

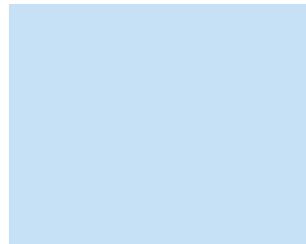
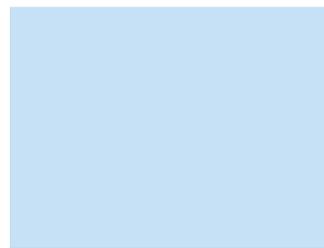
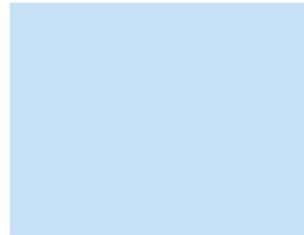


FY 2003

USAID's Water Portfolio

Promoting Clean Water and Efficient Use of Freshwater and Coastal Resources

A Report to Congress
Prepared by the USAID Water Team
July 2003





The USAID Water Team promotes integrated water and coastal resources management and supports environmentally sound, cross-sectoral approaches to managing, conserving, and sustainably using freshwater and coastal resources. These involve participatory processes that include women, the poor, and marginalized groups; prioritizing and planning for water demand; and strengthening institutional capacity in water resources management.



Promoting Clean Water and Efficient Use of Freshwater and Coastal Resources

Overview

Worldwide, a huge commitment of additional resources is necessary to ensure that even the most basic needs for water are met in the coming decades – for people, food, economic growth, and the protection of vital ecosystems. USAID contributes substantially to these needs with activities in over 66 countries¹ and by providing international leadership in advancing a holistic approach to water resources management (Figure 1). Historically, USAID has directed significant resources towards various aspects of water management, reaching a total of at least \$11 billion over the last 30 years, and well over \$350 million annually in recent years. Through the Presidential Water for the Poor Initiative announced at the World Summit on Sustainable Development (WSSD) in Johannesburg last August, 2002, USAID will invest \$970 million over three years (2003-2005) to improve sustainable water resources management (Box 1), an amount estimated to mobilize an additional \$630 million in global capital.

The USAID obligation figures compare with World Water Council estimates that \$70-80 billion (excluding direct investment by industry) is currently invested each year to provide water services. The World Bank estimates that an additional \$60-80 billion per year over today's spending levels is needed to provide basic water supply and sanitation for the world's population. The Global Water Partnership calls for investments of an additional \$180 billion per year to achieve global water security in the broadest sense.

In FY 2003 alone, USAID plans to obligate over \$463 million. This report describes the many valuable investments being made throughout the world to improve access to safe and adequate water supply and sanitation, improve irrigation technology and management, enhance natural ecosystem function and develop better institutional capacity for resource management.

The Importance of Improved Water Resources Management for Sustainable Development

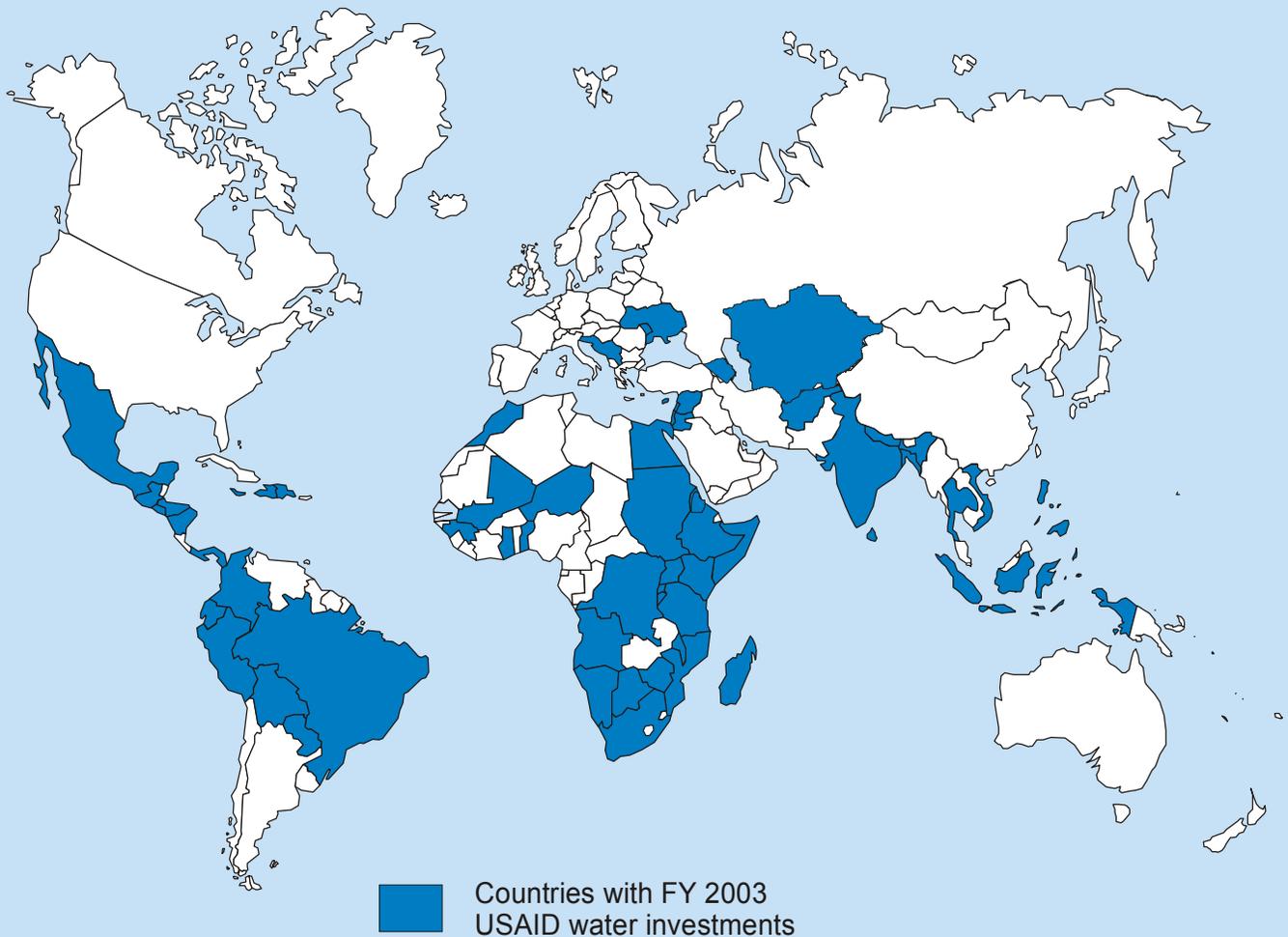
Although we have a water-rich planet, the amount of freshwater directly available for human use represents only 0.01% of all the moisture in the Earth's hydrological system. Further, this water is not evenly distributed in space or time, or necessarily located where the largest concentrations of people reside. Specific regions are plagued either with problems of freshwater scarcity and drought or oversupply and flooding. In fact, 450 million people in 31 countries already face serious shortages of freshwater. By the year 2025, 2.8 billion people in 48 countries (one-third of the world's population) are expected to face severe and chronic water shortages. Exacerbating the problem, the planet's limited freshwater resources are often contaminated by human activity and



Today, nearly one-third of the world's population lives with chronic shortages of water that directly threaten human health, agriculture, and economic development.

¹ The 66 countries are listed in Table 1. A further 15 African countries (Burkina Faso, Cameroon, Cape Verde, Chad, Cote d'Ivoire, The Gambia, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo) may have water-related activities within broader regional programs.

Figure 1. Map of USAID FY 2003 Water Obligations Worldwide (\$463 million total)



made unavailable for further use by people, or for the maintenance of healthy ecosystems. Furthermore, strategic groundwater resources are presently being pumped at unsustainable rates in many countries worldwide.

At the other extreme of water availability, countless people have been affected and billions of dollars worth of property damage have been caused by storms and flooding in recent years in the developing countries of the world. In 1998 alone, an estimated 32,000 people were killed worldwide and another 300 million were displaced from their homes because of severe weather events.

Finally, while freshwater is certainly of great concern, in fact most of the water on earth resides in the seas and oceans. These resources are also under threat, not from scarcity, but from the impact of a broad range of human activities. Coastal



More than 75 percent of future urban growth is expected to occur in already over-crowded slums, thereby putting even more pressure on already scarce clean water resources in poor areas.

Box 1. The Water for the Poor Presidential Initiative

The United States announced an initiative to improve sustainable management of water resources at the World Summit on Sustainable Development (WSSD) in Johannesburg last August, 2002. It will accelerate and expand international efforts to achieve the UN Millennium Development Goals and implement the Johannesburg Plan of Implementation including halving, by 2015, “the proportion of people who are unable to reach or afford safe drinking water,” and the “the proportion of people without access to basic sanitation.” Through USAID, the U.S. will invest \$970 million over three years (2003-2005). It is anticipated that these investments will mobilize an additional \$630 million for a total amount of more than \$1.6 billion for water-related activities over three years.

Results to date have proven the effectiveness of the interventions undertaken by the initiative, and underscore the commitment of the United States in working with other government and non-governmental partners in three key areas:

- Access to clean water and sanitation services (\$510 million);
- Improved watershed management (\$400 million); and
- Increasing the productivity of water (\$60 million).

systems are particularly vulnerable to degradation from land-based activities, climate change, impacts on living resources, and altered freshwater flows. More than half of the world’s population lives and works in the coastal zone.

USAID’s Response to the Global Water Crisis

USAID understands the importance of water to all sectors of development. All major goal areas of the Agency’s operative framework are supported by a sound approach to water resources management, including: achieving broad-based economic growth, promoting sustainable agriculture, building sustainable democracies, developing human capacity, improving human health, protecting the environment and providing humanitarian assistance in response to natural or human caused disasters (Box 2).

USAID’s water resources management programs and activities are best described in terms of four broad activity areas: 1) **Water Supply, Sanitation, and Wastewater Management (WSSWM)**; 2) **Natural Resources Management**; 3) **Economic Growth and Food Security**; and 4) **Disaster Preparedness**. The largest proportion of funding is for the **Water Supply, Sanitation, and Wastewater Management** activity area (\$310 million), with 67% of all obligations planned (Figure 2). This is followed by **Natural Resources Management** (\$84 million), **Economic Growth and Food Security** (\$52 million), and **Disaster Preparedness** (\$17 million). Embedded within the four broad activity areas are thirteen specific sub-categories of activities that will be discussed throughout this report for different regions of the world (Table 1).

Water Supply, Sanitation, and Wastewater Management activities address the need for clean, adequate water supplies for drinking and to maintain proper hygiene. This broad activity area also involves the handling, treatment and disposal of domestic and

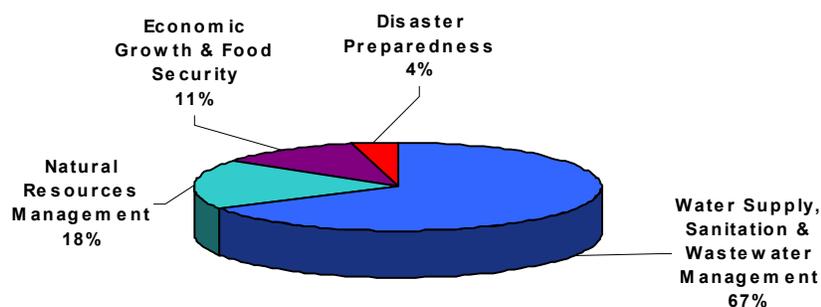


Figure 2. FY 2003 USAID Water Obligations by Sub-categories of Activities

Box 2. All Aspects of USAID's General Development Goals Are Enhanced by Sustainable Water Resources Management Practices

Water resources management plays a significant part in achieving all of the following USAID development goals.

Broad-based economic growth and agricultural development encouraged

The majority of people in the poorest countries derive their livelihoods from agriculture, a sector that currently consumes more than 70% of available global water resources. Broad-based, equitable economic growth is the most effective means of bringing poor, disadvantaged and marginalized groups into the mainstream of an expanding economy. To meet this goal USAID encourages more rapid and enhanced agricultural development and food security, often involving improved irrigation or water conservation activities. In other areas of economic growth, including the industrial and service sectors, a reliable, high quality source of freshwater is required. Effective management of water pollution from these sources, and water wastage in these activities have direct and significant economic implications as well.

Democracy and good governance strengthened

Broad-based participation and democratic processes are integral elements of sustainable development: They encourage individuals and societies to take responsibility for their own progress, and ensure open and transparent access to and use of information, as well as foster citizen participation in the policy-making process. These approaches help ensure fairer uses of shared resources and more equitable access to water resources, taking into account the needs and concerns of local communities in the allocation and payment for water services (including those provided by aquatic ecosystems). To achieve the broad goals of democracy, USAID supports the development of more transparent and accountable government institutions and local level management of community services for water supply and sanitation, wastewater treatment facilities, and irrigation infrastructure. USAID also promotes equitable access to water resources and full participation in decision-making by both men and women.

Human capacity built through education and training

The development of human capacity enables people to participate effectively in matters affecting their lives. Increasing human capacity through education, training and improved access to information is essential for sustained social and economic progress in all aspects of water resources management. In addition, expanded and improved capacity building in water supply and sanitation hygiene for girls and women contributes to improved family health and household economies, and the enhanced status of women. USAID also supports the application of research and technology derived from U.S. institutions to sustainable development programs, particularly in the areas of flood forecast technology, aquaculture, agriculture and irrigation. These often include a substantial training and capacity building component.

World population stabilized and human health protected

Healthy families are essential to sustainable development. When people are nourished and free from the ravages of infectious diseases, they can contribute more fully to their own social and economic progress and to that of their nations. An estimated 3-4 million people die each year of water-related disease. Given that most of these cases could have been prevented by improved water supply, sanitation and hygiene, the importance of sustainable water resources management to USAID's health portfolio becomes clear. The improved health status of women and girls also plays a critical role in child survival, family welfare, economic productivity and population stabilization.

The world's environment protected for long-term sustainability

Environmental degradation threatens human health, undermines long-term economic growth and impairs critical ecological systems upon which sustainable development depends. Addressing environmental issues in water resources management builds public/private sector partnerships; increases public awareness through education and training; crosses gender, cultural and class lines; stretches across the political spectrum; and strengthens civil societies. The loss of biodiversity, spread of pollutants, use of toxic chemicals, and the decline of fish stocks in the oceans can lead to instability and conflict, which may become serious and direct threats to global security interests. Therefore careful management of water resources is essential if investments in development are to yield sustainable benefits.

Lives saved, suffering associated with natural or man-made disasters reduced, and conditions necessary for political and/or economic development re-established

Crises, whether natural or man-made, destroy the resources individuals, families or nations might otherwise commit to social and economic progress. Natural disasters usually have their greatest impact on the poor, women and children. Adoption of adaptation measures such as hydrological and water quality monitoring, and sound construction of water delivery facilities in disaster-prone areas can help save lives and property loss.

Table 1. FY 2003 USAID Water Obligations Across Six Regions by Sub-categories of Activities
(Reported in Millions of USD)

Activities	Africa	Asia & Near East ^a	Egypt, Jordan & West Bank/ Gaza	Europe & Eurasia	Latin America & Caribbean	Central Programs	TOTAL
Water Supply, Sanitation & Wastewater Management	8.551	26.209	206.347	12.167	30.342	26.045	309.661
Water Supply	5.434	11.012	180.920	7.819	13.817	17.301	236.303
Sanitation	2.767	4.750	7.714	1.925	12.158	8.682	37.996
Wastewater Management	0.350	7.891	17.713	2.343	2.336	0.062	30.695
Industrial Pollution Control	0.000	2.556	0.000	0.080	2.031	0.000	4.667
Natural Resources Management	7.133	20.471	23.741	5.019	24.777	2.684	83.825
IWRM & Watershed Protection	5.468	14.871	13.741	5.019	16.594	1.451	57.144
Coastal Zone Management	1.275	5.600	10.000	0.000	7.525	0.833	25.233
Freshwater Ecosystems Management	0.390	0.000	0.000	0.000	0.658	0.400	1.448
Economic Growth & Food Security	7.656	14.249	2.000	7.116	18.097	3.325	52.443
Irrigation & Agriculture	7.471	9.249	2.000	5.260	15.686	0.500	40.166
Fisheries & Aquaculture	0.185	2.800	0.000	0.300	2.100	2.825	8.210
Hydropower (Small Scale)	0.000	2.200	0.000	1.556	0.311	0.000	4.067
Disaster Preparedness	6.371	6.600	0.000	0.700	0.000	3.572	17.243
Forecasting & Monitoring	3.502	0.200	0.000	0.700	0.000	3.572	7.974
Vulnerability Assessment	2.869	6.400	0.000	0.000	0.000	0.000	9.269
TOTAL	29.711	67.529	232.088^b	25.002	73.216	35.626	463.172

^aExcludes Egypt, Jordan, and West Bank/Gaza

^bIncludes \$17 million for Egypt and \$157 million for West Bank/Gaza in prior year carryover funds to be obligated in FY 2003

industrial wastes to prevent water-related diseases and protect water quality, thereby safeguarding human and ecological health. USAID plans to invest \$310 million in 50 countries for improved water supply, sanitation, and wastewater management; industrial pollution control; and desalination activities (see Table 2 in Section 1: **Water Supply, Sanitation and Wastewater Management**).

Natural Resources Management activities promote conservation and sustainable use of natural resources in coastal and freshwater habitats, thereby protecting the ecosystem services provided by ocean, coast, wetland, lake and riverine environments. **Natural Resources Management** also addresses a wide array of land use activities occurring within a watershed that may cause local impacts while also affecting downstream communities and ecosystems. This category likewise includes management of water resources across transboundary watersheds or coastlines, including assistance in the coordination of data collection and needs assessment among two or more countries. USAID plans to invest \$84 million in 45 countries for improved watershed, coastal zone, and freshwater ecosystem management from an integrated water resources management perspective (see Table 3 in Section 2: **Natural Resources Management**).

Economic Growth and Food Security activities include those activities in which humans engage to promote economic growth or food security, such as fisheries and aquaculture, hydropower development, irrigation, and other forms of agriculture. USAID plans to invest \$52 million in 29 countries for irrigation and livestock water supply,



USAID works with local authorities to implement the reforms necessary to enable viable public-private partnerships.

improved water-related agricultural practices, fisheries management, aquaculture and small scale hydropower development (see Table 4 in Section 3: **Economic Growth and Food Security**).

Disaster Preparedness activities are designed to help manage risks to human populations from natural disaster events such as storms, floods, and drought. Activities promote the hydrometeorological monitoring in and along vulnerable river basins and coastlines, and interventions help communities use the data to predict or avoid destruction and loss of life from extremes in water availability. USAID plans to invest \$17 million in 16 countries for hydrometeorological monitoring and forecasting and drought and flood vulnerability assessment (see Table 5 in Section 4: **Disaster Preparedness**).



Rapid population growth along the Nile River intensifies competition for scarce water resources.

An Integrated Approach Across Four Broad Activity Areas

USAID explicitly attempts to build bridges across all activities through a practical form of integrated water resources management (IWRM) that encourages synergies to achieve more effective, efficient, and lasting outcomes in all water-related sectors of development (Box 3). No single use of water can be adequately addressed without simultaneously considering the full range of needs; water

Box 3. USAID's Integrated Water Resources Management Approach Is A Model for Global Water Security

In recent years, water management institutions around the world have embraced the fundamentally interconnected nature of hydrological resources by promoting **Integrated Water Resources Management (IWRM)** as an alternative to the dominant sector-by-sector, top-down management style of the past. The ways that IWRM can be translated into practice are evident in many of USAID's development programs and include the following:

Management of water resources at the basin or watershed scale, including the integration of land and water, upstream and downstream, groundwater, surface water and coastal resources.

Integration of both supply-side and demand-side approaches, including:

Supply optimization, including assessments of surface and groundwater supplies, water balances, wastewater reuse, and environmental impacts of distribution and use options;

Demand management, including cost-recovery policies, water use efficiency technologies, and decentralized water-management authority.

An intersectoral approach to decision-making, taking into account the needs of all water use sectors, including agricultural, domestic, industrial, and ecological, and reflecting the perspectives of a broad range of social actors – public, private and civil society.

Improved and integrated policy, regulatory, and institutional frameworks, such as the implementation of the polluter-pays principle, water quality norms and standards, and market-based regulatory mechanisms.

Equitable access to water resources through participatory and transparent governance and management, including support for effective water users' associations, involvement of marginalized groups, consideration of gender issues, and combining authority with responsibility for managing the water resource.

for drinking and sanitation, water for food, water for economic development and water for ecosystems all must be given sufficient attention for water security to be achieved. IWRM fits in with the overall USAID ethic of sustainable development, as it challenges us to find connections among multiple needs and approaches to more effectively meet the issues of poverty, a degraded environment and democracy and freedom. An integrated approach enables USAID to be more strategic in how it manages its investments in the major areas of water resources management and in leveraging resources across a variety of sectors.

Diverse Regional Representation

The \$463 million in planned obligations for FY 2003 are divided amongst six geographical regions (Figure 3). Regions represented include 23 countries in Africa, 11 countries in Asia and the Near East, 14 countries in Europe and Eurasia, and 15 countries in Latin America and the Caribbean (Appendix). Since one half of the obligations will be invested in three countries alone in the Middle East Region (Egypt, Jordan, and West Bank/Gaza), this is reported as a separate regional group. Finally, some programs and activities that are global in scope or are multi-regional in nature are assigned as 'Central Programs', including, for example, the Global Health (GH) Bureau's Environmental Health Project (EHP), the Economic Growth, Agriculture and Trade (EGAT) Bureau's Water Team, the Disaster, Conflict and Humanitarian Assistance (DCHA) Bureau's disaster assistance programs, and the Development Credit Authority (DCA). The report attempts, however, to assign activities to specific regions and countries wherever possible. Regional trends will be discussed in more detail in the following sections. The remainder of this document presents further details on the regional distribution, general trends and specific interventions for each of the four activity areas: **Water Supply, Sanitation and Wastewater Management (WSSWM)**; **Natural Resources Management (NRM)**; **Economic Growth and Food Security (EGFS)**; and **Disaster Preparedness**.

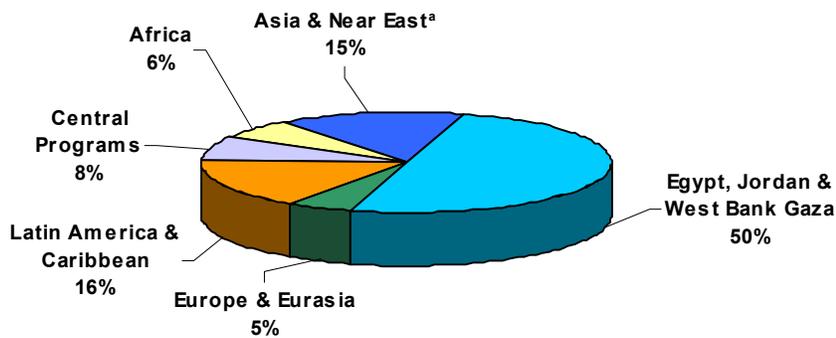


Figure 3. FY 2003 USAID Water Obligations Across Six Regions by Sub-categories of Activities
(^aExcluding Egypt, Jordan and West Bank/Gaza)



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Water Supply, Sanitation, and Wastewater Management (\$310 million)

Safeguarding Human Health

Successful management of freshwater resources is, among other things, a critical health issue. More than 1.2 billion people (one in every four people in the developing world) currently lack access to a safe water supply, and two in five have no access to improved sanitation (connection to a public sewer or septic system, or access to a pour-flush latrine, simple pit latrine, or ventilated improved pit latrine). Insufficient water quantity, poor water quality, inadequate sanitation, and poor personal hygiene practices are directly responsible for the vast majority of cases of diarrheal disease, which kill over 2 million children each year. In addition, water and wastewater management has an impact on insect vector populations, most notably mosquitoes. Malaria alone kills between 1 and 2.7 million people each year, with ninety percent of these deaths in sub-Saharan Africa, mainly among children. USAID investments reflect the urgent need to provide safe and affordable domestic water supply that is effectively integrated into overall water resources management, and the inclusion of sanitation and hygiene promotion to protect drinking water sources, the environment, and human health. The **WSSWM** activity area includes four categories of activities described below: *Water Supply*; *Sanitation*; *Wastewater Management*; and *Industrial Pollution Control*.

Water Supply

Water Supply activities are designed to provide or improve access to and availability of clean drinking water to urban and rural populations. The *Water Supply* category includes the provision of water delivery systems, alleviation of sources of contamination through both large scale water treatment and small scale or household point of use treatment, and source protection through well improvement or rehabilitation (larger scale, basin-wide source water protection is captured by a separate sub-category, *IWRM and Watershed Protection*, described under **Natural Resources Management** below). *Water Supply* also addresses the need to improve the capacity of city governments and private sector entities to deliver potable water and supporting environmental infrastructure services in a sustainable, cost-effective, and water-efficient manner, and to develop related legal, regulatory processes. This category may involve the rehabilitation of wells and water delivery systems damaged by natural or man-made disasters, but does not include the emergency and temporary provision of potable water, water containers, and portable water treatment kits to internally displaced persons in refugee camps, as these are regarded as emergency assistance rather than sustainable development activities. **WSSWM** investments include \$236 million for drinking water supply projects in at least 46 countries² (Table 2).



Increasing access to clean water enables women and children to spend time earning income rather than hauling water.

² The number of countries reported for each sub-category in Table 2 may be underestimated, as some funding from regional projects has not been assigned to specific countries in this analysis.

Table 2. FY 2003 USAID Obligations for Water Supply, Sanitation and Wastewater Management
(Reported in Millions of USD)

The *Water Supply, Sanitation and Wastewater Management* Activity Area includes *Water Supply; Sanitation; Wastewater Management; and Pollution Control*

Country or Operating Unit	Water Supply	Sanitation	Wastewater Management	Pollution Control	TOTAL
Africa					
DR Congo	1.292	0.795			2.087
Eritrea	1.245	1.045			2.290
Ethiopia	0.357	0.357			0.714
Ghana	0.475	0.147			0.623
Guinea	0.025				0.025
Malawi	0.410				0.410
Mali	0.254	0.094			0.348
Niger	0.072	0.072			0.145
Somalia	0.202	0.182			0.384
South Africa	0.350		0.350		0.700
Sudan	0.752	0.075			0.827
Total - Africa	5.435	2.768	0.350	0.000	8.551
Asia and Near East^a					
Afghanistan	0.200	0.100			0.300
Bangladesh	2.200	3.200			5.400
India	2.225		1.780	0.445	4.450
Indonesia	3.776	1.450			5.226
Lebanon			4.000		4.000
Morocco	0.400				0.400
Philippines	0.200		0.100	0.100	0.300
U.S.-Asia Environmental Partnership Program (India, Indonesia, Philippines, Sri Lanka, Thailand, and Vietnam)	2.011		2.011	2.011	6.033
Total - Asia and Near East	11.012	4.750	7.891	2.556	26.209
Egypt, Jordan, and West Bank/Gaza					
Egypt ^b	9.500	7.500			17.000
Jordan	19.500		14.000		33.500
West Bank/Gaza ^c	151.920	0.214	3.713		155.847
Total - Egypt, Jordan, and West Bank/Gaza	180.920	7.714	17.713	0.000	206.347
Europe and Eurasia					
Armenia	1.200				1.200
Azerbaijan	0.938	0.938			1.876
Bosnia & Herzegovina	0.350				0.350
Croatia	0.983		0.983		1.966
Cyprus	0.155		0.360		0.515
Georgia	0.854	0.854			1.708
Kazakhstan	0.070			0.050	0.120
Kyrgyzstan	0.180				0.180
Macedonia	0.600				0.600
Moldova	0.325				0.325
Turkmenistan	0.230	0.133		0.030	0.393

Table 2 con't. FY 2003 USAID Obligations for Water Supply, Sanitation and Wastewater Management
(Reported in Millions of USD)

Country or Operating Unit	Water Supply	Sanitation	Wastewater Management	Pollution Control	TOTAL
Ukraine	0.661		0.661		1.322
Uzbekistan	0.500				0.500
Eurasia Regional Programs (Armenia, Azaerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Turkmenistan, Ukraine, and Uzbekistan)	0.773		0.339		1.112
Total - Europe and Eurasia	7.819	1.925	2.343	0.080	12.167
Latin America and Caribbean					
Bolivia	1.031	1.031		0.564	2.626
Brazil			0.025		0.025
Colombia	1.750	3.175	0.300	0.250	5.475
Dominican Republic	0.951				0.951
Ecuador	1.250	1.250			2.500
El Salvador	2.430	1.328			3.758
Guatemala	0.300				0.300
Haiti	0.870				0.870
Honduras	1.628	1.628			3.256
Jamaica			1.156		1.156
Nicaragua		0.050			0.050
Paraguay	0.060	0.150			0.210
Peru	3.525	3.525		1.217	8.267
Caribbean Regional Programs (Dominican Republic, Haiti, and Jamaica)			0.833		0.833
Latin America Regional Programs (Bolivia, Brazil, Colombia, Ecuador, El Salvador, Honduras, Nicaragua, Paraguay, and Peru)	0.022	0.021	0.022		0.065
Total - Latin America and Caribbean	13.817	12.158	2.336	2.031	30.342
Central Programs					
Disaster, Conflict & Humanitarian Assistance (DCHA)/ Office of Disaster Assistance	16.513	8.257			24.770
Global Health/Environmental Health Program	0.400	0.400			0.800
Global Health/Point of Use Water Quality	0.300				0.300
Urban Programs	0.088	0.025	0.062		0.175
Total - Central Programs	17.301	8.682	0.062	0.000	26.045
TOTAL - ALL REGIONS	236.303	37.996	30.695	4.667	309.661

^aExcludes Egypt, Jordan and West Bank/Gaza

^bIncludes \$17 million in prior year carryover funds to be obligated in FY 2003

^cIncludes \$148 million in prior year carryover funds to be obligated in FY 2003

Water Supply is the largest sub-category of activities in **WSSWM**, representing 76% of all investments in this activity area. *Water Supply* investments include \$130 million for a special category of water supply in West Bank/Gaza, desalination. Desalination activities support the transfer of technology, construction of facilities, and assessments of environmental impacts for the purification of saltwater for domestic or industrial purposes. Although currently comprising only one recipient country, this is an area of great potential where USAID may see future increases in investment. The potential for desalination applications has been explored by USAID in the Central Asian Republics and Egypt in recent years.

Sanitation

Sanitation activities are designed to provide or improve access to cost-effective options for domestic waste disposal systems for slum communities and rural settings. The *Sanitation* category includes the provision of household connections to wastewater conveyance systems, and the necessary institutional, policy, and regulatory reform measures needed to maintain such infrastructure. It also includes a strong hygiene improvement component with country-based initiatives to promote handwashing, safe disposal of excreta and safe water handling at the community and household levels. Investments in *Sanitation* are planned at \$38 million (12% of the total for the **WSSWM** activity area) in at least 24 countries (Table 2).



Lack of access to sanitation is alarming, with 409 million slum residents unable to safely dispose of waste, which endangers their lives.

Wastewater Management

Wastewater Management includes the collection, conveyance, treatment and return to the environment of wastewater. Activities include regulatory and policy reform, construction, rehabilitation and management of these facilities. Investments in *Wastewater Management* are planned at \$31 million (10% of the total for the **WSSWM** activity area) in at least 16 countries (Table 2).



The UN estimates that between 30 and 60 percent of all urban populations in developing country cities live in inner-city slums and squatter settlements.

Industrial Pollution Control

These activities aim to manage and reduce human and environment exposure to hazardous and toxic wastes in the aquatic environment, including their regulation, handling, transport, disposal, storage cleanup. The *Industrial Pollution Control* category includes water pollution abatement; ecotoxicity, pollution prevention; cleaner production technologies; total quality management; ground and surface water protection and cleanup; health and environmental risk assessment and priority setting; legal services for enforcement of spills and emergency management; and environmental regulation, permitting testing and monitoring. Investments for *Industrial Pollution Control* are planned at \$5 million (2% of the total for the **WSSWM** activity area) in at least 7 countries (Table 2).

Regional Distribution and General Trends in Water Supply, Sanitation, and Wastewater Management (WSSWM) Activities

Approximately two thirds of the \$463 million USAID plans to obligate to all water-related activities (\$310 million) represent the **WSSWM** activity area (see Figure 2 shown earlier). Of this amount, 67% is planned for Egypt, Jordan and West Bank/Gaza (Figure 4), with the remainder is planned at \$9 million for 11 countries in Africa, \$26 million for 10 countries in Asia and the Near East, \$12 million for 13 countries in Europe and Eurasia, \$30 million for 13 countries in Latin America and the Caribbean, and \$26 million for Central Programs.



Improved water supply and sanitation enhances child survival.

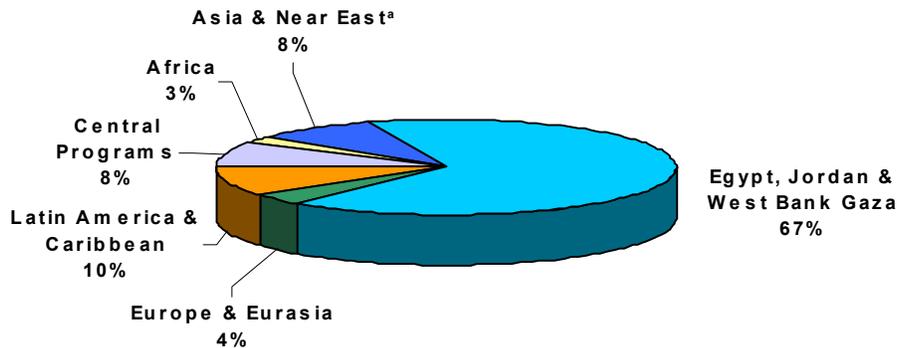


Figure 4. FY 2003 USAID Water Obligations for Water Supply, Sanitation, and Wastewater Management by Region (Excludes Egypt, Jordan and West Bank/Gaza)

At a planned investment of \$310 million, **WSSWM** activities represent by far the largest funding area in USAID’s entire water portfolio. Major individual recipients of these investments are West Bank/Gaza, Jordan, the Disaster, Conflict and Humanitarian Assistance (DCHA) Bureau’s Office of Disaster Assistance, Egypt, Peru, the US-Asia Environmental Partnership (US-AEP) Program, Colombia, Bangladesh, Indonesia, and India (Figure 5).

The high proportion of FY 2003 water obligations in the Middle East Region (67%) is not just a short-term anomaly, but reflects an historical trend of investing in large scale, capital-intensive infrastructure in the region. In fact, during the four years from 2000-2003, **WSSWM** obligations in these three countries averaged nearly one half (48%) of the entire USAID water portfolio. The sources of

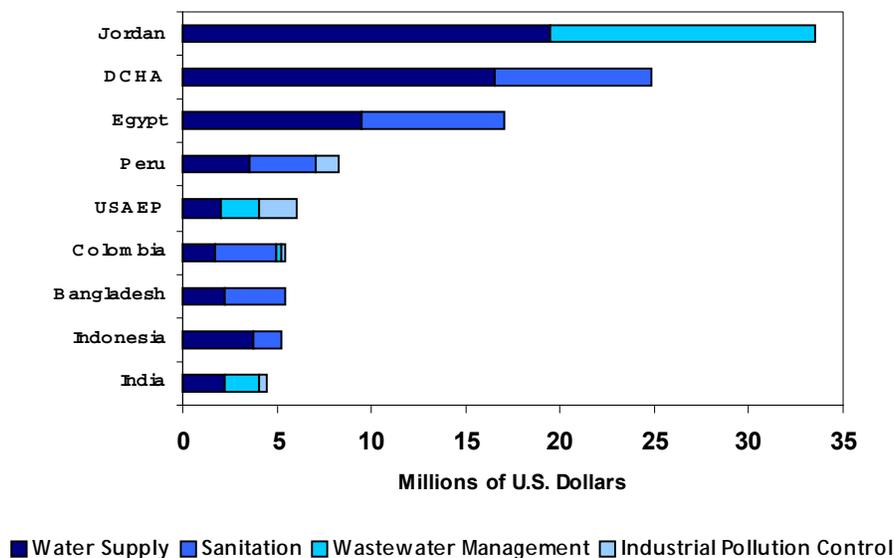


Figure 5. Top Recipients of USAID FY 2003 Obligations for Water Supply, Sanitation, and Wastewater Management^a (By far the largest single recipient planned for FY 2003 is West Bank/Gaza, and at a funding level of \$155 million, the program greatly exceeds the scale relative to other top recipients, and is therefore not depicted.)

funding for these investments also departs from the pattern observed in most other USAID regions of the world. More than \$150 million of the FY 2003 obligations for West Bank/Gaza are unobligated Supplemental funds carried over from the Wye River Peace Agreement of 1999. Significant investments from Supplemental and Economic Support Fund (ESF) accounts also fund large scale water supply and wastewater treatment infrastructure projects in the Middle East which typically do not occur in most USAID programs around the world. Elsewhere, the more typical trend in direct **WSSWM** investments by USAID is that of an increasing emphasis on investments in “software”—ie. the transfer of technology and technical assistance to strengthen institutions and build capacity of local and national governments to monitor, predict, and manage supply and demand for water resources and enhance equitable allocation to all sectors of development.

Indirectly, however, USAID investments and activities in technical capacity building and good governance and finance practices for the water sector catalyze alliances and partnerships capable of leveraging significant sums of money to fund large scale water delivery and wastewater treatment systems and small scale potable water supply and sanitation facilities alike. In fact, nearly all of the \$630 million estimated to be leveraged through the Water for the Poor Initiative over three years will benefit the water supply and sanitation sub-sector. In FY 2003 USAID plans to help mobilize at least \$80 million in local capital and put it to work in creditworthy but underserved markets in Egypt, Morocco and Bosnia by issuing partial loan guarantees to private lenders through the Development Credit Authority (DCA). Similar financial arrangements may be finalized before the end of FY 2003 to leverage an additional \$10 million in South Africa and \$35 million in India.

A substantial proportion of the FY 2003 funding for the **WSSWM** activity area includes \$304 million to support clean water and sanitation activities proposed under the Water for the Poor Presidential Initiative. The investment for FY 2003 is well above the average annual targeted commitment of \$170 million proposed for this initiative.



Fulfillment of people's water-related needs through infrastructure investment is important in the elimination of poverty and the promotion of healthy populations.



The West Africa Water Initiative will benefit over 400,000 people in Ghana, Mali, and Niger.

Illustrative USAID Programs in Water Supply, Sanitation, and Wastewater Management

In **Ghana, Mali, and Niger**, USAID is a partner in the **West Africa Water Initiative**, a new alliance of twelve international organizations announced at WSSD in 2002. USAID has provided a total of \$5 million in FY 2002-2003, complementing over \$36 million in resources from other partners. The partnership will invest in small-scale potable water supply and sanitation, hygiene, and sound water management for food production and economic development in poor rural and periurban communities. Over 400,000 people will benefit from improved access to water supply and sanitation and better water management through the initiative.

Through USAID's **Development Credit Authority (DCA)**, USAID issues partial loan guarantees to private lenders to achieve economic development objectives. The DCA also helps identify both partners and opportunities for risk sharing arrangements in private sector-led finance, ranging from large-scale water initiatives in the formal sector to small-scale projects such as farmer cooperative well programs in the informal sector. The DCA credit enhancement has facilitated financing in many sectors, including water and sanitation.

In February 2003 the United States launched the **Community Water and Sanitation Facility** to expand water and sanitation services in slum communities. The Facility works towards the achievement of the Millennium Development Goal of significantly improving the lives of 100 million slum dwellers by 2020. The U.S. launched the Facility with seed funding of \$2 million within the context of the Cities Alliance, a donor coalition of 14 contributing members committed to the vision of “Cities Without Slums.”

In the **Central Asian Republics**, USAID has launched several activities in the water sector totaling over \$9 million in FY 2003. Of this, \$1 million will be invested to promote clean water supply and sanitation, including a large program on potable water in the Karakalpakstan



Community residents in India show their water bill for the new private water hook-up they have in their home as a result of DCA financing through a USAID-supported water supply project.

Provision of water supply, sanitation and source water protection activities totaling more than \$16 million in these countries are integral components of drug eradication efforts in highland communities.

Gaza is experiencing a serious water shortage, with the demand for potable water significantly exceeding available supply. At the same time, a lack of adequate sewerage facilities has resulted in contamination of groundwater resources from cesspits, septic tanks, and leaking sewage lagoons. Recent international experience with desalination plants has brought construction and operating costs down significantly, and desalination is now seen as a viable option both for meeting the area's rapidly growing demands for water and for mitigating the environmental problems associated with over-extraction of groundwater resources. USAID therefore plans to invest \$130 million to support a desalination activity, and \$26 million in other community water supply and sanitation projects.

USAID will invest nearly \$1 million in **South Africa** this year to continue support of a water and sanitation initiative targeted at urban poor areas. The objective of the initiative is to increase the quality and quantity of these services by increasing the investment in and improving the management of municipal water and sanitation services. The funding will support the development of independently monitored performance standards and credit enhancement through the DCA program.

Health sector activities in hygiene improvement also make an important contribution to water supply and sanitation activities. For example, in the **Dominican Republic**, the USAID-funded reconstruction of water systems and latrines after Hurricane Georges (1998) included a critical hygiene improvement component training NGOs and governmental agencies in the design and implementation of hygiene behavior change activities, continuing through FY 2003. This effort also provides technical assistance to the National Water Authority to ensure community participation in rural water and sanitation management, including integration of water interventions with community-based hygiene promotion activities.

region of Uzbekistan, an area hit hard by the Aral Sea Disaster. The project will bring water to over 500,000 people in the region through new wells, purifying equipment, and delivery systems.

In **India**, USAID will invest \$5 million in water supply, wastewater management, and pollution control interventions, part of which will support the Financial Institutions Reform and Expansion (FIRE) project and catalyze innovative financing for water partnerships. USAID's DCA has recently raised a total of \$6 million in private sector Indian rupees for six projects in the State of Tamil Nadu, including a \$403,000 project in the township of Valasaravakkam to lay underground water pipes from a safe drinking water source to serve 26,000 people.

In **Jordan**, USAID is supporting a \$20 million water supply improvement program during FY 2003. One component is assistance to the city of Amman in developing new water supply and distribution systems, which will improve household access to clean water for 580,000 residents.

Improvements in water supply and sanitation complement the effectiveness of other development assistance programs in **Bolivia, Colombia, and Peru**. USAID provi-



Provision of water supply and sourcewater protection are integral components of drug eradication efforts in Bolivia, Colombia, and Peru.



2 Natural Resources Management (\$84 million)

Promoting Sound Water Resources Management to Sustain Watershed, Freshwater and Coastal Ecosystem Services

The freshwater and marine hydrological cycle serves vital ecological functions beyond the provision of fresh water as a commodity for human use. Habitats such as wetlands, forested watersheds, estuaries, riparian, and marine environments sustain biodiversity, moderate floods and droughts, filter contaminants, form the foundation of coastal and aquatic food chains, and provide other diverse ecosystem services. These systems are rapidly being disrupted and destroyed by unconstrained development and exploitation. Aquatic ecosystems are under the greatest threat of all ecosystems on the planet and coastal and marine environments are especially subject to severe impacts by dense human settlement.

Management efforts must focus on recognizing and sustaining aquatic ecosystem values and services as the foundation for further sustainable development. Opportunities to protect, restore and rehabilitate aquatic systems must be explored, while decisions must be based on sound science and meaningful analysis of costs and benefits. An IWRM approach involving multiple stakeholders will help ensure that aquatic biodiversity and its many values and services will have a voice in such decision-making.

More than half the world's population lives in about 300 river basins that are shared across international boundaries, and dozens of other nations share coastlines and coastal waters. Disputes among countries over limited freshwater supplies or marine resources already occur, and will likely increase in the future. Internal to individual nations, civil strife can be exacerbated by disputes over water resources, while effective management tools can also create many opportunities for cooperation in otherwise tense political environments. Through an IWRM approach, exploring creative ways to link program areas can greatly increase the effectiveness of these efforts and help develop collaborative solutions to complex interdisciplinary problems. The Natural Resources Management activity area includes three categories of activities described below: *IWRM and Watershed Protection*; *Coastal Zone Management*; and *Freshwater Ecosystems Management*.

Integrated Water Resources Management (IWRM) and Watershed Protection

IWRM and Watershed Protection activities support the management of ground and surface water resources and their watersheds, and broad-based, water-related policy development and institutional strengthening to help governments, civil society, and communities implement planning, financial, and regulatory instruments for equitable water resources allocation and management based on multi-stakeholder dialogue and input. The *IWRM and Watershed Protection* category includes structures and strategies to conserve the quality and supply of water, slow runoff, and buffer storm flows; surveys dealing with water balances, water supply, aquatic life, and habitat protection; and transboundary water resources management focused on data sharing and common water protocol development in river basins shared by two or more countries. Some IWRM activities that have a targeted, sectoral focus, such as hydropower policy, finance reform for urban water service delivery, strengthening irrigation water user associations, or mariculture policy development, are included under other water-related categories. Hydrometeorological monitoring is included under the Disaster Preparedness activity area. *IWRM and Watershed Protection* investments include \$57 million (68% of the total for the **Natural Resources Management** activity area) for projects in 37 countries (Table 3).



USAID helps conserve the diverse ecological services provided by aquatic habitats.

Table 3. FY 2003 USAID Water Obligations for Natural Resources Management by Country and Region
(Reported in Millions of USD)

The *Natural Resources Management* Activity Area includes *IWRM and Watershed Protection*, *Coastal Zone Management*, and *Freshwater Ecosystems Management*

Country or Operating Unit	IWRM & Watershed Protection	Coastal Zone Management	Freshwater Ecosystems Management	TOTAL
Africa				
Ethiopia	0.301			0.301
Ghana	1.220			1.220
Guinea	2.284			2.284
Kenya		0.425		0.425
Madagascar	0.300			0.300
Tanzania		0.850		0.850
REDSO/ESA ^a (Burundi, Rwanda, Tanzania & Uganda)			0.390	0.390
RCSA ^b (Angola, Botswana, Mozambique, Namibia, and Zimbabwe)	0.500			0.500
WARP ^c (Ghana)	0.438			0.438
Africa Regional Program (Ethiopia, Ghana, Guinea, Kenya, Madagascar, and Tanzania)	0.425			0.425
Total - Africa	5.468	1.275	0.390	7.133
Asia and Near East^d				
Bangladesh	2.700			2.700
India	3.900			3.900
Indonesia	2.326	2.400		4.726
Lebanon	1.000	0.200		1.200
Morocco	0.945			0.945
Philippines	1.500	3.000		4.500
Asia and Near East Regional Programs (Lebanon and Morocco)	2.500			2.500
Total - Asia and Near East	14.871	5.600	0.000	20.471
Egypt, Jordan and West Bank/Gaza				
Egypt	3.900	5.000		8.900
Jordan	5.350	0.500		5.850
West Bank/Gaza ^e	4.491	4.500		8.991
Total - Egypt, Jordan and West Bank/Gaza	13.741	10.000	0.000	23.741
Europe and Eurasia				
Armenia	1.395			1.395
Cyprus	0.927			0.927
Georgia	0.738			0.738
Kazakhstan	0.325			0.325
Kyrgyzstan	0.425			0.425
Tajikistan	0.233			0.233
Turkmenistan	0.080			0.080

Table 3 con't. FY 2003 USAID Water Obligations for Natural Resources Management by Country and Region
(Reported in Millions of USD)

The *Natural Resources Management* Activity Area includes *IWRM and Watershed Protection, Coastal Zone Management, and Freshwater Ecosystems Management*

Country or Operating Unit	IWRM & Watershed Protection	Coastal Zone Management	Freshwater Ecosystems Management	TOTAL
Europe and Eurasia con't.				
Ukraine	0.046			0.046
Uzbekistan	0.350			0.350
Central Asia Regional Program (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan)	0.500			0.500
Total - Europe and Eurasia	5.019			5.019
Latin America and Caribbean				
Bolivia	0.564			0.564
Brazil			0.100	0.100
Ecuador	0.806	3.667		4.473
El Salvador	2.337			2.337
Guatemala	0.075		0.225	0.300
Haiti	1.200			1.200
Honduras	1.238			1.238
Jamaica	1.156	1.156		2.312
Mexico	0.168	0.769		0.937
Panama	7.000			7.000
Paraguay			0.333	0.333
Peru	1.217			1.217
Caribbean Regional Program (Dominican Republic, Haiti, and Jamaica)	0.833	0.833		1.666
Central America Regional Program (Guatemala, Honduras, and Mexico)		0.400		0.400
Latin America Regional Program (Ecuador, Jamaica, Mexico, and Honduras)		0.700		0.700
Total - Latin America and Caribbean	16.594	7.525	0.658	24.777
Central Programs				
Economic Growth, Agriculture & Trade/ International Water Management Institute	0.250			0.250
Economic Growth, Agriculture & Trade/ Water Team	1.201	0.833	0.400	2.434
Total - Central Programs	1.451	0.833	0.400	2.684
TOTAL - ALL REGIONS	57.144	25.233	1.448	83.825

^aRegional Economic Development Service for East and Southern Africa & Greater Horn of Africa Initiative

^bRegional Center for Southern Africa

^cWestern Africa Regional Program

^dExcludes Egypt, Jordan and West Bank/Gaza

^eIncludes nearly \$9 million in prior year carryover funds to be obligated in FY 2003



Upstream pollution on the Ganges and Brahmaputra Rivers adversely affects water quality for downstream users, and requires shared decision-making by the riparian countries for pollution control in the Ganges-Brahmaputra

(30% of the total for the **Natural Resources Management** activity area) for projects in 13 countries (Table 3), with no funding for programs obligated in the Europe and Eurasia Region.

Coastal Zone Management

Coastal Zone Management activities are designed to improve the management or protection of coastal and marine environments and natural resources for sustainable utilization. The coastal zone comprises both land and water in the vicinity of the interface between land and sea. Coastal zones include resources management of land areas and land use near the coast, and marine nearshore resources within these areas, such as the intertidal zone, coral reefs and nearshore waters, and saline and brackish water marshes. The *Coastal Zone Management* category also includes coral reef conservation, and activities that support environmental management and protection of coral reefs and are specifically designed to improve their management and protection of their biological resources for sustainable utilization. *Coastal Zone Management* investments include \$25 million

Freshwater Ecosystems Management

Freshwater Ecosystems Management activities are directed at environmental management and protection of freshwater wetland and aquatic habitats areas and are specifically designed to improve the management and protection of their biological resources for sustainable utilization. These investments include over \$1 million (only 2% of the total for the **Natural Resources Management** activity area) for 7 countries in Africa and Latin America (Table 3).

Regional Distribution and General Trends in NRM Activities

Nearly one fifth of the \$463 million USAID plans to obligate to all water-related activities (\$84 million) represent **Natural Resources Management** activities (see Figure 2 shown earlier). Of this amount the largest proportion (30%) will include \$25 million for 13 countries in Latin America and the Caribbean, followed closely by \$24 million for Egypt, Jordan and West Bank/Gaza, \$20 million for 6 countries in Asia and the Near East, \$7 million for 14 countries in Africa, \$5 million for 9 countries in Europe and Eurasia, and \$3 million for Central Programs (Figure 6). Major recipients of these investments are West Bank/Gaza, Egypt, Panama, Jordan, Indonesia, the Philippines, Ecuador, India, and Bangladesh (Figure 7).

Part of the funding for the **Natural Resources Management** activity area includes \$90 million planned to support watershed management activities proposed under the Water for the Poor Presidential Initiative. USAID will require additional obligations in FY 2004 and 2005 in order to help meet the three-year funding target of \$400 for watershed management activities proposed under the Water for the Poor Initiative. This amount averages an annual commitment of \$133 over three years (2003-2005), of which only 68% will be attributed to watershed management in the first year of the initiative.

Illustrative USAID Programs in NRM

Through the Coastal Resources Management project, a partnership between USAID and the Coastal Resources Center of the University of Rhode Island, USAID invested over \$4 million in FY 2003 to promote the sustainable use of coastal resources in **Kenya, Tanzania, Indonesia and Mexico**. Interventions help strengthen the capacity of public and private institutions to manage coastal resources more effectively on a sustainable basis through integrated approaches to coastal planning and development. Technical assistance helps support improved governance processes, information dissemination on effective coastal management, and the development of effective techniques to address coastal management issues in diverse social, political and economic settings.



Improved governance policies and practices at the national and local levels promote sustainable management of coastal waters to help protect fishing livelihoods for future generations in Indonesia.

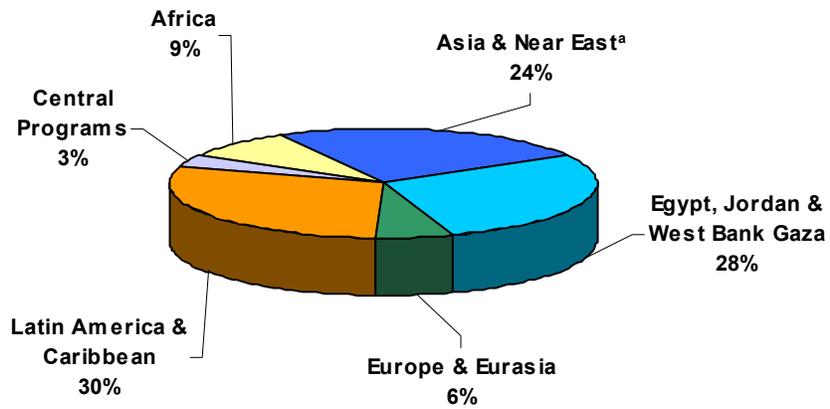


Figure 6. FY 2003 USAID Water Obligations for Natural Resources Management by Region
 (^aExcludes Egypt, Jordan and West Bank/Gaza)

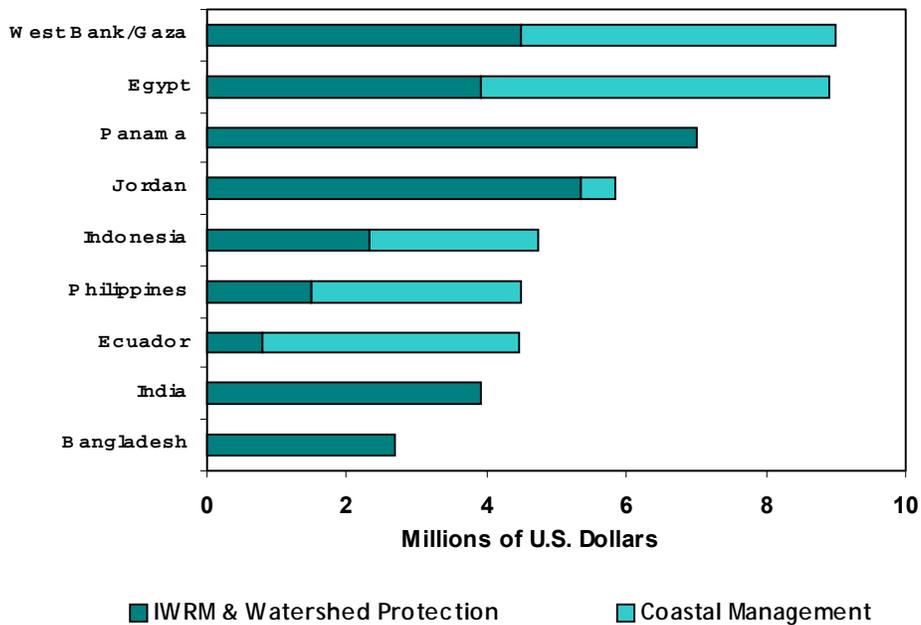


Figure 7. Top Recipients of FY 2003 USAID Water Obligations for Natural Resources Management



Enhancing national policy on mariculture in Tanzania protects water quality while promoting food security.



In the Philippines, devolution of government authority empowers local community groups to take action through a water alliance.

In **Panama**, USAID plans to obligate \$7 million in FY 2003 for sustainable watershed management and land use practices in the upper Panama Canal watershed. USAID has demonstrated through past performance that the promotion of best practices in environmental protection throughout the Panama Canal Watershed support effective long term operation of the Panama Canal itself. After all, efficient operation of the Panama Canal relies on the freshwater provided by rain across the 326,000-hectare watershed, as each ship passage requires 52 million gallons of freshwater to operate the passageway. The maintenance of adequate forest cover wherever possible, as well as water quality monitoring, will help ensure the availability of adequate volumes of water for canal operations by minimizing sedimentation and drainage of contaminants into the canal.

USAID will invest \$5 million in FY 2003 for watershed and coastal zone management activities in the **Philippines**. As part of this effort, USAID will work with local government units develop the Philippines Integrated Water Resources Alliance to help cities implement a model, basin-wide approach to water resources management. This public-private sector alliance will work to replicate efforts of selected cities in other local governments and their watershed and coastal areas.

In **Morocco**, USAID plans to obligate \$1 million in FY 2003, complementing a total investment of \$30 million over the past ten years, to promote improved water resources management in the Souss-Massa River Basin and other important basins throughout the country. These activities have resulted in improved decentralized management of water resources through the formation of operational basin water authorities.

In **Jamaica**, USAID will invest \$2 million in *IWRM* and *Coastal Zone Management* activities aimed at reducing the impact of contamination from agricultural run-off and nutrient-rich sewage flowing from informal settlements in the watershed and along rivers. This is accomplished through interventions for improved agricultural practices and watershed management, education and enforcement that complement an additional \$2 million investment attributed to the *Wastewater Management* category discussed in Section 1. The project has resulted in the strengthened capacity of Jamaica's National Water Commission to effectively create public partnerships for wastewater treatment and involve the tourism industry in Environmental Management Systems.



3

Economic Growth and Food Security (\$52 million)

Putting Water to Work to Alleviate Food Crises and Poverty

Food production is completely dependent on predictable and high quality supplies of fresh or marine water. Approximately 80% of all freshwater consumed on the planet is devoted to agricultural production, often in irrigated systems that are inefficient and environmentally unsustainable. The growing global population will demand even greater agricultural productivity in the future. Creative solutions will be needed to address world food security without degrading or depleting terrestrial and/or aquatic ecosystems.

In all cases, water scarcity, overabundance and contamination disproportionately affect the poor, and the links between poverty and achieving a safe and adequate supply of water for human and ecosystem needs are significant. A dependable water supply is critical for every kind of economic development ranging from primary sector activities (agriculture, forestry and mining) to industrial production, energy generation or service sector development. Increasingly, different human activities are competing for limited water supplies that are critical to sustain human livelihood and economic productivity. The Economic Growth and Food Security activity area includes three categories of activities described below: *Irrigation and Agriculture*; *Fisheries and Aquaculture*; and *Small Scale Hydropower*.

Irrigation and Agriculture

Irrigation and Agriculture activities are directed at supporting or providing irrigation facilities, or are designed to manage and conserve soil, water, and biological resources that are utilized for agricultural production. These interventions help increase the availability (through diversion and other means) and/or efficient use of ground water and surface water for agriculture. The category includes infrastructure and irrigation management, and interventions to conserve water quantity and protect water quality from agrochemicals and sediment deposition. *Irrigation and Agriculture* investments include \$40 million (77% of the total for the **Economic Growth and Food Security** activity area) for projects in 23 countries (Table 4).

Fisheries and Aquaculture

Fisheries and Aquaculture activities include the capture and/or culture of aquatic animals (including fish, crustaceans and mollusks) and plants (including seaweed) in fresh, brackish and marine waters, primarily for use as human food. This category also includes activities related to the assessment, conservation and management of aquatic animals and plants harvested from oceans, rivers and lakes for use as human food, animal feeds, or for industrial purposes. Aquaculture activities include hatchery production for stocking aquaculture facilities as well as for the enhancement of natural stocks. *Fisheries and Aquaculture* investments include \$8 million (15% of the total for the **Economic Growth and Food Security** activity area) for projects in 6 countries (Table 4), with no funds obligated in Egypt, Jordan, or West Bank/Gaza.



Support for environmentally sustainable irrigation will boost economic growth and alleviate hunger and poverty.

Table 4. FY 2003 USAID Water Obligations for Economic Growth and Food Security by Country and Region
(Reported in Millions of USD)

The Economic Growth and Food Security Activity Area includes Irrigation and Agriculture; Fisheries and Aquaculture; and Hydropower (Small Scale)

Country or Operating Unit	Irrigation & Agriculture	Fisheries & Aquaculture	Hydropower (Small Scale)	TOTAL
Africa				
Angola	0.350			0.350
Benin	0.154			0.154
Eritrea	1.700			1.700
Guinea	3.520			3.520
Madagascar		0.185		0.185
Somalia	0.182			0.182
Sudan	1.565			1.565
Total - Africa	7.471	0.185	0.000	7.656
Asia and Near East^a				
Afghanistan	7.621			7.621
Bangladesh		1.800		1.800
Morocco	0.600			0.600
Nepal	1.028		2.200	3.228
Philippines		1.000		1.000
Total - Asia and Near East	9.249	2.800	2.200	14.249
Egypt, Jordan and West Bank/Gaza				
Jordan	2.000			2.000
Total - Egypt, Jordan and West Bank/Gaza	2.000	0.000	0.000	2.000
Europe and Eurasia				
Armenia			0.200	0.200
Georgia			1.106	1.106
Kazakhstan	0.250	0.300		0.550
Kyrgyzstan	1.480		0.250	1.730
Tajikistan	1.230			1.230
Turkmenistan	0.100			0.100
Uzbekistan	1.900			1.900
Central Asia Regional Program (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan)	0.300			0.300
Total - Europe and Eurasia	5.260	0.300	1.556	7.116
Latin America and Caribbean				
Bolivia	6.230			6.230
Brazil			0.125	0.125
Colombia	1.500	0.100		1.600
Ecuador	2.000	2.000		4.000
El Salvador	0.205			0.205
Haiti	1.840			1.840
Honduras	0.186		0.186	0.372

Table 4 con't. FY 2003 USAID Water Obligations for Economic Growth and Food Security by Country and Region
(Reported in Millions of USD)

The *Economic Growth and Food Security* Activity Area includes *Irrigation and Agriculture; Fisheries and Aquaculture; and Hydropower (Small Scale)*

Latin America and Caribbean con't.				
Nicaragua	0.350			0.350
Peru	3.375			3.375
Total - Latin America and Caribbean	15.686	2.100	0.311	18.097
Central Programs				
Economic Growth, Agriculture & Trade/ International Water Management Institute	0.500			0.500
Economic Growth, Agriculture & Trade/ Pond Dynamics/Aquaculture Collaborative Research Support Program		2.150		2.150
Economic Growth, Agriculture & Trade/ WorldFish Center		0.675		0.675
Total - Central Programs	0.500	2.825	0.000	3.325
TOTAL - ALL REGIONS	40.166	8.210	4.067	52.443

^aExcludes Egypt, Jordan and West Bank/Gaza

Hydropower (Small Scale)

Hydropower activities are related to the planning, development and management of hydropower facilities. These investments include \$4 million (8% of the total for the *Economic Growth and Food Security* activity area) for projects in 6 countries (Table 4), with no funds obligated in the Africa Region or Egypt, Jordan, and West Bank/Gaza.

Regional Distribution and General Trends in Economic Growth and Food Security Activities

Over one tenth of the \$463 million USAID plans to obligate to all water-related activities (\$52 million) represent *Economic Growth and Food Security* activities (see Figure 2 shown earlier). Of this amount, the largest proportion (34%) will include \$18 million for 9 countries in Latin America and the Caribbean, followed by \$14 million for 5 countries in Asia and the Near East, \$8 million for 7 countries in Africa, \$7 million for 7 countries in Europe and Eurasia, \$3 million for Central Programs, and \$2 million for Egypt, Jordan and West Bank/Gaza (Figure 8). Major recipients of these investments are Afghanistan, Bolivia, Ecuador, Guinea, Peru, Nepal, the Pond Dynamics/Aquaculture Collaborative Research Support Program (PD/A CRSP), Jordan, and Uzbekistan (Figure 9). Nepal is the only major recipient of funding for small scale *Hydropower* activities.

Planned funding in 2003 for the *Economic Growth and Food Security* activity area includes \$52 million in activities to increase the productivity of water proposed under the Water for the Poor Presidential Initiative. This planned investment for 2003 is well above the average annual targeted commitment of \$20 million proposed for this three-year initiative.

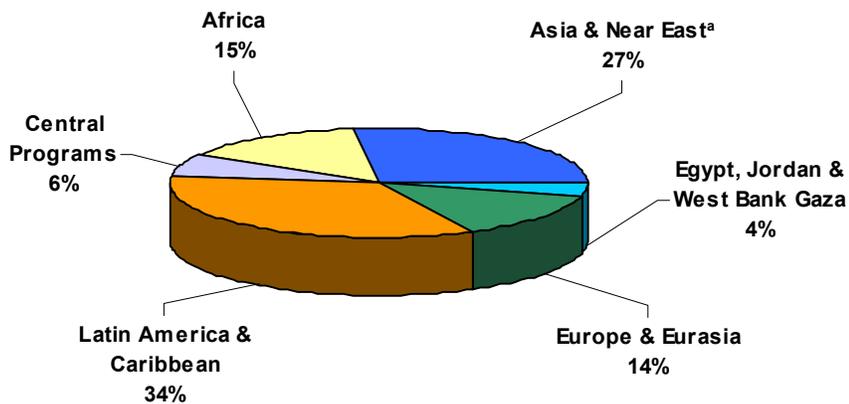


Figure 8. FY 2003 USAID Water Obligations for Economic Growth and Food Security by Region
 (^aExcludes Egypt, Jordan and West Bank/Gaza)

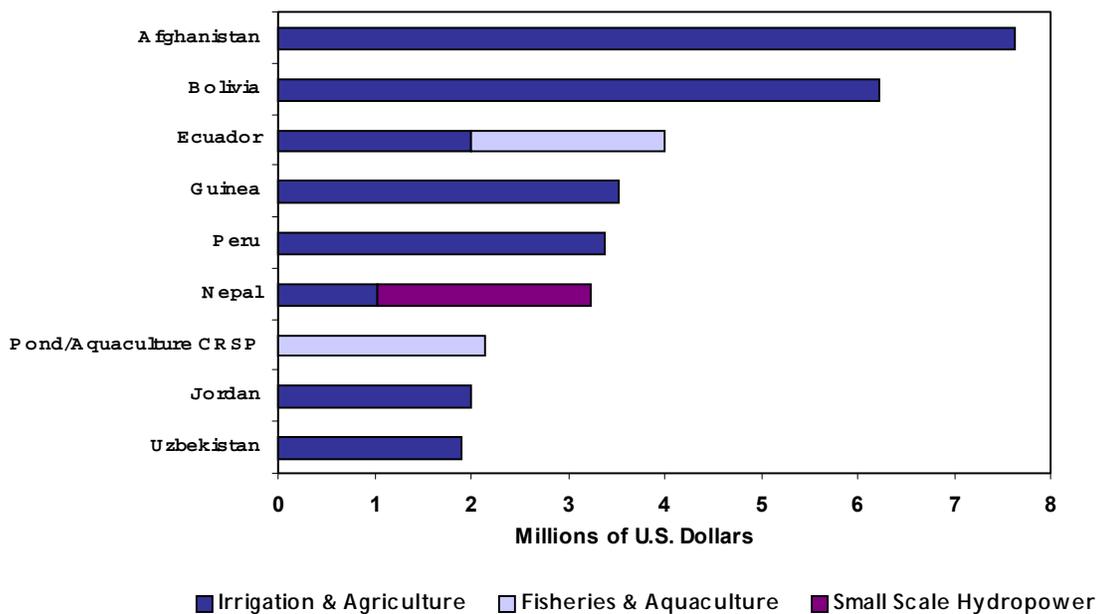


Figure 9. Top Recipients of FY 2003 USAID Water Obligations for Economic Growth and Food Security



Illustrative USAID Programs in Economic Growth and Food Security

USAID plans to obligate \$8 million in **Afghanistan** to rehabilitate damaged and neglected irrigation canals and rural wells throughout the country. Activities are under way in 13 provinces throughout the country to repair irrigation infrastructure; strengthen the capacity of government agencies, farmers, and non-governmental organizations (NGOs) to manage their water resources; and provide technical assistance to government planners and policy makers. The effort will help local populations move toward self-sufficiency in income generation and food production.

Approximately 80% of all freshwater consumed on the planet is devoted to agricultural production, often in irrigated systems.

In **Bangladesh**, USAID will obligate a total of \$17 million for a variety of water resources management activities, of which \$2 million will support sustainable fisheries and aquaculture through the Management of Aquatic Ecosystems through Community Husbandry (MACH) project. The program supports a multidisciplinary, multi-sector participatory process of planning and monitoring to enhance the productivity of fisheries and farmlands, and sustainably manage water resources.

In **Colombia**, USAID will obligate \$2 million in irrigation and aquaculture activities to help farming communities adopt sustainable food production practices as an alternative means of income generation to help eliminate reliability on illicit coca production.

In **Nepal**, USAID will obligate \$2 million in 2003 to increase private sector participation in environmentally and socially sustainable hydropower development. The program represents USAID's largest investment in sustainable hydropower, and includes technical assistance and training to streamline legal and regulatory frameworks for private investment and strengthen Nepal's institutional capacity to address environmental and social impacts. Activities are complemented by USAID's South Asian Regional Initiative for Energy and is seeking to attract private sector investment in hydropower to meet domestic demand and boost export earnings.

USAID will obligate \$5 million in the **Central Asian Republics** to support irrigation and drainage structure rehabilitation in **Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan**. The funds also support the development of irrigation water user associations to promote participatory decision-making on water allocation issues.

In 2003 USAID will provide \$2 million to the **Pond Dynamics/Aquaculture Collaborative Research Support Program (PD/A CRSP)**, which brings together an interdisciplinary team of scientists from several U.S. universities and host country institutions to conduct research designed to meet four objectives: 1) optimize the efficiency of aquaculture systems; 2) minimize the negative environmental impacts of aquaculture; 3) explore the socioeconomic intricacies associated with aquaculture; and 4) develop economical and culturally appropriate aquaculture systems and strategies. The PD/A CRSP also conducts related training programs and outreach activities. The PD/A CRSP works in Thailand, Bangladesh, Nepal, Vietnam, Philippines, Mexico, Honduras, El Salvador, Guatemala, Panama, Nicaragua, Peru, Bolivia, Columbia, Ecuador, Brazil, Kenya, Ghana, Tanzania and South Africa.



Strengthening water users' associations is an integral part of USAID's water programs, and promotes conflict resolution and shared management of common water resources.

USAID plans to obligate \$1 million to the **WorldFish Center**, formerly the International Center for Living Aquatic Resources Management (ICLARM), which is one of the international agricultural research centers supported by the Consultative Group for International Agricultural Research (CGIAR). The WorldFish Center conducts research on a wide range of fisheries and aquaculture related topics. The WorldFish Center, which is headquartered in Malaysia, works in many countries including Bangladesh, Philippines, Vietnam, Cambodia, Thailand, Egypt, Cameroon, Malawi, New Caledonia, China, Solomon Islands and in the British Virgin Islands.



4

Disaster Preparedness (\$17 million)

Managing Risks and Disasters to Prevent Loss of Life and Destruction

Hurricanes, tornadoes, floods, and droughts cost many billions of dollars and many thousands of lives each year. The marine systems that cover three-quarters of the earth's surface are vital drivers of global climate, and water and the meteorological cycle have implications for the physical safety of millions of people who suffer from droughts and floods annually. Changes in land use such as urbanization or the clearing of forests can reduce water quality and threaten human populations by exacerbating seasonal flooding and drought; biodiversity is additionally threatened by sedimentation and altered stream flow. Global climate change will only increase the variability and unpredictability of weather patterns and extreme events. Losses can be mitigated by planning, sound development, monitoring and preparedness. The Disaster Preparedness activity area includes two categories of activities described below: *Forecasting and Monitoring*; and *Vulnerability Assessment*.

Forecasting and Monitoring

Forecasting and Monitoring activities are related to the transfer of technology for hydrometeorological monitoring and assessment. This category provides countries with the capacity building needed to operate such systems, and the institutional strengthening required to support effective forecasting and warning systems in the event of floods and storms. *Forecasting and Monitoring* investments include \$8 million (46% of the total for the **Disaster Preparedness** activity area) in 16 countries (Table 5), with no funds obligated for the Latin America and Caribbean Region, or Egypt, Jordan, and West Bank/Gaza.

Vulnerability Assessment

Vulnerability Assessment activities are conducted in arid, semi-arid, or flood-prone areas specifically designed to evaluate and respond to flooding or desertification and improve overall sustainability of livelihood systems of local inhabitants. This category includes support for ecologically based strategies for protection against variability in weather and information to help identify or predict populations at risk of inadequate food production or natural disasters such as droughts and floods. These activities do not, however, include emergency provision of medicinal and food aid, potable water, water containers, or fishing nets delivered in response to droughts, floods and storms. Emergency funds for the rehabilitation of irrigation, water and sanitation systems as a result of extreme events are included under the appropriate sub-categories of *Water Supply*, *Sanitation*, *Wastewater Treatment*, or *Irrigation*. *Vulnerability Assessment* investments include \$9 million (54% of the total for the **Disaster Preparedness** activity area) in 11 countries (Table 5), with no funds obligated for the Latin America and Caribbean Region, or Egypt, Jordan, and West Bank/Gaza.

Regional Distribution and General Trends in Disaster Preparedness Activities

Less than one twentieth of the \$463 million USAID plans to obligate to all water-related activities (\$17 million) represent **Disaster Preparedness** activities (see Figure 2 shown earlier). Of this amount, the largest proportion (38%) will include \$7 million for Bangladesh in Asia and the Near East, followed by \$6 million for 10 countries in Africa, \$4 million for Central Programs, and \$1 million for the five Central Asian Republics in Europe and Eurasia (Figure 10).

Major recipients of these investments are Bangladesh, the Africa Regional Program, the Disaster, Conflict and Humanitarian Assistance (DCHA) Bureau's Office of Disaster Assistance, the Regional Economic Development Service for East and Southern Africa (REDSO/ESA, Ethiopia), the Western Africa Regional Program (WARP), Tajikistan, Kyrgyzstan, and Kazakhstan (Figure 11). **Disaster Preparedness** activities are not included in the Water for the Poor Initiative.

Table 5. FY 2003 USAID Water Obligations for Disaster Preparedness by Country and Region
(Reported in Millions of USD)

The *Disaster Preparedness* Activity Area includes *Monitoring and Forecasting*; and *Vulnerability Assessment*

Country or Operating Unit	Monitoring & Forecasting	Vulnerability Assessment	TOTAL
Africa			
Ethiopia	0.357	0.357	0.714
Somalia	0.010	0.010	0.020
REDSO/ESA ^a (Ethiopia, Kenya, Somalia and Sudan)	0.488	0.488	0.976
WARP ^b (Benin, Ghana, Mali, Niger)	0.633		0.633
Africa Regional Program (AFR) (Benin, Ethiopia, Ghana, Guinea, Kenya, Mali, Niger, Somalia and Sudan)	2.014	2.014	4.028
Total - Africa	3.502	2.869	6.371
Asia and Near East^c			
Bangladesh	0.200	6.400	6.600
Total - Asia and Near East	0.200	6.400	6.600
Egypt, Jordan and West Bank/Gaza	0.000	0.000	0.000
Europe and Eurasia			
Kazakhstan	0.100		0.100
Kyrgyzstan	0.225		0.225
Tajikistan	0.250		0.250
Turkmenistan	0.050		0.050
Uzbekistan	0.075		0.075
Total - Europe and Eurasia	0.700	0.000	0.700
Latin America and Caribbean	0.000	0.000	0.000
Central Programs			
Disaster, Conflict & Humanitarian Assistance (DCHA)/ Office of Disaster Assistance	3.572		3.572
Total - Central Programs	3.572	0.000	3.572
TOTAL - ALL REGIONS	7.974	9.269	17.243

^aRegional Economic Development Service for East and Southern Africa & Greater Horn of Africa Initiative

^bWestern Africa Regional Program

^cExcludes Egypt, Jordan and West Bank/Gaza

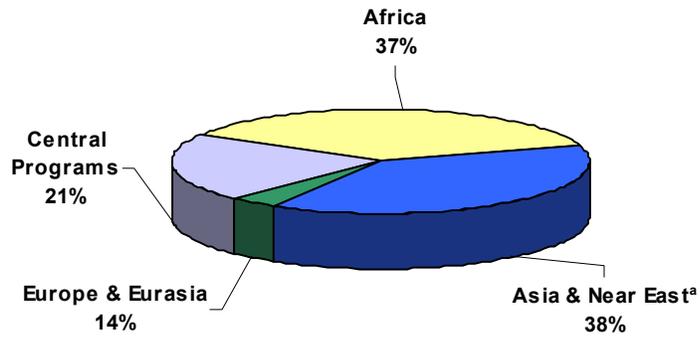


Figure 10. FY 2003 USAID Water Obligations for Disaster Preparedness by Region
 (^aExcludes Egypt, Jordan and West Bank/Gaza)

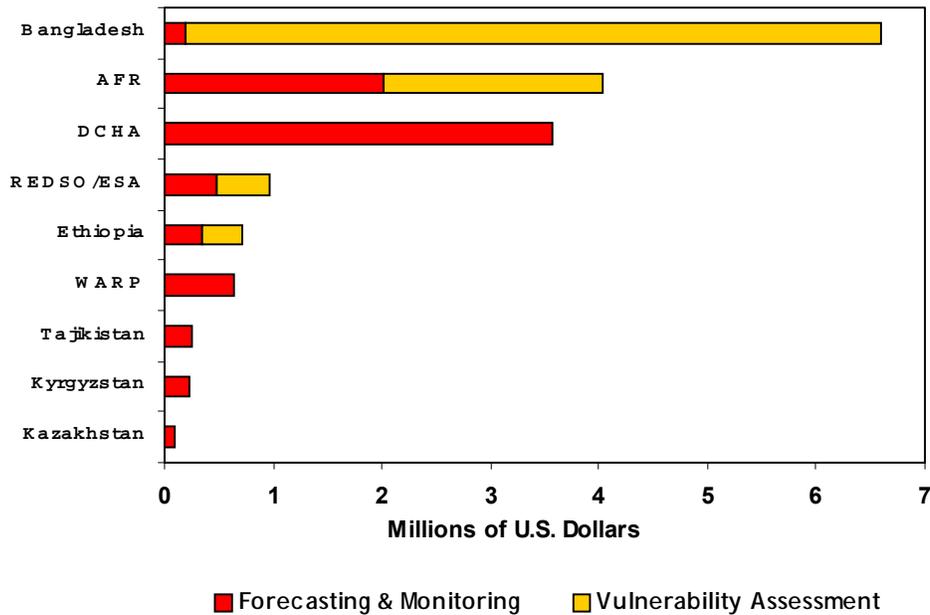


Figure 11. Top Recipients of FY 2003 USAID Water Obligations for Disaster Preparedness

Illustrative USAID Programs in Disaster Preparedness

USAID plans to obligate \$6 million to support the **Famine Early Warning System Network (FEWS NET)**, an information system designed to help decision makers in many countries throughout Africa prevent famine in drought-prone countries. FEWS NET specialists in the U.S. and Africa assess remotely sensed data and ground-based meteorological, crop, and rangeland conditions for early indications of potential famine. Other factors affecting local food availability and access are also carefully evaluated to identify vulnerable population groups requiring assistance. These assessments are continually updated and disseminated to provide decision makers with the most timely and accurate information available. By helping anticipate potential famine conditions and lessen vulnerability, FEWS NET helps save lives, while also promoting a more efficient use of limited financial resources.

In **Bangladesh**, USAID plans to invest \$7 million to improve disaster preparedness in flood-prone communities through the development of response mechanisms and mitigation measures. Disaster contingency plans focus on the evaluation of water infrastructure systems to withstand flood events, and ensuring access to potable water during extreme disaster conditions. USAID's flood proofing program benefited nearly 152,200 people in 225 villages in 2002 by reducing property damage and increasing access to potable water during floods, thereby reducing the incidence of diarrhea.

USAID will invest \$1 million in the five **Central Asian Republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan** through a joint venture with the National Oceanic and Atmospheric Administration (NOAA) to provide snow-monitoring and river-forecasting assistance to the Central Asian Hydrometeorological Services unit. Investments in the transfer of technology and technical capacity building will help water resources managers in the Amu Darya and Syr Darya River basins forecast river discharge from snow pack conditions, thereby facilitating collaborative allocation of water resources throughout the Aral Sea Basin.



This automated meteorological data collection station was installed in Naryn, Kyrgyzstan with USAID support.

Appendix: FY 2003 USAID Water Obligations by Country and Region *(Reported in Millions of USD)*

Water Supply, Sanitation & Wastewater Management Activity Area includes *Water Supply, Sanitation, Waste water Treatment, and Industrial Pollution Control*; *Natural Resources Management* Activity Area includes *IWRM and Watershed Protection, Coastal Zone Management, and Freshwater Ecosystems Management*; *Economic Growth & Food Security* Activity Area includes *Irrigation and Agriculture, Fisheries and Aquaculture, and Small Scale Hydropower*; and *Disaster Preparedness* Activity Area includes *Monitoring and Forecasting, and Vulnerability Assessment*

Country or Operating Unit	Water Supply, Sanitation & Wastewater Mgt	Natural Resources Management	Economic Growth & Food Security	Disaster Preparedness	TOTAL
Africa					
Angola			0.350		0.350
Benin			0.154		0.154
DR Congo	2.087				2.087
Eritrea	2.290		1.700		3.990
Ethiopia	0.714	0.301		0.714	1.729
Ghana	0.622	1.220			1.842
Guinea	0.025	2.284	3.520		5.829
Kenya		0.425			0.425
Madagascar		0.300	0.185		0.485
Malawi	0.410				0.410
Mali	0.347				0.347
Niger	0.145				0.145
Somalia	0.384		0.182	0.020	0.586
South Africa	0.700				0.700
Sudan	0.827		1.565		2.392
Tanzania		0.850			0.850
REDSO/ESA ^a (Burundi, Rwanda, Tanzania & Uganda)		0.390		0.976	1.366
RCSA ^b (Angola, Botswana, Mozambique, Namibia, and Zimbabwe)		0.500			0.500
WARP ^c (Ghana)		0.438		0.633	1.071
Africa Regional Program (AFR) (Ethiopia, Ghana, Guinea, Kenya, Madagascar, and Tanzania)		0.425		4.028	4.453
Total - Africa	8.551	7.133	7.656	6.371	29.711
Asia and Near East⁴					
Afghanistan	0.300		7.621		7.921
Bangladesh	5.400	2.700	1.800	6.600	16.500
India	4.450	3.900			8.350
Indonesia	5.226	4.726			9.952
Lebanon	4.000	1.200			5.200
Morocco	0.400	0.945	0.600		1.945
Nepal			3.228		3.228
Philippines	0.400	4.500	1.000		5.900
U.S.-Asia Environmental Partnership Program (India, Indonesia, Philippines, Sri Lanka, Thailand, and Vietnam)	6.033				6.033
Asia and Near East Regional Programs (Lebanon and Morocco)		2.500			2.500
Total - Asia and Near East	26.209	20.471	14.249	6.600	67.529

Appendix con't.: FY 2003 USAID Water Obligations by Country and Region *(Reported in Millions of USD)*

Country or Operating Unit	Water Supply, Sanitation & Wastewater Mgt	Natural Resources Management	Economic Growth & Food Security	Disaster Preparedness	TOTAL
Egypt, Jordan and West Bank/Gaza					
Egypt ^e	17.000	8.900			25.900
Jordan	33.500	5.850	2.000		41.350
West Bank/Gaza ^f	155.847	8.991			164.838
Total - Egypt, Jordan and West Bank/Gaza	206.347	23.741	2.000	0.000	232.088
Europe and Eurasia					
Armenia	1.200	1.395	0.200		2.795
Azerbaijan	1.876				1.876
Bosnia and Herzegovina	0.350				0.350
Croatia	1.966				1.966
Cyprus	0.515	0.927			1.442
Georgia	1.708	0.738	1.106		3.552
Kazakhstan	0.120	0.325	0.550	0.100	1.095
Kyrgyzstan	0.180	0.425	1.730	0.225	2.560
Macedonia	0.600				0.600
Moldova	0.325				0.325
Tajikistan		0.233	1.230	0.250	1.713
Turkmenistan	0.393	0.080	0.100	0.050	0.623
Ukraine	1.322	0.046			1.368
Uzbekistan	0.500	0.350	1.900	0.075	2.825
Central Asia Regional Program (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan)		0.500	0.300		0.800
Eurasia Regional Program (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan)	1.112				1.112
Total - Europe and Eurasia	12.167	5.019	7.116	0.700	25.002
Latin America and Caribbean					
Bolivia	2.626	0.564	6.230		9.420
Brazil	0.025	0.100	0.125		0.250
Colombia	5.475		1.600		7.075
Dominican Republic	0.951				0.951
Ecuador	2.500	4.473	4.000		10.973
El Salvador	3.758	2.337	0.205		6.300
Guatemala	0.300	0.300			0.600
Haiti	0.870	1.200	1.840		3.910
Honduras	3.256	1.238	0.372		4.866
Jamaica	1.156	2.312			3.468
Mexico		0.937			0.937
Nicaragua	0.050		0.350		0.400
Panama		7.000			7.000
Paraguay	0.210	0.333			0.513
Peru	8.267	1.217	3.375		12.859
Caribbean Regional Program (Dominican Republic, Haiti, and Jamaica)	0.833	1.666			2.499

Appendix con't.: FY 2003 USAID Water Obligations by Country and Region
(Reported in Millions of USD)

Country or Operating Unit	Water Supply, Sanitation & Wastewater Mgt	Natural Resources Management	Economic Growth & Food Security	Disaster Preparedness	TOTAL
Latin America and Caribbean con't.					
Central America Regional Program (El Salvador, Guatemala, Honduras, and Mexico)		0.400			0.400
Latin America Regional Program (Bolivia, Brazil, Colombia, Ecuador, El Salvador, Honduras, Nicaragua, Paraguay, and Peru)	0.065	0.700			0.765
Total - Latin America and Caribbean	30.342	24.777	18.097	0.000	73.216
Central Programs					
Disaster, Conflict & Humanitarian Assistance (DCHA)/ Office of Disaster Assistance	24.770			3.572	28.342
Economic Growth, Agriculture & Trade/ International Water Management Institute		0.250	0.500		0.750
Economic Growth, Agriculture & Trade/ PD/A CRSP ^e			2.150		2.150
Economic Growth, Agriculture & Trade/ WorldFish Center			0.675		0.675
Economic Growth, Agriculture & Trade/ Water Team		2.434			2.434
Global Health/Environmental Health Program	0.800				0.800
Global Health/Point of Use Water Quality	0.300				0.300
Urban Programs	0.175				0.175
Total - Central Programs	26.045	2.684	3.325	3.572	35.626
TOTAL - ALL REGIONS	309.661	83.825	52.443	17.243	463.172

^aRegional Economic Development Service for East and Southern Africa & Greater Horn of Africa Initiative

^bRegional Center for Southern Africa

^cWestern Africa Regional Program

^dExcludes Egypt, Jordan and West Bank/Gaza

^eIncludes \$17 million in prior year carryover funds to be obligated in FY 2003

^fIncludes \$157 million in prior year carryover funds to be obligated in FY 2003

^gPond Dynamics/Aquaculture Collaborative Research Support Program