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# GLOBAL WATERS

USAID's Newsletter for  
Integrated Water  
Resources Management

Welcome to *Global Waters*: Your Resource  
for USAID Water-Related Activities



Photo Credit: AECOM International

## In Focus



Newsletter to Highlight  
Critical Issues, Challenges,  
Innovations in Water  
Resources Management



Cross-Border Project  
Balances Human,  
Ecosystem Water  
Needs in East Africa

## Real Impact



Successful  
International Water  
Response in Haiti

### NEWS FROM THE FIELD



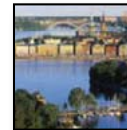
- **Philippines** – Striking Balance Between Productive Fisheries and Biodiversity Conservation Efforts
- **Niger** - Multiple-Use Water Approach Brings Multiple Benefits in West Africa

### JUST PUBLISHED



- Senator Paul Simon Water for the Poor Act Report to Congress, 2010

### RECENT & UPCOMING EVENTS



**September 5, 2010:**  
World Water Week in  
Stockholm: The Water  
Quality Challenge



**May 14, 2011:**  
International Marine  
Conservation Congress



**May 23, 2011:**  
International Conference  
on Water Resources  
Management



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## In Focus

# Welcome to Global Waters!



Photo Credit: MAIN: DAI  
Inset: Patrick Smith

**IRRIGATION AT WORK:** Nepalese Boy With USAID-Installed Irrigation System

Welcome to the first issue of *Global Waters*, a newsletter dedicated to the broad portfolio of water-related activities of the United States Agency for International Development (USAID). Water in its many forms – fresh, brackish, or marine – is central to the success of sustainable development. All life depends on freshwater and there is simply no substitute for it. Yet for many countries, including a growing number in the developing world, water is becoming increasingly scarce. As populations continue to grow and along with them hopes and expectations for improved well-being and affluence, the demand for freshwater is seemingly without bound. During the past century, global population tripled while demand for freshwater grew six-fold, and that demand is now doubling every 20 years.

Water resource managers have an exceedingly difficult challenge. They are responsible for providing adequate supplies of good quality water for multiple uses and sectors, while managing the inevitable conflict that comes about when one sector or one part of a country is not allocated all that it wishes to have. Drinking water and sanitation for people, agriculture, energy, and industry all compete for the same limited supply of water. Often forgotten or neglected is the fact that ecosystems – the ultimate source for sustainable flows of good quality water – are dependent on freshwater, too, for their continued health and production of myriad goods and services.

To meet all of these needs (and more) requires societal vision and consensus on the allocation of available water across all sectors and the environment. And it requires national policy that is based on sound science and understanding of both today's and tomorrow's picture of supply and demand. But the practice of water resources management is no longer simply about the science and technical aspects of water service delivery.

Rather, it is about engaging with the people of a place to become committed stewards of this most precious of all natural resources. This is the business of integrated water resources management (IWRM).

The challenges of IWRM are indeed many. Some 900 million people lack access to an improved source of drinking water, and three times that number lack access to sanitation. Agriculture consumes on average 80-

**All life depends on freshwater and there is simply no substitute for it.**

90% of all freshwater in the developing world, yet growing demand for food will require new sources of water and/or greater efficiency and productivity in the water already used. Energy security for a growing number of countries will mean even more emphasis on hydropower, biofuels, and cooling, with implications for ecosystems and the natural functioning of river basins. These challenges (and

many more) must be tackled with increasing urgency in the face of climate change, for water is the primary medium through which climate change impacts will be first felt by hundreds of millions of people in the developing world. The stakes are indeed very high.

Our objective is to share with readers the many challenges and opportunities, approaches, and lessons learned that reflect upon USAID programming decisions as we continually evolve to meet the needs of this multi-dimensional and dynamic sector. We hope you enjoy *Global Waters* and welcome your comments, ideas, and suggestions!

~ *The USAID Water Team*

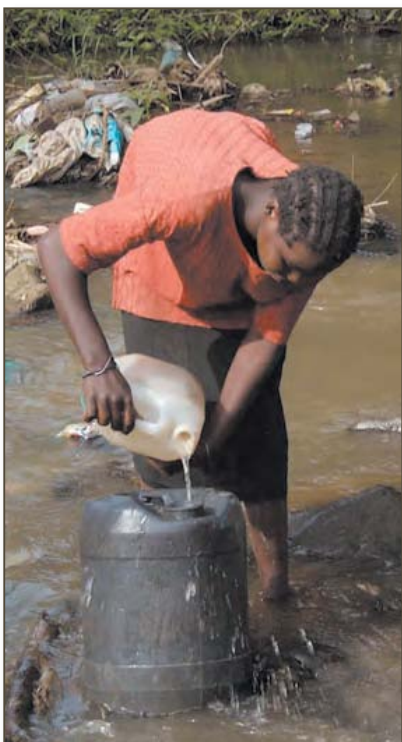
Please send your comments & suggestions to: [waterteam@usaid.gov](mailto:waterteam@usaid.gov)



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Photo Credit: Fred Hoogerwerf/WWF



**DIVERSE NEEDS:** Fast-growing rural and urban populations have increased the demand for water in the Mara River Basin.

Mara River Basin (TWB-MRB) Project has faced in Kenya and Tanzania.

The Mara River, some 395 kilometers long (245 miles), begins its flow southward in southern Kenya. It passes through Kenya's Masai Mara National Reserve, and then into the adjoining Serengeti National Park, in Tanzania. Those two parks are home to some of the world's highest concentrations of animal herds. The annual migrations of more than one and a half million wildebeest, zebras, and gazelles are a major tourist attraction—and a substantial source of income for the two countries.

The water needs for humans and ecosystems are diverse across the Mara River Basin. The northernmost section of the basin is the forested Mau Escarpment, in Kenya. The Rift Valley area is the source of numerous springs, streams, and the Amala and Nyangores, the two rivers that converge and form the Mara River. Ongoing forest clearing, however, threatens the water supplies for small and medium-sized farms in that region, as well as other, downstream water users.

The Mara River passes through grasslands where Masai people pasture their livestock. This area includes many

## In Focus

# Cross-Border Project Balances Human, Ecosystem Water Needs in East Africa

Sharing water resources between two neighboring countries can be a difficult challenge at any time. Add in fast-growing urban and rural human populations, increasing acreage devoted to agriculture, and the desire to preserve one of the world's most treasured natural wonders, and you'll have some idea of the issues that the Transboundary Water for Biodiversity and Human Health in the

small- and large-scale farms, some of which are irrigated using Mara River water. Further to the south are the adjacent parks in Kenya and Tanzania. There, the river flow is vital to maintaining the biodiversity of those protected areas. The last area the river traverses before discharging into Lake Victoria is the flood plains in Tanzania. High human and livestock population densities and subsistence agriculture characterize this section.

To help meet these varied water demands across the Mara River Basin, in 2005 the U.S. Agency for International Development (USAID) provided funding to launch the TWB-MRB project. The project is now being implemented by the Global Water for Sustainability (GLOWS) program, a consortium that is led by Florida International University. On the TWB-MRB project, GLOWS partners with CARE, World Vision International, and the World Wildlife Fund (WWF).



Photo Credit: Balan Thrandil

**THIRSTY NEIGHBORS:** The annual migration of one and a half million wildebeest and other hooved animals in the Mara River Basin is a major tourist attraction and income generator for Kenya and Tanzania.

The TWB-MRB project began with initial studies of the quantity and quality of the water in the Mara River Basin. The project also started working with national, regional, and local government units and other organizations on the difficult task of planning for the multiple, varied water needs throughout the basin. In the Masai Mara National Reserve, project staff assisted tourist hotels and lodges to improve their waste-water disposal practices. ►



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**“With the Mara River Basin we’ve ...increased awareness at the policy level of the importance of the river basin.”**

The project has helped local communities to develop new water services, refurbish nonfunctioning water systems, and improve sanitation services. There has also been support for setting up water user associations and village savings and loan groups, emphasizing the participation and empowerment of women and the long-term sustainability of the new organizations. Forming those local groups, as well as entities that involve participation from across the river basin, has built the capacity of grass-roots civil society organizations to shape decisions in both Kenya and Tanzania related to the Mara River Basin.

More recently, the project completed an environmental flows assessment (EFA) for the river basin. The EFA quantified the water needs through the basin and recommended steps to ensure that those competing demands are satisfied. The assessment was officially adopted by the Lake Victoria Basin Commission of the East African Community. That high-level endorsement will be key to the effective, long-term cross-border management of the basin’s water resources in both countries.

Underlying much of the project’s success has been an ongoing emphasis on developing solid scientific information and then applying that new knowledge in guiding realistic policy and undertaking effective local and regional activities.

In some water projects, says Maria Donoso, the GLOWS program director, “you can see pure research studies that don’t get translated into policy—



**ONE ACRE AT A TIME:** Increasing acreage devoted to agriculture is one of the many needs putting pressure on water supplies in the Mara River Basin.

and vice versa. They’re not successful because they don’t connect with each other.”

“With the Mara River Basin,” Maria affirms, “we’ve been able to translate the environmental flows assessment into a change of direction and into an increased awareness at the policy level of the importance of the river basin.”

Photo Credit: Fred Hoogenorst/WWF



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## Real Impact

# Successful International Water Response in Haiti



**THE WAIT FOR WATER:** Early in the response, people queued for water delivered directly by water trucks.

## WASH Cluster System Works, UNICEF and DINEPA Lead Disaster Relief Effort

Trevor White's bags were packed. As a water, sanitation, and hygiene (WASH) technical advisor for the Office of U.S. Foreign Disaster Assistance (OFDA) of the United States Agency for International Development (USAID), he was to be in Zimbabwe on January 14. Then, on January 12th, a 7.0 earthquake hit the country with the least access to improved water and sanitation in the Western Hemisphere. Five days later, Trevor was in Haiti.

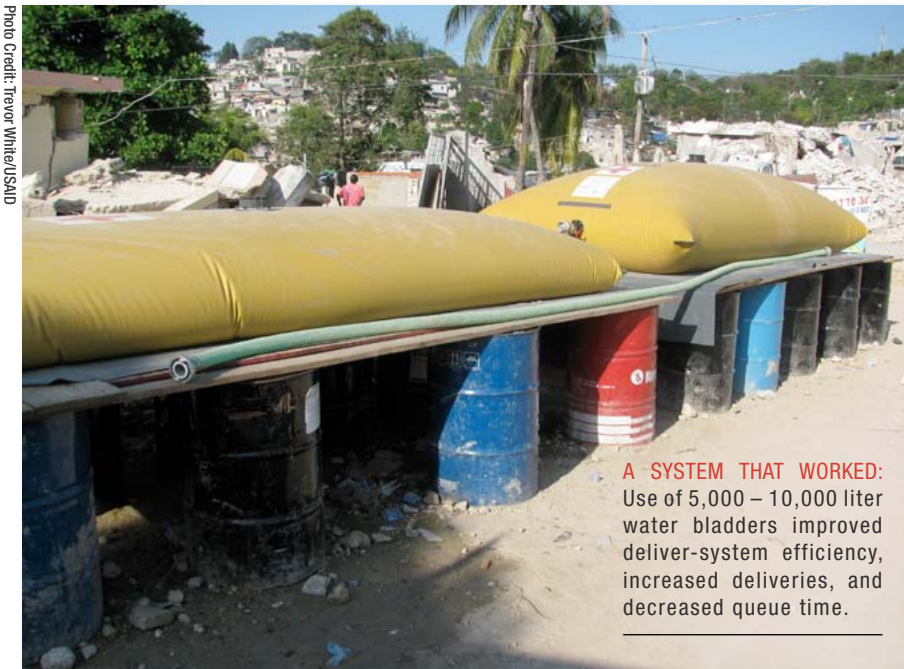
"Port-au-Prince was in chaos," he reported. "The port was devastated; the airport was affected. Everything had to be set up from scratch. Haiti was an urban disaster. All responders were working 20 hour days under serious stress."

The quake's 230,000 death toll included 17 percent of Haiti's federal work force. Sixty percent of Port-au-Prince's buildings were leveled, including 28 of 29 government buildings, along with computers, vehicles, phones, and other infrastructure. More than 1.5 million displaced people had no immediate access to safe drinking water or a toilet, and were at risk from sanitation- and water-related diseases. ►



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**A SYSTEM THAT WORKED:**  
Use of 5,000 – 10,000 liter water bladders improved deliver-system efficiency, increased deliveries, and decreased queue time.



**GRATEFUL RECIPIENT:** Girl filling container at a bladder tap stand in a camp

**If a water delivery system had not been established so early, things could have gone very differently.**

In 2005, after seeing the response to the 2004 Southeast Asia tsunami disaster, the United Nations established a “cluster system” approach to coordinate disaster response around the world specifically by sectors such as WASH, shelter, health, and nutrition. UNICEF was tasked to lead Haiti’s WASH earthquake cluster. In 2009, Haiti established La Direction Nationale d’Eau Potable et d’Assainissement [National Directorate for Water Supply and Sanitation] (DINEPA), a government regulatory authority that had begun to reform Haiti’s water and sanitation system, which had been operating at a budget deficit and providing questionable water. DINEPA, like USAID/OFDA, is part of Haiti’s WASH cluster. DINEPA, established just nine months earlier, immediately took charge and, with UNICEF, began to co-lead the WASH response.

“DINEPA tested wells and approved three good sources,” Trevor continued. “Within two or three days, they had established a fleet of privately owned chlorinated water tankers, fuel reserves, and a delivery system.

“At first,” he said, “trucks just had to park and deliver water - an inefficient process. Soon after, non-governmental organizations (NGOs) had set up water bladders and tap stands in most of the largest camps. When I visited those camps, the water bladders were full and there was no one in queues - a good sign that water was in supply. There were few complaints about water. Camp residents primarily asked about food and jobs. If a water delivery system had not been established so early, things could have gone very differently.

“This was an international emergency WASH response success,” Trevor added. “No other sector in Haiti had a government department leading a cluster. I saw DINEPA create an environment of cooperation - and save lives.”

Jay Graham, a USAID environmental health advisor, echoed that sentiment. Jay first arrived in Haiti in February. He is encouraging USAID/Haiti to use transformative efforts to empower DINEPA to complete the reform and to capacity-build with other large donors.

“DINEPA’s personnel are very committed,” Jay remarked. “You can tell from their prior work in Haiti’s poorest communities, and because they are asking NGOs to help this group especially,” he added. “I was surprised. You hear that the cluster system doesn’t work. Here is a WASH cluster response that is effective. The cluster works fast; test results show improved water quality; DINEPA places water quality test results and other data on-line; they are transparent, sensitive to requests from stakeholders, open to criticism and NGO challenge, and forthright about sharing contacts. DINEPA and UNICEF give each stakeholder a chance to speak at cluster meetings, and they encourage Haitians to participate in the meetings.”

To date, USAID/OFDA has given \$30.2 million in funding to support emergency WASH activities ►



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Photo Credit: Trevor White/USAID



**COMMUNITY EFFORT:** Camp residents filling water containers from a water-bladder fed tap stand

in Haiti. In addition, USAID/OFDA has donated 11 water purification units; 106,592 hygiene kits; 166,600 10-liter water containers; 30,000 bottles of water; 22 water bladders; and 20 desludging trucks, used to empty latrines.

At a July 19 USAID media roundtable event, Haiti Task Team Coordinator, Paul Wiesenfeld said, "... we feel pretty good about the immediate humanitarian response. When I say we, I really speak for the

**"When I say we, I really speak for the international community because the United States was [only] one player in it."**



Photo Credit: Jay Graham/USAID

**RELIEF ON THE WAY:** A truck delivers high-quality water to one of Haiti's 1300 camps, "Terrain Acra," host to 20,000 internally displaced people in the center of Port-au-Prince.

international community because the United States was [only] one player in it."

Trevor agreed. "It is all those relationships and history with organizations and with DINEPA that enables us to work well together, that enables us to know how we all work, that brings about our success. One donor does not do it all. It is all a puzzle that is solved by having good relationships with other donors, NGOs, governments, and with those affected. It is important to see this as a holistic approach."

Trevor's first trip to Haiti lasted five weeks; he has returned four times. Of leaving Haiti, he laments, "Well, of course you don't want to leave. There is so much to do."

Trevor hopes to travel to Zimbabwe this fall.



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## News from the Field

### Fishing Upstream:

### USAID's Approach to Striking Balance between Productive Fisheries and Biodiversity Conservation Efforts in the Philippines

Photo Credit: Sean Killian/Chemonics International



**PHILIPPINES FISHERMAN:** Fishers in the Philippines and around the world are often the poorest members of society. Their livelihoods depend on diverse and abundant wild fisheries. Many of USAID's biodiversity programs work to restore and protect marine and coastal ecosystems while also providing sustainable harvests of fish to local communities.

Ancient Chinese philosopher Lao Tzu once said that if you teach a person to fish you have fed him for a lifetime. However, if that person teaches others unsustainable fishing practices that produce long-term harm to the environment, such as overfishing, illegal fishing, and habitat degradation, will there be any resources left to feed anyone? In short, no. Not only would you find a hungry person, but you'd find over-populated communities of men, women, and children who would be negatively impacted by the increased demand for fish, leading to poverty and over-stressed coastal resources.

The Philippines is one of 16 countries where more than two-thirds of the world's biological diversity is concentrated. Biodiversity in the region is being

threatened, with 70% of coral reefs destroyed, and the use of unsustainable fishing practices compromising food security. Fishing communities rely heavily on the fish caught as their main source of income and food. Productive fisheries that encourage, rather than threaten, biodiversity conservation efforts are of critical importance, particularly to the coastal fishers battling poverty in Bongao, Tawi-Tawi in the Philippines.

USAID has provided critical assistance to several fishing communities in the Philippines through its Fisheries Improved for Sustainable Harvest (FISH) project. The initiative's goal is to conserve biological diversity in ecologically and economically important marine ecosystems in the Philippines. The project is expected to increase marine fish stocks by at least 10% from the 2004 baselines in four areas over seven years. These project sites have been identified by USAID as being important biodiversity conservation areas: the Calamianes Islands in the

province of Palawan, the Danajon Reef in the province of Bohol, the province of Tawi-Tawi, and the province of Surigao del Sur.

For many years, local fishers from the Philippine province of Tawi-Tawi, an area regarded by locals as an ideal fishing location, would collect fish using "fish pens" or "corrals." Unfortunately, those who lived elsewhere in town were suffering from a fish catch decline that was starting to alarm local officials and surrounding fishing communities.

In order to halt the decline, USAID provided technical assistance to the local government to set up a marine sanctuary, which would ensure more productive fisheries by protecting critical fish habitat. Real and lasting impact was felt after just one year of implementation.





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Photo Credit: Sean Kilian/Chemonics International



**REPAIRING NET:** Photo taken in a USAID FISH Project site at Lanuza Bay, Surigao del Sur, Philippines

“Our [fish] corrals are yielding more because there are now so many fish inside and outside the sanctuary. Now all my relatives support the sanctuary,” said Nasirin “Kah Nas”, a guard for a USAID-supported marine sanctuary in the Philippines.

By supporting the efforts of local government, USAID, the Department of Agriculture’s Bureau of Fisheries and Aquatic Resources (DA-BFAR) were able to elicit community cooperation utilizing a multi-level, integrated law enforcement approach that encourages compliance with the new sanctuary regulations. Because of USAID’s continued support, the FISH Project has led to the establishment and/or strengthening of 32 Marine Protected Areas (MPAs), spanning 1,913 hectares (4,727 acres). The MPAs are now a centerpiece of fisheries management systems in 29 municipalities.

After identifying program barriers to growth, control, and maintenance, fisheries management mechanisms

were demonstrated to have directly contributed to increases in fish stocks, allowing USAID to meet its objectives for the FISH Project. Project results showed that fish biomass across all sites increased 19 percent from a 2004 baseline, much higher than its original target of 10 percent.

If our person who was taught how to fish follows USAID and its implementing partners’ integrated approach to creating productive fisheries, there will be plenty of resources to feed everyone. Not only will there be plenty of fish in the sea, but the fish will be varied in species and their habitats will be well preserved in a vibrant ecosystem—an ecosystem that will be able to accommodate and rise to future demands for at least the foreseeable future.



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## News from the Field

# Multiple-Use Water Approach Brings Multiple Benefits in West Africa

In many cases around the world, government officials and others have taken a top-down approach in introducing new water systems, including erroneously assuming—or even mandating—that people use water for only a single purpose. For example, only for domestic use in the home or for productive uses such as crop irrigation and livestock.

A better approach, the U.S. Agency for International Development (USAID) and its partners have found in recent years, is to develop “multiple-use” water services or systems (MUS). With a MUS approach, planners presume that people need water—and will use it—for a range of purposes, from drinking and cooking in the home to generating income from farming and other economic activities.

In the West African country of Niger, that MUS approach has certainly made a difference to Hadiza Ali and her husband, Ali Mohammed. The two of them and other family members live in the village of Kabori, in the administrative region of Zinder, in southern Niger.

In the past, Hadiza used to walk six times a day to collect water from a traditional well. That well provided drinking water for both humans and livestock. The well opening is at ground level and so any spilled water and rain water could carry dirt and animal waste back into the well. That increased the chances that diarrhea-



**SAFE DRINKING WATER:** With new rope pumps like this one, thousands of villagers in Niger have more convenient access to safe drinking water.

causing waterborne illnesses would be spread, especially to the village’s children.

Now, with a new water supply developed with support from USAID and Coca Cola, Hadiza no longer walks to the traditional well. Instead, she uses a rope pump that is much closer to her home and that provides cleaner, safer water.

Her husband has also benefitted from an improved water supply. Before, Ali used to draw water from a well and then carry it to each plant individually. “The difficulty of watering plants kept us from growing other crops,” he says. ▶

Photo Credit: Wmrock



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Ali now waters his garden using a new treadle pump and a series of irrigation canals. Ali has doubled the size of the garden and added new crops, including onions, cabbages, and lettuce. The garden now provides the family a year-round source of nutrition and increased income.

The project serving Kabori and other Zinder communities has been implemented for USAID by Winrock International, a U.S.-based nonprofit organization, since late 2008. Called Water for Health and Wealth: Multiple-Use Water Services in Niger, the Winrock program has so far improved water access for more than 13,500 people, helped over 80 gardeners increase their crop yields, provided hygiene training for more than 17,000 persons, and installed and provided training for seven experimental aquaculture ponds.

Besides improving health conditions, the MUS project has generated new employment in the Zinder region. Both the rope pumps and the treadle pumps are manufactured locally, using completely local materials.

The locally manufactured pumps have proved to be much more reliable than hand pumps that some other organizations have installed elsewhere in Niger. Hand pumps provide safe water but can be difficult and expensive to maintain. Some replacement parts for the hand pumps that are common in Niger cost over \$500. That is far beyond the resources of most villagers, many of whom survive on less than \$2 per day, earned from farming and raising livestock. In contrast, repairs to the new Zinder pumps can be made by local metalworkers, with spare parts costing under \$25.

Winrock's multiple-use strategy in Niger was based on a systematic cost-benefit assessment of single-use versus multiple-use water services and their potential suitability for South Asia and sub-Saharan Africa. Winrock completed that study in 2007, with financing from the Bill & Melinda Gates Foundation. The results of that evaluation indicated that while multiple-use services can initially cost more than single-use systems, they offer significant advantages over the long term.

Hadiza and Ali have certainly seen the benefits for their village. "We like the project," says Ali, "because we can improve our lives. You help us at first, and we can continue to improve."



Photo Credit: Winrock

**LOCAL POWER:** In Niger, locally manufactured water pumps are less expensive and easier to maintain than other pump types that have been tried in the country.

**For more information, visit:**



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## Just Published Select USAID-Related Publications

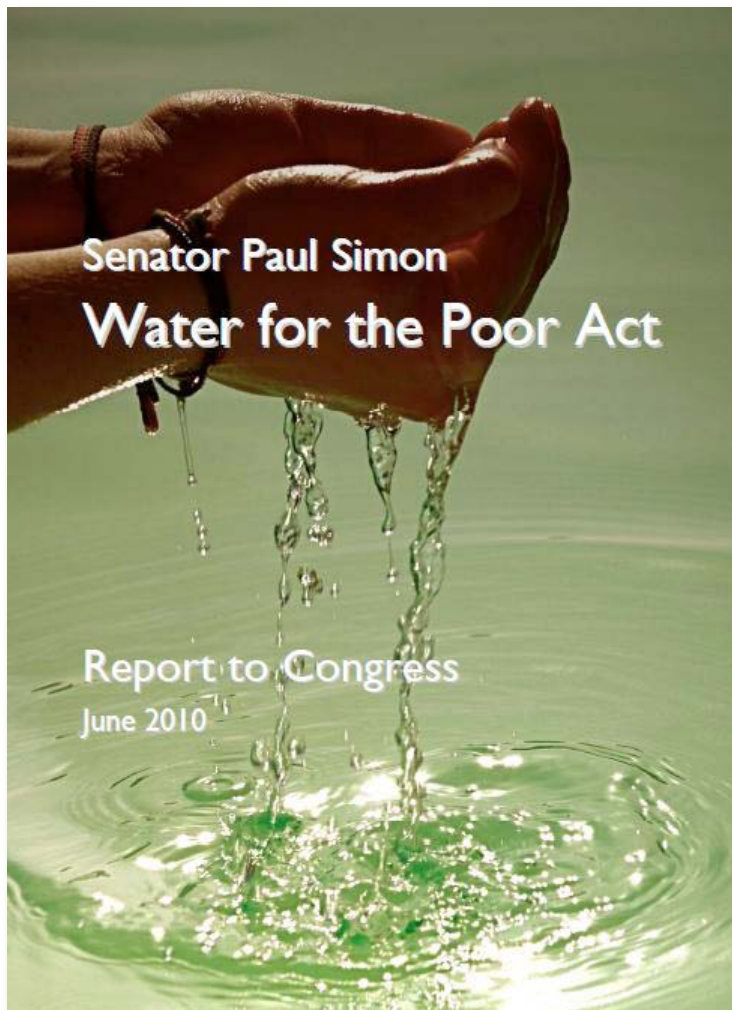
### State Department Releases Fifth Annual Water for the Poor Report

On August 13, 2010, the U.S. Department of State released the Senator Paul Simon Water for the Poor 2010 Report to Congress describing U.S. efforts to expand access to safe drinking water and sanitation, improve water resources management and increase water productivity in developing countries.

The Senator Paul Simon Water for the Poor Act of 2005 requires the Secretary of State, in consultation with the U.S. Agency for International Development (USAID) Administrator, to submit an annual report to Congress outlining the U.S. Government's strategy and progress in achieving the objectives of the Act.

The United States is committed to reducing water-related diseases and to increasing access to safe drinking water and sanitation in countries with critical needs. As Secretary Clinton noted on World Water Day (March 22, 2010): "It's not every day you find an issue where effective diplomacy and development will allow you to save millions of lives, feed the hungry, empower women, advance our national security interests, protect the environment, and demonstrate to billions of people that the United States cares, cares about you and your welfare. Water is that issue."

**Key Results:** In FY 2009, the United States (primarily through USAID and the Millennium Challenge Corporation) invested about \$774 million for all water sector and sanitation-related activities in 62 developing countries. Of that amount, USAID invested more than \$481 million in drinking water and sanitation-related activities. As a result of USAID investments, some 5.7 million people received improved access to safe drinking water and 1.3 million received improved access to sanitation during FY 2009. Other U.S. Government agencies made unique contributions to water and sanitation that greatly magnify our overall effectiveness. In many cases these agencies made both programmatic and non-financial contributions. From 2005 to 2009, the United States invested more than \$3.4 billion for all water sector and sanitation related activities.



In her 2010 World Water Day speech, Secretary Hillary Rodham Clinton asked Under Secretary of State for Democracy and Global Affairs Maria Otero and USAID Administrator Rajiv Shah to review current efforts and identify specific steps to strengthen the United States' capacity to deliver sustainable, measurable results. This process is underway.



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## Recent & Upcoming Events



**SEPT 5, 2010**

### **World Water Week in Stockholm: The Water Quality Challenge**

**September 5 – 11, 2010**

World Water Week in Stockholm is the annual meeting place for the planet's most urgent water-related issues. This year will mark the 20th anniversary of the event. Organized by the Stockholm International Water Institute (SIWI), the meeting brings together experts, practitioners, decision makers, and leaders from around the globe to exchange ideas, foster new thinking, and develop solutions.

The U.S. Agency for International Development (USAID) is one of the official convening organizations for the event this year. In addition, USAID staff or contractors will be giving presentations at two of the meeting's seminars.

<http://www.worldwaterweek.org/sa/site.asp?site=460>

**MAY 14, 2011**

### **International Marine Conservation Congress**

**May 14-18, 2011**

The 2nd International Marine Conservation Congress: Making Marine Science Matter will be held at the Victoria Convention Centre, in Victoria, British Columbia, Canada. The event is being put on by the Society for Conservation Biology (SCB) Marine Section. The IMCC meeting will bring together marine conservationists from diverse disciplines for discussion, innovation, and development of science-based products that inform policy change and implementation. The congress will include plenary, contributed presentations, symposia, and workshops.

<http://www.conbio.org/IMCC2011/>

**MAY 23, 2011**

### **6th International Conference on Sustainable Water Resources Management**

**May 23 – 25, 2011 Riverside, California, USA**

The sixth International Conference on Water Resources Management will present the more recent technological and scientific developments associated with the management of surface and sub-surface water resources. Numerous water-related conferences organized by the Wessex Institute of Technology have been successfully held in many locations throughout the world. Water Resources Management is one of the most important conferences in the series.

<http://www.wessex.ac.uk/11-conferences/waterresources-management-2011.html>