practices in water efficiency and cleaner production.

The recently signed Central America-Dominican Republic-United States Free Trade Agreement (CAFTA-DR) calls upon all parties to the agreement (United States, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua) to improve and effectively enforce their environmental laws and policies. Under USAID's Central American regional environmental program, the U.S. Environmental Protection Agency and the Central American Commission for Environment and Development recently completed a model water discharge regulation for the region. They are also working to implement that regulation in each of the CAFTA-DR countries and strengthen the capacity of environmental officials to conduct wastewater discharge inspections from industrial facilities. In El Salvador, USAID is working to promote the reform of the nation's water law. In the Dominican Republic, USAID helped the Secretariat of Environment and Natural Resources (SEMARENA) develop the country's first set of norms for ground-water management, water quality, and wastewater and is now working with the ministry on their implementation. USAID is also working with well-drillers to educate them on the country's water laws and to inform them of the consequences of illegal well-drilling.

The control of industrial water pollution has also been a key component of USAID assistance. In Mexico, Central America, the Dominican Republic and Bolivia, USAID is working with the private sector and cleaner production centers to reduce water use and the net generation of wastewater from production processes through the adoption of cleaner technologies and environmental management systems. At the heart of USAID's regional cleaner production program in Central America is a $10 million loan guarantee to several Central American banks, which helps small and medium-sized businesses and NGOs gain access to credit for investments in clean production technologies.

In the Dominican Republic, the island's tourism industry is putting a heavy strain on groundwater supply, threatening the sustainability of this natural resource. Working with the tourism sector, USAID is helping to map and monitor groundwater flow, and promote ways it can save and reuse water. In Mexico and Brazil, USAID is partnering with the Alliance to Save

Energy's Watergy Program to help municipal water suppliers institute energy management systems and develop metering and monitoring systems that help reduce energy consumption, thereby allowing municipalities to spend more resources on water quality, access and treatment.

2.4 Humanitarian Assistance and Sustainable Water Programming

In the aftermath of conflict or natural disasters, water, sanitation, and hygiene (WASH) interventions are critical to saving lives and constitute an important part of donors' overall humanitarian assistance and reconstruction efforts. Affected populations subject to ongoing displacements often lose their access to essential WASH services needed to prevent death and disease. If the affected country is already water scarce, then this pre-disaster stress exacerbates the risks; estimates presently suggest that 32 percent of the population in Africa (460 million people) will be living in water-stressed countries by 2025.[5] To address the broader risks, then, the USG needs to address the effects of disasters within the context of general development goals. With worldwide humanitarian assistance reaching $7.8 billion in 2003[6], these investments are important, especially as emergencies transition into post-conflict or post-disaster situations. Humanitarian assistance can become an important building block of donor efforts to provide sustainable access to water and sanitation.

Box 2.4: Water for Displaced Populations

In response to two decades of conflict in Northern Uganda, USAID's Office of U.S. Foreign Disaster Assistance (OFDA) has funded water systems to provide water to displaced populations. Although stability has returned to many areas in the north, some Internally Displaced Personss (IDPs) have chosen to remain in or around established camps rather than return home. USAID is working to assist the Government of Uganda to identify camps that have evolved into permanent settlements and to transition relief water points into town water supply systems that will be managed under Uganda's strong National Water Policy. As part of this strategy, some diesel-powered systems may be replaced by less repair-intensive solar-powered systems.

While conflict or natural disaster emergencies are often unexpected and unforeseen, strategically linking humanitarian assistance with development programs can result in sustainable solutions that maximize foreign policy objectives and create stronger, democratic states. Key challenges include the following:

- Different planning horizons and partners: Humanitarian assistance provides funding for urgent needs through international and non-governmental implementing organizations, whereas development assistance most often involves funding for long-term planning with a much wider variety of partners. These different planning horizons and main partners complicate the process of reconciling shared programmatic goals.

[5] Ahmed Nejjar (World Health Organization). 2007. From paper presented at Water Management Africa 2007 Conference and quoted in: Nduru, Moyiga, "'Extreme water events' hover in Africa's future," Mail & Guardian, April 26, 2007.
[6] Global Humanitarian Assistance Update. 2004-05. Development Initiatives: United Kingdom.

- Rapid turnover of expatriate response teams: The loss of experienced implementers undermines capacity to find innovative solutions and better connect humanitarian interventions with long-term development assistance.
- Lack of local government commitment: Encouraging the capacity and willingness of host governments to take responsibility for meeting the needs of their own people is critical to building effective disaster prevention programs and sustainable access to water and sanitation services.

International experience in addressing the link between humanitarian and development assistance is still limited. However, programs that encourage partners to incorporate transition goals into their projects may spur innovation. Early application of development strategies, such as community involvement in designing and implementing WASH services, is critical to building sustainability. Finally, consideration of conflict over scarce natural resources like water is also key to influencing sustainability by addressing underlying issues.

USG humanitarian assistance programs assist citizens from some of the poorest – yet most strategically important – nations in the world, including Sudan, Pakistan, Lebanon, Ethiopia, Kenya, Iraq, , the Democratic Republic of Congo, Afghanistan, Somalia, Chad, Liberia, Uganda, Colombia, Rwanda, and Sri Lanka. In these contexts, the provision of basic water and sanitation resources can help the USG by bridging the divide between rival groups, demonstrating peace dividends, and encouraging collaboration between communities and local government. Linking humanitarian assistance to development activities is especially important in these countries.

Both USAID and the Department of State are actively involved in building WASH systems in post-conflict and developing nations. U.S. humanitarian assistance funding in the WASH sector programmed through USAID's Office of U.S. Foreign Disaster Assistance (OFDA) and U.S. Department of State's Bureau of Population, Refugees, and Migration includes projects that ensure sustainable access to safe drinking water, sanitation services, and hygiene activities by providing training and local capacity-building to effectively manage water resources and maintain access for the entire community. In addition to expanding the access of the rural poor to WASH services, USAID's Office of Food for Peace programs also include the construction of cisterns, irrigation systems and water conservation structures to help farmers manage their water resources better and reduce the risk of crop losses due to drought. Small-scale interventions in the WASH sector also play an important role in the strategic, quick-impact programs in support of key political transitions in post-conflict and transition countries programmed by USAID's Office of Transition Initiatives.

Also important is coordination and relationship-building between different donors, even before an emergency happens. Private sources of funding for humanitarian assistance from the U.S. have increased from 30 percent in the 1970s to 85 percent today, and public-private partnerships for humanitarian assistance and development are on the rise. The challenge in the future will be to coordinate even more effectively between these different funding partners, particularly with respect to linking humanitarian and development assistance. Leveraging different sources of funds to target the relief-to-development gap will build partnerships that raise political will to effectively address this transition, increase the positive impact of USG investments, and promote sustainability in areas served by emergency assistance.

3. USG International Water-Related Activities

In FY 2006, the United States obligated more than $860 million in official development assistance for water activities in developing countries around the world. From USAID's investment alone, over 9 million people received improved access to safe drinking water, and close to 1.5 million people received improved access to sanitation. The United States also contributed to a number of multilateral development banks (such as the World Bank, the African Development Bank and the Inter-American Development Bank) and international organizations (such as various UN organizations and the Global Environment Facility) that work on water. In addition, the United States provided over $41 million to support three bi-national commissions – the Border Environment Cooperation Commission, the International Boundary and Water Commission, and the International Joint Commission – that manage a number of transboundary water-related programs with Mexico and Canada.

3.1 Overview of U.S. Government Support

Over fifteen U.S. Federal agencies are involved in international water issues.[7] Key agencies that receive direct appropriations are listed in Table 3.1, although these agencies cooperate extensively with technical experts from other agencies such as the U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention (CDC) within Health and Human Services (HHS), the U.S. Army Corps of Engineers, Peace Corps, and the National Oceanic and Atmospheric Administration (NOAA). In 2006, the Millennium Challenge Corporation (MCC) significantly increased its obligations in the water sector with support focused on improving economic uses of water, such as developing more effective irrigation systems.

Table 3.1: Estimated Financial Support Obligated by Major U.S. Funders of Freshwater Programs Abroad for Fiscal Year 2006 [a] (Source: Listed Agencies)

Department or agency	All Water	Excluding Iraq and Afghanistan
Department of Defense [b]	$182M	$4.8M
Environmental Protection Agency [c]	$79M	$79M
Millennium Challenge Corporation[d]	More than $194M	More than $194M
U.S. Agency for International Development	$371M	$347M
Department of State	More than $37M	More than $37M
Total	**More than $863M**	**More than $662M**

[a] The U.S. also provides loans, guarantees, and insurance for water projects. The amount of these investments can vary widely from year to year.

[b] Funds come from the Commander's Emergency Response Program and Overseas Humanitarian, Disaster and Civic Aid.

[c] This includes approximately $66 million earmarked for infrastructure assistance along the Mexican border and approximately $13 million for work on the Great Lakes.

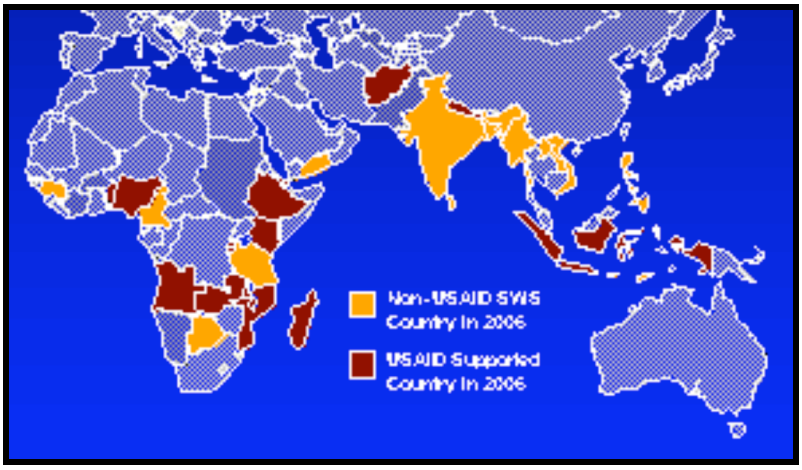
[d] Although the MCC generally obligates the money for Compacts with recipient countries in the year the Compact is signed, it is drawn down over five years. Because Compacts have maximum amounts under certain categories but allow for flexibility and budget changes throughout the life of the Compact, the range of potential obligations in the water sector is given. See Section 2.3 for more information.

[7] See the 2006 Report to Congress at www.state.gov/g/oes/water for more information.

With the funding provided by the U.S. government in 2006, significant achievements were made towards the goals of the Act. Examples of these achievements include the following:

- More than 9 million people received improved access to adequate safe water supply and close to 1.5 million people have received improved access to adequate sanitation from USAID activities;
- Because of the work of 290 Peace Corps volunteers, close to 276,000 people received access to improved water supply and sanitation in 805 communities in Bolivia, the Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Kiribati, Mali, Panama, and Paraguay;
- Every day, USG partners sold an average of over 23,000 bottles of chlorine solution in 18 countries in Africa and Asia – enough to provide 12.5 million people with two liters of safe drinking water each day. This "Safe Water System" was designed by the CDC and has been scaled up with USAID and other donor support (Figure 3.1) as well as ongoing CDC technical assistance;
- Approximately 210,000 people in 129 communities of Burkina Faso received clean water for school children and residents as part of a joint initiative between the MCC and USAID to improve the health and educational status of rural girls;
- A model revolving fund in the Philippines issued its first loan – supporting more than 10,000 new connections in the Metro Iloilo water district;
- In southern Africa, the riparian countries of the Okavango River established a permanent secretariat

Figure 3.1: Geographic Extent of the Safe Water System (SWS) Program



Box 3.1: Safe Drinking Water and Hygiene in Kenyan Schools

In May 2005, CARE Kenya, the U.S. Centers for Disease Control and Prevention (CDC), and Emory University implemented a school-based safe drinking water and hygiene intervention in 45 rural primary schools in Nyanza Province, western Kenya. The intervention, funded by the Coca Cola Africa Foundation and the U.S. Agency for International Development, used locally manufactured chlorine solution socially marketed by the non-governmental organization Population Services International (PSI), locally manufactured portable hand washing and water storage stations, and education about safe drinking water and hand washing.

In February 2006, the partners evaluated the impact of the intervention on students' knowledge and parents' adoption of safe water and hygiene practices in the home. The evaluation showed: 1) an improvement in students' knowledge of correct water treatment procedure and knowledge of when to wash their hands; 2) an increase in the number of parents who treated their water at home after the pilot project (14 percent as compared with 6 percent); and, 3) a 35 percent decrease in school absenteeism.

As a consequence of the documented success of this pilot program, the water in schools initiative is currently being scaled-up in Nyanza Province by CARE and the Center for Global Safe Water at Emory University.

to support cooperative management of water resources in the Okavango basin;

- In Yerevan, Armenia, water supply was increased from 7 to 18 hours per day as a result of utility reforms that improved maintenance and cost recovery (three of five utilities now recover full operating and maintenance costs);
- The U.S. Army Corps of Engineers built 449,200 cubic meters of daily water treatment capacity, potentially benefiting 2.2 million Iraqis; and
- In Ethiopia, improved land management within the Yeku basin has increased water infiltration and improved ground water recharge - extending stream flow four additional months into the dry season.

Figure 3.2: Clarifier Tank in Erbil, Iraq

Activities to help supply water and sanitation services often involved collaboration by multiple agencies. Examples of noteworthy U.S. agency projects can be found in Box 3.2.

Box 3.2: Examples of Noteworthy U.S. Agency Projects

A. Watershed Evaluations in Cape Verde

A joint effort between the U.S. Geological Survey (USGS), the Millennium Challenge Corporation, and the Government of Cape Verde evaluated water resources of three Cape Verde watersheds and developed an integrated water resources monitoring and management plan. As part of this effort, USGS hydrologists trained local hydrogeologists and technicians in the implementation of management practices to ensure the sustainable development of additional water resources.

B. Post-Disaster Water Access with Public-Private Support in Sri Lanka

The U.S. Trade and Development Agency and WaterHealth International, based in Lake Forest, California, were major co-sponsors of a water disinfection and purification system program for tsunami-affected regions of Sri Lanka. WHI installed purification systems to provide a sustainable source of safe drinking water for up to 100,000 tsunami survivors living in temporary and permanent shelters. This project utilized public and private resources to identify local needs, perform site selections, train local partners and operators, and monitor and maintain system operations.

C. Water Chlorination in Bolivia

Working closely with his counterpart agency to strengthen and support a massive municipality wide water chlorination project, a Peace Corps Volunteer educated and promoted the importance of clean water and its effects on health. The Volunteer jointly managed with his counterpart agency an existing $10,000 Water for People project to chlorinate water in nine local cooperative systems covering a growing population of 200,000 around the town of Montero. The project entailed training public service providers about disinfection using chlorine and water testing, cleaning water systems, and working with end-users to dispel erroneous beliefs regarding chlorine. Additionally, the Volunteer created a set of educational materials called "Ataque de los Microbios Matadores" (Attack of the Killer Microbes), a series of sketches used to teach about health, hygiene, and chlorination. The colored version as well as the coloring book is now in use by several Volunteers and work partners across Bolivia.

Box 3.2 (cont.): Examples of Noteworthy U.S. Agency Projects

D. Community Water Partnership in Mali

50,000 people have improved access to clean water for household and irrigation use around the capital city of Bamako, as well as the water scarce Segou and Mopti regions. Another 150,000 people will benefit from job creation, education, and environmental awareness. This program builds on a partnership between USAID/Washington, USAID/Mali, the Global Environment and Technology Foundation, a local Coca-Cola bottler, local civil society groups, and community and government stakeholders.

E. Groundwater Exploration and Sustainable Use in Sudan

Significant progress has been made in addressing basic potable water and sanitation needs in the three states of Darfur since USAID's Office of Foreign Disaster Assistance (OFDA) first sent out Disaster Assistance and Response Teams in 2004. However, lack of knowledge of water resources in the region have significant impacts on the ability to plan, organize, and implement an effective potable water strategy for the region in response to the current humanitarian crisis and future development activities. OFDA provided funding for a groundwater exploration project to provide a better understanding of the aquifer potential in Darfur. The U.S. Geological Survey, Radar Technologies France, and UNESCO worked together to produce potential water drilling site maps and a drilling manual. Staff from non-governmental organizations, UNESCO, and UNICEF were trained on the use of these products. UNICEF has already begun using these maps to help provide water to internally displaced people.

F. Climate and Forecasting Training for Meteorologist and Hydrologists from Developing Countries

With support from USAID, 38 meteorologists from Africa, South America, Central America and the Caribbean received advance training to improve forecasting and climate prediction skills. They did this while working at special regional training desks at the National Oceanic and Atmospheric Administration's National Center for Environmental Prediction as part of the World Meteorological Organization's Voluntary Cooperation Program. This program supports capacity building activities in developing countries, with a focus on enhancing the collection, processing, and exchange of weather data, and improving their prediction of and preparation for severe weather events. Water management is greatly improved with the availability of timely and reliable forecasts.

G. Water Policy Program in Lebanon

The USAID-funded Lebanon Water Policy Program (LWPP) improved the level of water supply to more than 120,000 households. Executed by Development Alternatives, Inc. (DAI), it procured and installed 86 production and zone meters in South Lebanon to improve water monitoring techniques and reduce water losses. This was part of a program aimed to help the South Lebanon Water Establishment reduce water losses from the current rate of 50 percent to 20 percent within five years.

H. Water for All in India

In the state of Maharashtra, USAID worked with the Pune Municipal Commissioner and the Additional City Engineer for Water and Sewerage to finalize a work plan for implementation of an engineering and management upgrade of the water distribution system in order to provide continuous water supply to a pilot portion of the city. This activity aims to reintroduce metered water service in order to support system upgrades from a currently intermittent supply to a continuous, pressurized service. The system upgrade will provide improved services to slum residents who currently rely on public standpipes. Management incentives will be introduced in the Municipal Water Supply and Sewerage Department to encourage efficient system operations and sustainability.

3.2 U.S. Agency for International Development

In FY 2006, USAID obligated over $200 million for water supply projects in 35 countries and sanitation activities in 25 countries, of which $86 million came from humanitarian assistance. Figure 3.3 provides a thematic and regional breakdown of FY 06 investment in all water-related activities (further detailed in Appendix). USAID provided improved access to adequate water supply to more than 9 million people and improved access to adequate sanitation to almost 1.5 million. See also Table 3.2 for the number of people, by region, benefiting from improved access to adequate water supply and sanitation in FY 06.

Box 3.3: 22 Million Served Since 1975 in Egypt

In 2006, USAID/Egypt concluded its long-standing program in water and wastewater. Since 1975, over 22 million people have benefited from improved water and wastewater systems. USAID has provided potable water to isolated villages as well as improving the reliability and sustainability of water and wastewater services in nine governorates (Cairo, Alexandria, Aswan, Luxor, South Sinai, Daqahliya, Beni Suef, Fayoum, and Minya) and three Suez Canal cities (Port Said, Ismalia, and Suez). The systems have ranged from large-scale water and wastewater treatment facilities to smaller potable water supply plants, including collection/treatment systems, force mains, public stations and sewage collection systems. USAID has also helped improve water utilities customer service, cost recovery, revenue generation, and full operational sustainability; brought affordable water distribution networks into villages and installed water connections and sanitation equipment in households; spread hygiene awareness in rural communities through a volunteer trainer network; and enhanced private sector participation by providing partial guarantees for

USAID's investments include such activities as: provision of water and sanitation services; integration of hygiene promotion and behavior change with service provision and with health activities, emphasizing household water treatment interventions, handwashing, and effective sanitation use; source protection and reduction of contamination; improved capacity of public and private organizations to deliver services; policy development and institutional strengthening; legal, regulatory, and governance reforms; and improved transboundary management. Please see Appendix for more information on USAID's 2006 investments in the water sector.

Figure 3.3: USAID's 2006 Water Sector Obligations

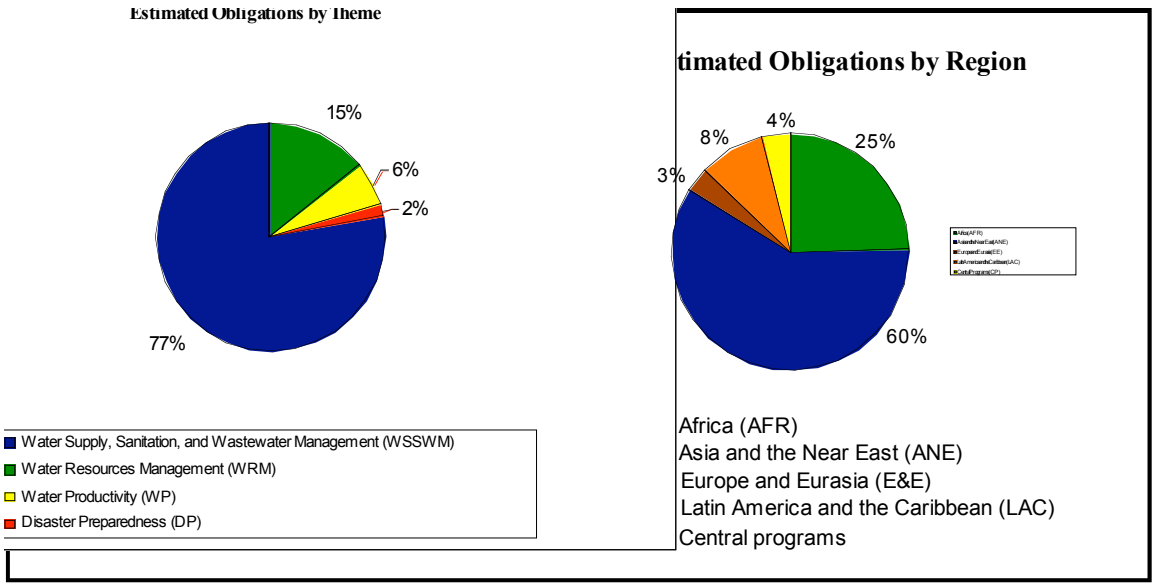


Table 3.2: People with Improved Access to Adequate Water Supply and Sanitation in Fiscal Year 2006 from USAID Activities (Source: USAID)

Region	Improved access to adequate safe water supply	Improved access to adequate sanitation	Total
Africa Region	297,000	105,000	402,000
Asia and the Near East	7,727,000	1,145,000	8,872,000
Europe and Eurasia	995,000	135,000	1,130,000
Latin America and the Caribbean	208,000	98,000	306,000
Total	**9,227,000**	**1,483,000**	**10,710,000**

Box 3.4: Developing a Water Compact with Mozambique

The Government of Mozambique's Millennium Challenge Account proposal focuses on water, sanitation and private sector development. Developed through a grant with the U.S. Army Corps of Engineers, the objectives of the water and sanitation components are to improve and increase the availability and quality of fresh water, improve access to potable water as well as water for manufacturing and services, and provide adequate sanitation and drainage to the affected population in four Northern Provinces, while developing the capacity of government agencies to manage and regulate these services. By the end of the project, it will improve access to water for 2.6 million people. MCC expects to complete a Compact with significant water and sanitation investments in FY 2007.

3.3 Millennium Challenge Account

The Millennium Challenge Account, established on January 23, 2004, provides U.S. global development assistance through the Millennium Challenge Corporation (MCC) to reduce poverty through sustainable economic growth. MCC is based on the principle that aid is most effective when it reinforces good governance, economic freedom and investments in people.

MCC provides support to projects and programs in eligible countries based on country-identified priorities. Countries are responsible for developing programs and then implementing them in accordance with a "Compact" negotiated with MCC. MCC sets aside funds at Compact signing and then obligates funds for the entire Compact when it enters into force. Disbursements are then made over the life of the Compact, which can last up to five years. Table 3.3 lists funds obligated by the MCC in 2005 and 2006.

Of the 11 Compacts signed to date, the Compacts in Armenia, Cape Verde, Ghana, and Mali[8] contain specific agricultural water projects, while the Compacts in El Salvador[8], Georgia, Ghana, Mali[8], Honduras, and Nicaragua include activities that allow for supplemental water projects in agriculture and additional commercial and community-based investments in water services. A program development grant for water and sanitation projects in Mozambique (see Box 3.4) was obligated in FY 2005 and executed in FY 2006.

[8] Signed in FY 2006, but money will be obligated in FY 2007.

Table 3.3: MCC Commitments for Water-Related Activities (Source: MCC)

Country	Activity	Amount	Total Compact or Grant
Armenia[a]	Irrigated Agriculture Project: Irrigation Activity	$146M	$235M
Cape Verde[a]	Watershed Management and Agricultural Support	$6.8M	$110M
Georgia[a,b]	Regional Infrastructure Development Fund	Up to $60.0M	$295M
Ghana[a,b]	Agriculture Project: Irrigation Activity	$27.6M	$547M
	Rural Development Project: Community Services Activity	Up to $75M	
Nicaragua[a]	Rural Business Development	$13.3M	$175M
	FY 2006 Sub-Total	**More than $193.7M**	
Honduras[a,b]	Rural Development: Agricultural Facility	Up to $8.0M	$215M
Mozambique	Water/Sanitation Program Development Grant	$3.1M	$3.1M
	FY 2005 Sub-Total	**More than $3.1M**	
	FY 2005 and 2006 Total	**More than $196.8M**	

[a] Compacts were obligated in the specified fiscal year but funds will be disbursed over the five-year Compact life.
[b] Compacts have maximum amounts under certain categories, but allow for flexibility and budget changes throughout the life of the Compact. Thus, in many cases, only maximum amounts can be listed. These amounts are not included in the final totals for each year.

3.4 Contributions to Intergovernmental Organizations

The United States is a member of, makes financial contributions to, and exercises leadership in seven multilateral development banks (MDBs) that support freshwater projects around the world. In 2006, the multilateral banks provided more than $4 billion in financing for water supply and sanitation, of which $1.8 billion came from the World Bank Group alone. MDB assistance in support of water projects, as a proportion of overall 2006 assistance, is shown in Box 3.5.

Box 3.5: Estimated Water-Related Financing from Multilateral Development Banks in FY 2006 (Source: U.S. Treasury Department)

Organization	Amount
World Bank Group	$1.8 billion
African Development Bank	$316 million
Asian Development Bank	$1.55 billion
Inter-American Development Bank	$370 million
NADBank	$62.4 million
European Bank for Reconstruction and Development	$47.9 million
TOTAL	**More than $4 billion**

The United States also contributes to the general budgets of a number of international organizations that support freshwater projects around the world, as well as water and sanitation services in the context of emergency relief. These include many UN agencies, such as UNICEF, the World Health Organization, UNESCO, the UN Development Program, the UN Environment Program, the Food and Agriculture Organization, the World Meteorological Organization, the UN High Commissioner for Refugees, and the UN Relief and Works Agency for Palestine Refugees in the Near East. Other international organizations providing support are the Inter-American Institute for Cooperation on Agriculture, Organization of American States, Organization for Economic Cooperation and Development, Pan American Health Organization,

Table 3.4: Estimated Financial Support for Selected International Organizations Fiscal Year 2005 [a] (Source: Department of State and USAID)

Organization	U.S. Contribution to Core Budget	Approximate % of Core Budget Spent on Water
UNICEF	$125.7M	9.37%
World Health Organization	$97.0M	1.9%
UNESCO	$6.0M	1.4%
UN Development Program	$108.9M	8.71%
World Meteorological Organization	$10.3M	5.0%
UN Environment Program	$5.8M	0.86%
Food and Agriculture Organization	$64.0M	0.731%
Global Environment Facility[b]	$79.2M	14%[b]
World Food Program[c]	$1,125.3M	13%[c]
UN High Commissioner for Refugees	$331.8M	Not known
International Committee of the Red Cross	$150.5M	Not known
UN Relief and Works Agency for Palestine Refugees in the Near East	$137.0M	Not known
International Organization for Migration	$29.2M	Not known
Total	**$1,604M[d]**	

[a] The U.S. does not fund water programs directly through their core contributions to these international organizations, although a percentage of this contribution is spent on water-related programs. These budget estimates may be supplemented by voluntary contributions from a range of U.S. agencies to carry out specific water-related interventions around the world.

[b] The GEF provides funding to a broad range of projects and activities aimed at protecting the health of international waters, including efforts aimed at reducing contamination of international water bodies, management of transboundary water bodies and groundwater resources, addressing water scarcity, and sustainable management of fisheries. The international waters program accounted for approximately 14% of total allocations over the four-year period 2003-2006.

[c] The World Food Program does not disaggregate between "Land or Water Development or Improvement." The percentage given is thus a maximum spent on water-related activities.

[d] About $37M of this amount is spent on water. This number is highly approximate, representing the total amount of U.S. contributions to core funds likely to go to water and sanitation projects from the selected international organizations. This number does not include the World Food Program, UN High Commissioner for Refugees, International Committee for the Red Cross, UN Relief and Works Agency for Palestine Refugees in the Near East, and the International Organization for Migration.

Ramsar Convention on Wetlands, World Conservation Union, International Committee of the Red Cross, International Organization for Migration, and other UN agencies. U.S. support is detailed in Table 3.4.

As an example of such support, the Department of State's Bureau of Population, Refugees, and Migration (PRM), primarily through its Migration and Refugee Assistance (MRA) and Emergency Refugee and Migration Assistance Fund (ERMA) accounts, funds international and civil society organizations to protect and provide humanitarian assistance to millions of refugees and conflict victims worldwide. In FY 06, over $790 million was spent for protection and

assistance in areas such as food, water and sanitation, shelter, health care, and education. Although funds are not specifically earmarked for water and sanitation, PRM's support allows partners to ensure that refugees and conflict victims have access to potable water, sanitation, and information on hygiene at levels that meet accepted international humanitarian standards. This includes not only planning and building wells, for example, but also providing security for those, such as women and children, who use those wells to bring water to their families.

Box 3.6: Funding for Emergency Assistance

Through the State Department Bureau of Population, Refugees, and Migration the U.S. Government provides funding for the International Committee of the Red Cross (ICRC) for humanitarian assistance, including setting up water points, digging wells, tapping springs, and building latrines and septic tanks. By adhering to its principles of neutrality and impartiality, the ICRC is able to obtain the security guarantees necessary to reach people requiring assistance in remote and /or inaccessible places, such as parts of Sudan, Chad, Sri Lanka, Iraq, the Palestinian territories, Nepal, Chechnya, and Colombia.

In 2006, ICRC provided water and sanitation for over 16 million people in 40 countries through 7,215,323 water and sanitations schemes (wells, boreholes, sewage systems) to beneficiaries worldwide, including refugees, internally displaced people, and detainees. ICRC trains people to take responsibility for water points and supports good local water management practices to ensure the sustainability of water and sanitation programs. ICRC is one of the few humanitarian organizations capable of restoring large-scale water infrastructure.

The U.S. government is the largest donor to the ICRC. In 2006, it gave $150,531,099 to ICRC for its humanitarian efforts.

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A young girl in Jumla, western Nepal, enjoys running water for the first time. ICRC has been providing assistance for the water and habitat infrastructure in 17 villages of Jumla district.

4. Emerging Issues

This chapter revisits the issues highlighted in the 2006 Report to Congress that represent considerable challenges to realizing the goals of the Water for the Poor Act. This report expands on three of the four issues discussed last year (climate variability, wastewater treatment, and urbanization) and raises one new area for consideration (land-based pollution and coastal issues). Singly and collectively, these issues undermine U.S. efforts to provide affordable and equitable access to safe water and sanitation in developing countries. Fortunately, considerable U.S. expertise can be effectively leveraged to provide solutions. Each issue is explored below by outlining first the problem, then the U.S. strategic interests and key challenges, and finally current and potential actions to address the issue.

4.1 Impacts of Climate Variability and Climate Change on the Water Sector

The Problem: On short time scales, climate variability and climate change[9] result in changes in the frequency and severity of droughts, floods, heat waves, and cyclones, which can lead to changes in availability and quantity of surface and groundwater, increased water stress, disruption of services, and changes in water-related and water-borne diseases. On longer time scales, climate change can lead to changes in snow and glacier runoff that feed water supplies and to increases in coastal flooding and saltwater intrusion. All of these changes will impact the economic and cultural systems that have developed in response to current climatic conditions.

U.S. Strategic Interests & Key Challenges: The impact of climate variability and climate change on water affects key U.S. international policies to aid in sustainable development, promote stable and democratic governments, protect public health, and satisfy the specific goal of this Act to ensure safe drinking water to the world's poor. The challenges for U.S. policies are as outlined:

Impacts on sustainable economic development: Economic growth strongly tracks seasonal and interannual rainfall variability, resulting in slow and halting development in countries or regions with high variability and insufficient existing institutional, technological or economic capacity to adapt. In some countries, droughts and flooding have been estimated to cause declines in gross domestic product (GDP) in excess of 10 percent. Floods followed immediately by drought, as has become a more entrenched characteristic of Eastern and Southern Africa's climate, further magnify food insecurity and the poverty trap. A few examples of how current climate variability affects sustainable development include:

- ***India*:** Increased variability in the summer monsoon, such as the weak 2002-2003 monsoon, caused steep declines in food production, impacting the rural poor the most. Loss of output value as low as 5 to 10 percent of normal yields can determine which side of the poverty line vulnerable populations will fall in rural India.

[9] Climate variability is a measure of the degree to which rainfall and temperature vary across seasonal, annual, interannual and even interdecadal time periods compared with a long-term regional climate mean. Climate change refers to long-term, sustained changes in the climate mean itself.

Table 4.1: The Impact of Flood and Drought in Kenya (Source: The World Bank, 2004)					
1997-98 El Niño Flood Impacts	**US$**	**%**	**1998-2000 La Niña Drought Impacts**	**US$**	**%**
Transport infrastructure	$777M	88%	Hydropower losses	$640M	26%
Water supply infrastructure	$45M	5%	Industrial production losses	$1,400M	58%
Health sector impacts	$56M	6%	Agricultural production losses	$240M	10%
			Livestock losses	$137M	6%
Total flood impacts	**$878M**		**Total drought impacts**	**$2,417M**	
Flood impacts as % of GDP		**11%**	**Drought impacts as % of GDP**		**16%**

- ***Kenya*:** The floods of 1997-98 severely impacted transportation infrastructure, water supply and the health sector while the droughts of 1998-2000 resulted in large losses in hydropower output, industrial capacity, agricultural production, and livestock. These two events are estimated to have reduced Kenya's annual GDP by 11 percent and 16 percent, respectively.[10, 11] (See Table 4.1.)
- ***Ethiopia***: High interannual rainfall variability is estimated to cost this country more than one-third of its average annual growth potential.[12]

Undermining peace and security and exacerbating conflict: The economic shocks resulting from drought can trigger inter-group conflicts, such as between farmers and herders, or exacerbate existing ethnic tensions that spill over into conflict.[13] Chronic conflict in the Greater Horn region of Africa, which experiences cycles of extreme drought and flood, stymies efforts to improve livelihoods.

Significant impacts on human health: Small increases in temperature or variability in rainfall can have measurable impacts on the extent of water-borne or water-related diseases such as malaria and diarrhea.[14] For example, cholera epidemics can increase, droughts and floods cause the breakdown of sanitation and hygiene, and crop failure leads to large movements of people resulting in waterborne disease epidemics.

Specific Impact on the Poor: Poor communities can be especially vulnerable to climate impacts in the water sector, as they have fewer resources for adaptation and tend to be more dependent on water-related resources. By the year 2020, 75-250 million people are expected to be under increased water stress due to long-term climate shifts and population growth, with yields from rain-fed agriculture reduced by up to 50 percent.[15] Glacier melt in the Himalayas may lead to increased flooding in the short term and reduced water supply in the long term. Reduced freshwater availability in Asia could affect more than one billion people by the mid-century, and

[10] D. Grey and C. Sadoff. 2006. Water for growth and development. World Bank Thematic Document Framework, Theme 1. 4th World Water Forum.
[11] H. Mogaka, S. Gichere, R. Davis, and R. Hirji. 2005. Climate variability and water resources degradation in Kenya. Improving water resources development and management. World Bank Working Paper 69.
[12] D. Grey and C. Sadoff. 2006. Water for growth and development. World Bank Thematic Document Framework, Theme 1. 4th World Water Forum.
[13] M. Levy, C. Thorkelson, C. Vorosmarty, E. Doughlas, and M. Humphreys. 2005. Freshwater availability anomalies and outbreak of internal water: Results from a global spatial time series analysis. Human Security and Climate Change: An International Workshop. Oslo, Norway. 1-25.
[14] A. Haines, R. S. Kovats, D. Campbell-Lendrum, and C. Corvalan. 2006. Climate change and human health: Impacts, vulnerability and public health. Public Health 120: 585-596.
[15] Intergovernmental Panel on Climate Change. 2007. Working Group II Report: Impacts, Adaptation, and Vulnerability.

increased floods and changes in coastal water temperatures could result in greater morbidity and mortality due to diarrheal disease.[16] In Latin America, changes in precipitation and disappearance of glaciers could result in significant changes in water availability.

Current and Potential Action: USAID, in cooperation with agencies such as the National Oceanic and Atmospheric Administration and the U.S. Geological Survey, is already working to implement adaptation to climate variability and climate change into its programs. Key interventions include:

- Strengthening capacity to use short-term weather predictions (three to six months), especially in vulnerable areas;
- Using long-term predictions as input to planning for water supply systems, especially in high population areas and choosing priority areas for health and behavior change interventions;
- Improving earth observation systems for forecasting, monitoring and prediction of weather, climate, water quality, floods and droughts;
- Implementation of the Famine Early Warning System Network (FEWS) in Africa, a collaboration of USAID, NASA, NOAA, and USGS that combines data from satellite observations with local meteorological, hydrological, crop and livelihood information to provide decision makers with early warnings of food security risks;
- Providing hydrometeorological data to remote areas in developing countries to improve agricultural productivity, water resource management, resilience to disasters, etc.; and
- Developing, testing and disseminating methodologies for integrating adaptation into development planning, and facilitating incorporation of adaptation into national and local planning through training and capacity building.

4.2 The "Wastewater Gap"

The Problem: While more than 1.2 billion people do not have access to an improved water supply and more that 2.4 billion people lack access to basic sanitation, figures provided by the United Nations Environmental Program and other international organizations show that more than 4 billion people have no sewers and no treatment of household wastewater before it is discharged into surface waters and/or groundwater aquifers. Each litre of untreated wastewater is estimated to pollute at least eight litres of freshwater, with about 12,000 km^3 of global water resources polluted each year. With population growth projected to reach nine billion people, this figure could increase to 18,000 km^3 by 2050. The global burden of human disease caused by sewage pollution of coastal waters has been estimated at four million lost person-years annually. Untreated sewage affects over 70 percent of coral reefs and other coastal habitats, resulting in loss of biodiversity and fishing and agricultural potential and reduced income from tourism and value of real estate.

U.S. Strategic Interests: The increasingly rapid growth of untreated municipal wastewater discharge into rivers, lakes, inland and coastal groundwater aquifers, and coastal waters around the world threatens the quality of the drinking water supply, public health, the environment and economic development. These impacts directly counteract U.S. efforts in developing countries to provide safe drinking water and other development assistance.

[16] Ibid.

Key Challenges: The key challenge is the high cost of wastewater treatment. An additional estimated $56 billion (four times what is currently being invested) is needed annually to meet the Millennium Development targets for sanitation, if wastewater treatment is included.[17] Business models and financing strategies that promote the development of viable and functioning wastewater utilities are poorly understood and rarely used in developing countries.

Current and Potential Actions: The U.S. has relevant domestic experience in using innovative financing initiatives to mobilize private capital for investment in municipal water supply and wastewater infrastructure that could be more effectively shared abroad. For example, the State Department, USAID, and the U.S. Environmental Protection Agency (EPA) have been promoting the use of revolving fund approaches that were initially developed at the U.S. state level during the 1980s, and which continue to operate today. USAID is also currently engaged in promoting a wide range of other water supply utility reform and innovative financing initiatives (e.g., development credit loan guarantees, pooled financing, municipal bonds, operating contracts, utility and municipal governance reforms, anti-corruption measures, utility corporatization). To date, these efforts have been focused on water supply, but they can be easily adapted to include wastewater treatment.

USAID is presently planning an analysis of successful wastewater utilities in developing countries to help develop guidelines for utility reforms. These cases will include the economic and environmental regulatory climate, the selection of appropriate technology to reduce capital and operating and maintenance costs, innovative financing, and other business models that support operationally and financially sustainable wastewater utilities in developing countries.

Active participation by USG agencies in meetings and events leading up to the UN's "International Year of Sanitation" in 2008 can also draw international attention to the wastewater treatment aspect of sanitation. State, USAID, and the EPA can also work with the National Academies and National Science Foundation to carry out studies to estimate the economic, public health, and ecosystem costs of not treating wastewater. Such information can provide the impetus for addressing the growing problem of untreated municipal wastewater generation and discharge in developing countries.

4.3 Land-Based Sources of Pollution and Coastal Issues

The Problem: Land-based sources of pollution account for over 80 percent of marine pollution, impacting the health of costal and marine environments. At least 38 percent of the global population resides in coastal areas that comprise only 7.6 percent of the earth's total land area. These populations put increasing pressure on those very coastal and marine ecosystem resources on which they depend for their livelihoods, food security, and other goods and services. Ocean circulation makes this pollution an international problem.

The range of pollutants includes persistent organic pollutants, radioactive substances, heavy metals, excess nutrients (fertilizers, nitrogenous compounds, etc.), halogenated hydrocarbons (pesticide, PCBs, dioxins, etc), litter, or simply excessive amounts of sediment. These toxic

[17] UNEP Report. 2004. "Financing wastewater collection and treatment in relation to the Millennium Development Goals and World Summit on Sustainable Development targets on water and sanitation"

substances pose direct health risks to humans and animals alike, particularly due to accumulation in body tissues. Excessive nutrients from agricultural runoff have led to increased incidences of oxygen depletion in coastal waters, resulting in fish and invertebrate die-offs, as well as more frequent occurrences of harmful algal blooms. The continual reduction and modification of water flows also result in diminished capacity for coastal ecosystems to sustain their productivity.

U.S. Strategic Interests: The health and well-being of coastal populations world-wide are intimately linked to the quality of the coastal marine environment. In 2005, the gross domestic product of all coastal counties in all sectors in the U.S. totaled over $10 trillion.[18] By 2020, developing countries will account for nearly 80 percent of total fish production, and almost 95 percent of the total number of fishermen. Therefore, protection of coastal areas from land-based pollution and from reduction of freshwater input into rivers and streams is critical to economic growth. In addition, the services provided by coastal ecosystems are especially vital for the welfare of the poor in developing countries.

Key Challenges: The challenges to effective ecosystem management for integrating resource management at the watershed or landscape scale lie in the development of: (1) effective communication and collaboration between agencies or ministries that do not historically work with each other; (2) adequate valuation and accounting of ecosystem services, particularly in upstream regions that do not feel the immediate effects of poor management decisions; and (3) raising global awareness that healthy ecosystems are as critical a part of sustainable solutions to growing water demand as are the pumps and piped networks that bring the water.

Current and Potential Action: The United States is a leader in advocating an ecosystem approach to the management of natural resources via bilateral assistance and cooperation and through intergovernmental organizations. In order to manage these resources comprehensively, the United States promotes programs that link land-based activities with their resulting impacts on waterways and coastal environments. Moreover these same programs recognize the scientific connections between the investment in freshwater and the returns to healthy populations and coastal environments.

The Global Program of Action for the Protection of the Marine Environment from Land-Based Activities (GPA), administered by the United Nations Environment Program, is a bold plan of action to protect the world's marine environment from land-based sources of pollution. At the recent GPA Intergovernmental Review Meeting in China in 2006, over 100 participating countries, including the United States, recommitted to meeting the goals of the GPA. Both the GPA and other international efforts such as the Land Based Sources Protocol recognize that more emphasis must be placed on action at the national level, where implementation may face limited capacity and funding.

USAID is committed to assisting developing countries by investing in the infrastructure, technical capacity, and, most importantly, the governance processes that are needed to proactively reduce marine pollution and other "costs" of development. Although each country has different challenges, minimizing the environmental costs of development requires diligent attention to the appropriate policy framework, laws, institutions, budgets, technical capacity, and decision-making processes. USAID's programs in wastewater and watershed management,

[18] National Ocean Economics Program, http://noep.mbari.org/Market/coastal/coastalEcon.asp.

coastal resources, clean production and pollution control, and agriculture and aquaculture have benefited countries in every region of the world.

One such program, the U.S.-initiated White Water to Blue Water, is an international alliance of governments, international organizations, financial institutions, non-governmental organizations, universities, and corporations striving to stimulate partnerships that will improve integrated watershed and marine ecosystem-based management. It promotes regional cooperation and strengthens developing country capacity to address land-based sources of marine pollution; foster sustainable fisheries, agricultural, and forestry practices; meet challenges associated with tourism; and prevent environmental problems associated with shipping and transport.

4.4 Urban Water Supply

The Problem: In 2007, the world entered the "urban millennium," with over half of the world's population now living in cities. Also in 2007, the global number of slum dwellers crossed the one billion mark. About one in every three city-dwellers now lives in inadequate housing with little or no basic services, such as adequate water supply. An estimated 800 million urban residents lack the sustainable access to safe drinking water prioritized by the Millennium Development Goals – one-quarter of the urban population in Latin America and up to half in Africa and Asia.[19] Given that 90 percent of population growth in the coming two decades will occur in these developing regions (see Figure 4.1), these water supply shortfalls threaten to grow rapidly, along with the associated detrimental health impacts especially among children, subsequently affecting education achievement, labor productivity, and economic growth.

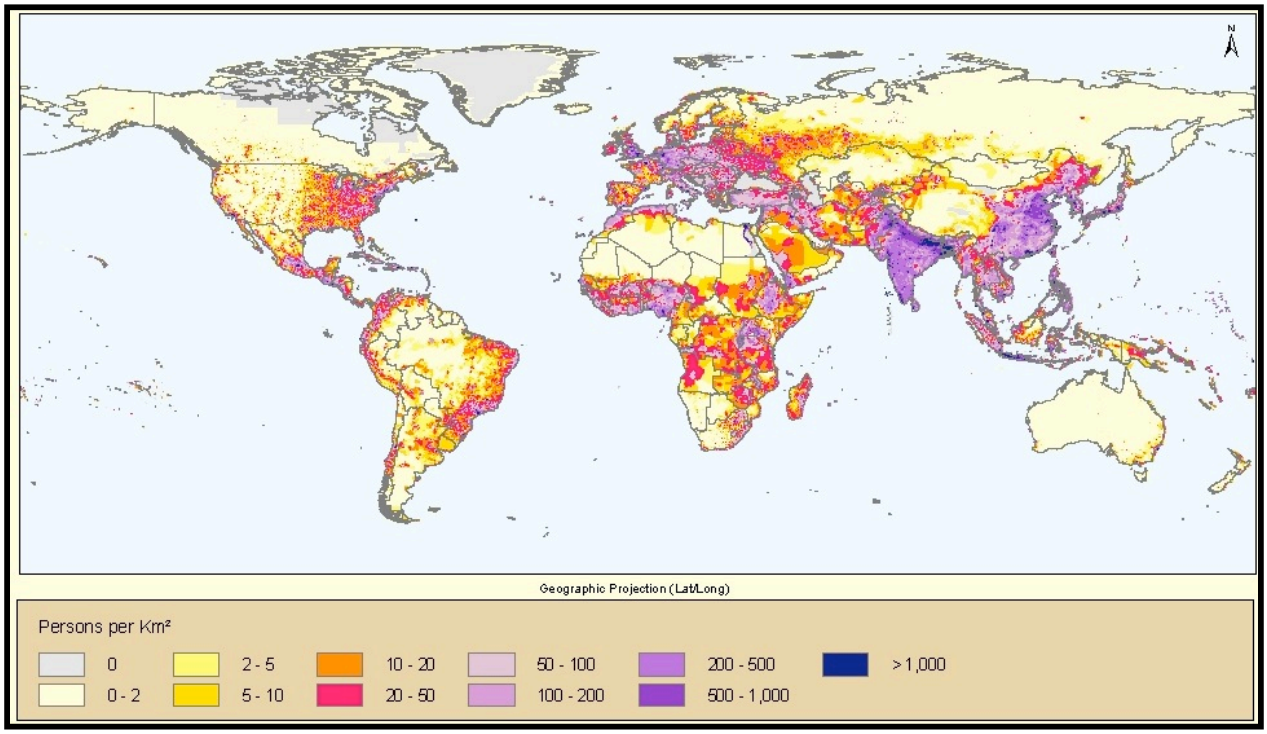
U.S. Strategic Interests: For urban communities struggling with population increase, development needs, and political instability, inadequate or unevenly distributed water service can dangerously heighten social tensions, especially in post-conflict and transitional settings. Help is desperately needed for cities like Port-au-Prince, Haiti, which is struggling to keep criminal gangs from monopolizing city water taps and for governments trying to maintain fragile peace in their refugee-burdened urban centers, like those in Liberia and South Sudan.

Key Challenges: While major investments are required to improve current urban water supply infrastructure and services and meet demands from growing populations, many experts agree that the barriers to improved provision are not financial or technical but rather institutional and political. Water service providers must work more efficiently to manage and operate supply infrastructure, especially to attract private capital investment. Local governments must commit to ensuring equitable and sustainable service to all city residents, particularly the poor and others living in "informal" settlements. At the same time, national governments and donors must find innovative ways to support these actions.

Current and Potential Action: The USG is already contributing toward this agenda in valuable ways. Over the past decade, USAID programs have developed best practices and US-based expertise for supporting: improved urban water utility management, expanded access to public and private infrastructure finance, public-private water supply partnerships, and local government capacity building. There are good examples of countries where these efforts are

[19] UN-Habitat. 2003. *Water and Sanitation in the World's Cities.*

Figure 4.1: Global Population Density Projected for 2015 (Source: Poverty Mapping Urban Rural Population Database, United Nations Food and Agricultural Organization, 2005)



generating results, and mechanisms are in place to expand these efforts. However, USG development assistance has to prioritize urban water supply in more countries.

More USG resources should be targeted at:

- Establishing pilot-scale programs supporting water supply improvements in post-conflict settings;
- Addressing urban supply challenges, especially in Africa;
- Strengthening municipal government activities to focus more resources on expanding and improving urban water supply services, especially to the urban poor; and
- Expanding support for water utility sector reform activities, especially in countries that that are using Millennium Challenge Corporation funds for water infrastructure development).

5. Conclusion

Since the 2006 Report to Congress, the U.S. has assessed country conditions in over 60 countries and consulted with local government officials, other development agencies, civil society groups, foundations, and the private sector on the U.S. role in the water sector. The U.S. government has also spearheaded international efforts to continue to rationalize indicators for a range of water-related projects and programs and developed region-specific strategies. Lastly, it has increased its aid devoted to water and sanitation issues in some of the hardest-hit areas of the world, such as sub-Saharan Africa.

As we move forward from the 2007 Report to Congress, the U.S. government will:

- Continue to integrate water-related issues into the new development assistance framework;
- Plan outreach meetings to consult with a wide range of stakeholders on specific areas of the report;
- Increase efforts to share best practices from around the world in order to promote the most effective interventions in our own work and that of our partners; and
- Work with local governments on a case-by-case basis to encourage them to prioritize access to water and sanitation and related water issues.

We look forward to continuing to interact with our many partners on these very important issues.

Annex: USAID Funding for Water[20]

A.1 USAID Water Obligations for FY 2002-2006

This includes obligations related to the Water for the Poor Initiative as well as other activities related to disaster preparedness.

Table A.1: Estimated USAID Water Obligations Fiscal Years (FY) 2002-2006 (Source: USAID)
(Dollars in Millions)

	Fiscal Year				
Estimated USAID Water Obligations	**2002**	**2003**	**2004**	**2005**	**2006**
Water Supply, Sanitation and Wastewater Management	$215.343	$374.310	$585.591	$279.515	$288.554
Watershed Management	133.399	109.400	82.471	67.359	53.592
Water Productivity	61.880	115.636	96.018	47.020	22.495
Disaster Preparedness	31.932	20.597	9.996	6.755	5.842
Total	$442.554	$619.943	$774.076	$400.649	$370.374

[20] Souce: USAID.

A.2 USAID Water Obligations for FY 2006

Table A.2: Estimated Actual USAID Obligations in FY 2006 for Water Supply Projects and Related Activities by Country & Region (Dollars in Millions)

Region/Bureau	Country or Operating Unit	Water Supply[a]	Sanitation[a]	OFDA Water & Sanitation[b]	Grand Total
Africa	Burundi	0.138	0.087		0.225
	Central African Republic			0.050	0.050
	Chad			0.539	0.539
	Congo Dr			0.976	0.976
	Eritrea			0.900	0.900
	Ethiopia	0.907	0.443	6.050	7.400
	Ghana	0.935	0.505		1.440
	Kenya	4.000		4.276	8.276
	Liberia			0.386	0.386
	Madagascar	0.420	0.377		0.797
	Mozambique	0.350		0.402	0.752
	Sao Tome & Principe			0.013	0.013
	Senegal			0.050	0.050
	Somalia	1.250	1.250	2.946	5.446
	South Africa	0.375	0.375		0.750
	Sudan			37.378	37.378
	Uganda	1.075	0.075	5.772	6.922
	Zambia	0.400	0.400		0.800
	RCSA	0.100			0.100
	WARP	1.715	1.714		3.429
	Africa Regional Bureau	4.420	1.119		5.539
	AFR Total	**15.710**	**5.970**	**59.738**	**81.148**
Asia and the Near East	Afghanistan	0.444	0.444		0.887
	Bangladesh	0.850	0.750		1.600
	Egypt	13.550			13.550
	India	1.450	1.145		2.595
	Indonesia	4.784	2.634	0.998	8.416
	Iraq[c]			0.780	0.780
	Jordan	26.500			26.500
	Lebanon	2.500	2.500	13.403	18.403
	Maldives	1.900	0.050		1.950
	Nepal			0.225	0.225
	Pakistan	5.550		7.120	12.670
	Philippines	1.707	0.610	0.018	2.335
	Sri Lanka			0.400	0.400
	RDM/A	2.105	1.133		3.238
	ANE Regional	0.400	0.400	1.100	1.900
	ANE Total	**61.740**	**9.666**	**24.044**	**95.450**

[a] Included in these totals is money spent under the following accounts: Child Survival and Health, Development Assistance, Economic Support Fund, P.L. 480 Title II (food aid), Andean Counterdrug Initiative, FREEDOM Support Act, and Assistance for Eastern Europe and the Baltic States. For more information on each account, please see the 2006 Report to Congress.

[b] Included in these totals is money spent under the International Disaster and Famine Assistance account.

[c] Excludes $23.5 million from the Iraq Relief and Reconstruction Fund (IRRF) supplement for drinking water supply.

Table A.2 (cont.): Estimated Actual USAID Obligations in FY 2006 for Water Supply Projects and Related Activities by Country & Region (Dollars in Millions)

Region/Bureau	Country or Operating Unit	Water Supply	Sanitation	OFDA Water & Sanitation	Grand Total
Europe and Eurasia	Armenia	1.148	2.516		3.664
	Azerbaijan	0.073			0.073
	Georgia	0.163			0.163
	Kosovo	0.412			0.412
	Kyrgyzstan	0.080	0.002		0.082
	Macedonia	0.330	0.110		0.440
	Moldova	0.416	0.075		0.491
	Romania	0.413	0.413	0.233	1.059
	Tajikistan	0.156	0.100		0.256
	Turkmenistan		0.050		0.050
	E&E Total	**3.191**	**3.266**	**0.233**	**6.690**
Latin America and the Caribbean	Bolivia	0.620	1.030		1.650
	Colombia	0.217	0.630		0.847
	Dominican Republic	0.151			0.151
	Ecuador	3.965	1.956		5.921
	El Salvador			0.100	0.100
	Guatemala	0.440	0.520	1.862	2.822
	Honduras	0.250			0.250
	Jamaica	0.035			0.035
	Mexico	0.150			0.150
	Nicaragua	0.103	0.034	0.067	0.204
	Paraguay	0.021	0.014		0.035
	Peru	0.766	0.761		1.527
	Surinam			0.045	0.045
	LAC Total	**6.718**	**4.945**	**2.074**	**13.737**
Central Programs	EGAT	0.198	0.198		0.396
	Global Development Alliances	0.455	0.454		0.909
	Global Health	3.140	1.090		4.230
	Central Programs Total	**3.793**	**1.742**		**5.535**
Total Directive – All Regions		**$90.890**	**$25.450**	**$86.089**	**$202.830**
Grand Total – Including Supplementals & Wastewater Management					**$288.554**

Table A.3: Estimated Actual USAID Obligations in FY 2006 for Supporting Watershed Management & Water Productivity by Country & Region (Dollars in Millions)

Region/Bureau	Country or Operating Unit	Watershed Management & IWRM	Water Productivity	Grand Total
Africa	Burundi	$0.012	$0.100	$0.112
	Ethiopia	0.215	2.357	2.572
	Malawi		0.662	0.662
	Mali		1.500	1.500
	Uganda	0.300	0.500	0.800
	RCSA	2.000		2.000
	Africa Regional Bureau	1.700		1.700
	AFR Total	**4.227**	**5.119**	**9.346**
Asia & Near East	Bangladesh	0.834	0.629	1.046
	Egypt	6.700		4.050
	India	1.100	0.586	
	Indonesia	3.949		3.949
	Jordan	11.000	2.400	12.900
	Lebanon	8.100		4.100
	Pakistan		0.220	0.220
	Philippines	3.471	0.300	3.771
	ANE Total	**35.154**	**4.135**	**39.289**
Europe & Eurasia	Armenia		0.200	0.200
	Croatia		0.100	0.100
	Georgia	0.350	0.809	1.159
	Kazakhstan		0.200	0.200
	Kyrgyzstan		0.756	0.756
	Macedonia		0.040	0.040
	Moldova		0.076	0.076
	Romania	0.450		0.450
	Tajikistan	0.028	1.156	1.184
	Turkmenistan		0.220	0.220
	Uzbekistan		0.030	0.030
	E&E Total	**0.937**	**3.478**	**4.415**
Latin America & the Caribbean	Bolivia	2.210	0.320	2.530
	Dominican Republic	0.232		0.232
	Ecuador	0.341	0.201	0.542
	El Salvador	1.212	0.173	1.385
	Haiti		4.000	4.000
	Honduras	2.500	0.630	3.130
	Jamaica	0.615	0.450	1.165
	Mexico	2.100		2.100
	Nicaragua		0.010	0.010
	Panama	2.279		2.244
	Paraguay	0.080		0.080
	Central America Regional	1.705		1.705
	LAC Total	**13.274**	**5.784**	**19.058**
Central Programs	EGAT/Agriculture		3.870	
	Central Programs Total		**3.870**	**3.870**
Grand Total		**$53.592**	**$22.386**	**$75.978**

Table A.4: Estimated FY 2006 USAID Water Obligations for Disaster Preparedness by Country, Region, & Reporting Category (Dollars in Millions)

Region/Bureau	Country or Operating Unit	Forecasting & Monitoring	Vulnerability Assessment	Grand Total
Europe & Eurasia	Kyrgyzstan	0.200		0.200
	Romania	0.100		0.100
	E&E Total	**0.300**		**0.300**
Latin America & the Caribbean	Honduras	0.100	0.124	0.224
	Jamaica		0.050	0.050
	LAC Total	**0.100**	**0.174**	**0.274**
Central Programs	OFDA	2.413	2.855	5.268
	Central Programs Total	**2.413**	**2.855**	**5.268**
Grand Total		**2.813**	**3.029**	**5.842**