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VOLUME III ISSUE IV DECEMBER 2012

# GLOBALWATERS



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DEVELOPMENT WITH  
A SIDE OF DRAMA  
THE FUTURE OF FOOD



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**T**he United Nations has declared 2013 the International Year of Water Cooperation. As we get ready to ring in the New Year, we look at new ways to partner up to tackle the issues that matter.

Cooperation sometimes starts at home. In anticipation of World Wetlands Day in February, we take a deeper look in this issue's cover story at programs that simultaneously work toward conservation and WASH goals. While these programs require intense coordination between different practitioners whose work is usually independent, we have found that the payoffs are immense and that healthy ecosystems and communities are truly intertwined. The proof is in the wetlands. In the parks around the Okavango Delta, where several of these initiatives take place, acacia trees tower, lions roar, and indigenous communities thrive.

Cooperation can also transform cities. With the United Nations Day of South-South Cooperation on the horizon, we look at the WaterLinks project, which has made waves in Asia by facilitating over 60 partnerships between urban water operators. The results so far are heartening: Malaysians helped Indians to provide continuous water services, Koreans helped Thais to provide clean, safe water, and more than one million people throughout Asia gained improved access to water.

As the New Year approaches, the time is ripe to look at persisting problems from new angles. Global climate change has wreaked havoc throughout the world through disasters and droughts. But what about its relationship with food security? In this issue, we bring you captivating snapshots of climate change impacts on food, from the coral reefs of the Seychelles to the rice paddies of Bangladesh, and discuss some of the ways USAID is helping farmers, fishermen, and the famine-stricken to adapt.

All of these programs bring change thanks to the involvement of stakeholders on the ground. We continue to focus on engaging stakeholders, and work hard to raise awareness of water issues in the developing world. This edition's Real Impact story looks at novel ways that USAID has raised awareness, including reality shows, talk shows, and soap operas. These engrossing radio and television programs not only capture the imaginations of millions with universal stories about love, family, and identity, but also educate them on everything from WASH to natural resource management.

Happy holidays and we look forward to working with you throughout the International Year of Water Cooperation!

*The Water Office*  
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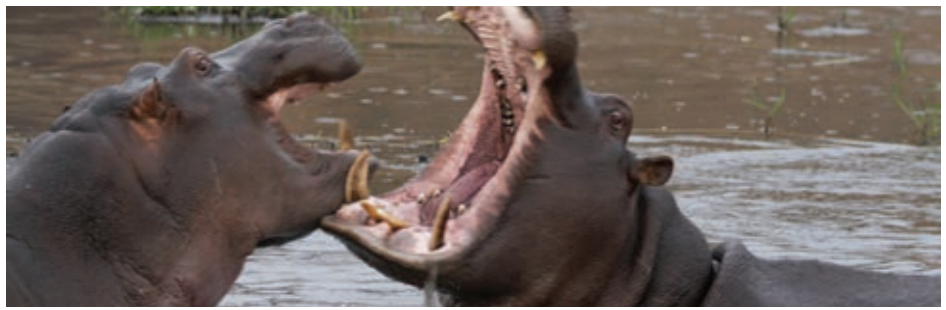
**WOMEN UNITE** Members of a Nepalese mother's group, supported by USAID's Nepal Flood Recovery Program, learn how to plant nutritious and productive crops in their home gardens, increasing both their incomes and overall food security.

Photo Credit: Fintrac, Inc.



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# DOUBLE TH



**DOUBLING UP:** Hippos play in the waters of the Okavango River. Thanks to programs linking conservation and WASH there, its many animals have thrived.

*Photo Credit: Steve Johnson, SAREP/USAID*



# THE PROGRESS COMBINING CONSERVATION AND WASH

**T**he Okavango River drops down from its headwaters in Angola and flows 1,100 kilometers through Namibia and Botswana, its waters rushing into a colossal expanse of wetlands called the Okavango Delta. This ecologically-rich region is home to buffalo, zebra, wildebeest, elephants, lions, cheetahs, hundreds of birds and plant varieties, and a diversity of indigenous communities. The futures of the people and the wildlife here are intertwined. They are threatened by drought and desertification, land degradation, population pressure, and stress on water resources.

USAID's Southern African Regional Environment Program (SAREP) has stepped in to help with a new approach to development that couples biodiversity management with water, sanitation, and hygiene (WASH) goals. SAREP is one of a smattering of development projects tackling environmental and health challenges simultaneously. These programs are based on the recognition that the health of ecosystems and the health of communities are interdependent. By integrating these two goals, it is possible to multiply impacts on both the environment and the people who derive their health and livelihood from it.

## A NEW WAVE

USAID is a pioneer of integrative approaches and has backed several projects that link WASH goals with forestry, agriculture, and natural resource management. This integration helps engage stakeholders and encourages them to participate. David Bonnardeaux, author of a new report from USAID and the Africa Biodiversity Collaborative Group titled, "Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa," said that combining WASH and environmental goals makes the results of conservation more concrete to stakeholders. "The health aspects of these programs provide measurable, tangible, and relatively immediate benefits to people," he said.

Furthermore, targeting environmental and WASH goals simultaneously makes logistical sense. Tim Resch, bureau environmental advisor at the USAID Bureau for Africa said, "The primary benefit from combining water conservation goals with WASH objectives is that the people in Africa with the least access to water and sanitary services are living in the most remote rural and biologically rich areas, and so when we pay attention to our objectives in water and our objectives in biodiversity conservation, we find we are working in the same geographic area."

But the most compelling reason for tackling environmental and health challenges together is that the two are inextricably linked. While it is common knowledge that polluted air, dirty water, and compromised ecosystems lead to more disease, it is less well known that the inverse is true as well: Unhealthy populations are actually more likely to mistreat their environment.

Field workers affiliated with the University of Rhode Island Coastal Resources Center surveyed households

in Tanzania to find out how poor health might affect environmental protection. The team found that, "those families with sick individuals are more likely to break environmental management rules and are more likely to poach inside the national park or more likely to dynamite fish," said Elin Torell, a Coastal Resources Center coastal manager.

## REJUVENATING WETLANDS AND LIVELIHOODS

The SAREP team incorporates this integrated approach and began working in 2010 on four main objectives: Protecting biodiversity and ecological systems; increasing access to improved water and sanitation services; responding to global climate change; and supporting HIV/AIDS prevention and treatment.

Steve Horn, regional environmental program manager at the USAID/Southern Africa Botswana Field Office, said that combining these goals has been effective for the program. "With both biodiversity conservation and WASH funding, SAREP is better equipped to be responsive to addressing the very real livelihood concerns of local communities, but always in the context of improved biodiversity conservation and sustainability," he said.

One way that SAREP has served these different goals is by encouraging community governance of river basin resources. Local leaders are adopting an approach that addresses their communities' diverse health and livelihood needs through land use planning. "This planning approach has helped us to see how all the members of our community can find a place on our land where they can realize their collective dreams and aspirations," said Omphemetse Boitshwarelo, vice chair of the Tubu community's Joint Management Committee.



**PIPELINE TO PROSPERITY:**  
SAREP and RANOn'ALA bring drinking water to people.

*Photo Credit: Steve Johnson, SAREP/USAID*

Education has been key to SAREP's success. Practitioners educate village volunteers in workshops about the connections between human actions and the degradation of natural resources, and engage the community in long-term plans to address conservation goals. These workshops emphasize the theme that when accessing water, "everyone is downstream." Workshop participants are trained in water management planning, monitoring, and improved sanitation techniques. "The workshop messages spread by mouth from one neighbor to the next and are eventually accepted by the entire community, with some communities even teaching adjacent communities," said Steve Johnson, chief of party of SAREP.

The workshops have resonated with residents of the Okavango Delta region. After attending a SAREP training workshop on the link between WASH and conservation, one villager, Marcus Kamburu of Mayana, Namibia said, "We learned that each one of us is responsible to ensure our water is kept pure and clean and that we should prevent pollution."

## OF PUMPS AND PEOPLE

When appropriately implemented, the disparate goals of projects that combine conservation and WASH initiatives can actually reinforce one another. For example, USAID's Rural Access to New Opportunities for Health and Water Resource Management (RANOn'ALA) project in Madagascar works simultaneously to increase access to safe, sustainable water and sanitation sources and to encourage better natural resource management.

The project provides water pumps to villagers while also conducting targeted training workshops that stress the relationship between natural resource management and health. One such workshop showed villagers how traditional agricultural practices can damage drinking water sources. By providing access to clean water throughout the villages in conjunction with the workshops, the project literally brings home the workshop's lessons about the importance of natural resources.

So far, the two-pronged initiative has not only enhanced the health and livelihoods of villagers, but has made a tangible difference in the villagers' behavior. Bikany Edmond, president of a vanilla planters community in the town of Mananara, said RANOn'ALA's educational program has led villagers to farm more sustainably and respect their watersheds.

## NAVIGATING CHALLENGES

Sometimes, it is advantageous to combine WASH and conservation goals not because they reinforce each other, but because they actually pose limitations on one another. In these cases, project designers have to reconcile the conservation and wildlife needs of an area with the health demands of its residents.

This was the challenge faced by the Kavango-Zambezi Transfrontier Conservation Area (KAZA TFCA), a zone including at least 36 national parks in Angola, Botswana, Namibia,

the Zambia, and Zimbabwe that is home to the largest elephant population in Africa as well as a number of other large mammals, 3,000 species of plants, and 600 species of birds. Several African governments established the area in partnership with the Swiss Agency for Development and Cooperation, the German government, a number of NGOs, and USAID to promote conservation and increase livelihoods through ecotourism. The program aims to reestablish traditional wildlife corridors to expand habitats and reduce the impacts of over-concentrations of wildlife, particularly elephants. But it confronts a challenge in doing so: the water needs of the area's inhabitants.

Communities occupying the corridors are reluctant to move because they depend on the water from the Okavango River and Delta. KAZA was forced to look for ways to concurrently accommodate the region's conservation and water needs.

KAZA joined forces with SAREP to work with local communities to

**WATER DANCE:** Members of the Kartuci community in Namibia celebrate the announcement that SAREP would install water supply pipes allowing over 1,000 people there to get water near their homes.

*Photo Credit: Steve Johnson, SAREP/USAID*



create access points for water that enable residents to relocate outside the proposed wildlife corridors. By accounting for both water and conservation concerns, they were able to come up with this viable solution that jeopardized neither the environment nor residents' health.

While uniting conservation and WASH is clearly beneficial and is sometimes necessary, doing so is not easy. The sectors traditionally have separate funding and policies, so any effort to integrate them on a broader scale requires cooperation. This can be a significant setback, as it can entail separate proposals, staffs, and large-scale coordination between WASH and conservation practitioners. Staff from each field must be taught the respective policies and best practices of each sector if these programs are to succeed. Nevertheless, one need only look to the intertwined fates of the majestic wildlife, the vibrant communities, and the brilliant ecosystem they both inhabit in the Okavango Delta region to see the value in building bridges to maintain this delicate balance.

*C. Cooney*

## More Information

**The Okavango River Basin Water Commission**

**The Kavango-Zambezi Transfrontier Conservation Area**

**Gorongosa National Park**



**MANY STRIPES:** Gorongosa is said to be the place where Noah left his ark.

*Photo Credit: PM Ecologic*



# Thriving Park, Thriving People

In the 4,067 square kilometers of wilderness that comprise Gorongosa National Park, lions, elephants, impala, zebra, and hartebeest wander the grasslands; crocodiles and hippos relax in the rivers; and over 400 bird species fly overhead. But this region in central Mozambique has not always been so hospitable to the animals. Years of civil conflict have degraded the area's ecosystem, and the number of large animals inhabiting the park was reduced by 95 percent. Things began to turn around in 2004 when field workers started to take steps to restore Gorongosa National Park's environment, reintroduce wildlife, and develop an ecotourism industry to help reduce poverty in neighboring communities.

The revitalization of Gorongosa National Park is one of the great park restoration stories of recent times. The non-profit Carr Foundation, along with USAID and the Government of Mozambique, support the Gorongosa Restoration Project, which addresses both the needs of the park's plants and animals and the needs of surrounding communities.

**"The park and its natural resources will only be healthy if the surrounding environment and communities also enjoy good health."**

**Paulo Majacunene,  
Gorongosa District Administrator**

"Our communities have always complained about the lack of basic health services and the fact that they have to travel great distances to get basic treatments," said Paulo Majacunene, the Gorongosa District Administrator.

Already 25 villagers, chosen by their communities, have been trained as community health workers (CHWs) and have traveled from village to village to offer health advice and services to families who lack access to health care facilities. They provide a low-cost, efficient way of addressing community health problems resulting from untreated drinking water obtained from streams, pools, springs, and marshes.

Medical technicians and gynecological, pediatric, and general health nurses teach the CHWs about topics including

prenatal and infant care, household cleanliness, proper nutrition, regular vaccines, the links between personal hygiene and common illness, and HIV/AIDS and other sexually transmitted diseases.

The CHWs then visit different communities and work with families to prevent and address health issues. "After arriving in a community, I would see health problems, for example, many kids under 5 years old were suffering badly from diarrhea, malaria, and malnutrition," said Carlos Felix Melo, a CHW from Murombodzi. "I also observed that many families don't have latrines," he added.

Mr. Melo said that the trainings enabled to him to help the villagers that he encountered. "With the knowledge I gained, I was able to reach out and advise these families," he said.

The park's restoration plan goes beyond these health initiatives and calls for reforestation activities, anti-poaching teams, rebuilding park infrastructure, biological monitoring, and a permanent biological research center located in the park. Now, Gorongosa National Park's myriad of ecosystems – grasses and savannahs, dry forests and deserts, and seasonally rain-filled wetlands – have seen many animal species return. A burgeoning ecotourism industry is underway.

"There is a strong interdependence between the people who live around Gorongosa National Park and the resources that are within the park and the buffer zone," said Pedro Muagura, manager of the reforestation program of Mount Gorongosa. "Gorongosa National Park and its natural resources will only be healthy if the surrounding environment and communities also enjoy good health."

*C. Cooney*

*Photo Credit: Steve Johnson, SAREP/USAID*

# SOUTH TO SOUTH

HOW PARTNERSHIPS ARE TRANSFORMING  
ASIA'S URBAN WATER SECTOR



**WORKING TOGETHER:** Staff from Malaysia's Indah Water Konsortium taught over 50 water practitioners from six countries about improved sanitation.

*Photo Credit: Jay Tecson*

For the first time in her life, Ms. Bhagat of Badlapur, India has access to water whenever she desires—a vast improvement over the three or four hours a day of access she once had. A partnership between counterpart water utility companies from Malaysia and India led to increased water access throughout her home city. “I feel free,” she said. “Now I can go out and do other chores because I don’t have to wait at the house all the time for the water to come on.”

A regional water operator network called WaterLinks helped establish this partnership. Formed in 2008 by USAID’s Environmental Cooperation-Asia (ECO-Asia) project, the Asian Development Bank, and the International Water Association, WaterLinks has evolved into an expansive network of water operators spanning Asia that exchange expertise in order to improve or expand their services.

## ORCHESTRATING “TWINNINGS”

To date, WaterLinks has orchestrated more than 60 partnerships, or “twinning,” between water operators across Asia that are interested in helping fellow operators advance. The concept is based on the idea of water operator partnerships, which the United Nations Secretary General’s Advisory Board on Water and Sanitation endorsed in 2006 as a means of building capacity in the global water sector. “The basis of WaterLinks is neighbors helping neighbors,” said Arie Istandar, team leader for USAID’s ECO-Asia Water and Sanitation Program.

To arrange the twinings, which pair an expert mentor operator with a recipient partner in need of assistance, WaterLinks seeks out countries and companies with complementary needs and areas of expertise. It then formalizes the partnerships and helps

arrange a series of trainings and workshops to exchange information and tackle specific problems.

The development and implementation of twinings can be a challenge. In the early stages, WaterLinks facilitators must ensure that objectives are shared and expected outcomes are understood. During the implementation stage, leadership changes or slow progress on the ground can lead to missteps. According to Mr. Istandar, these problems are overcome by constant, clear, and intensive communication as well as facilitation and “finding a champion within the partner organization to ensure continuity.”

When successfully implemented, each twinning is beneficial to both the mentor and the organizations they help. Recipient companies reap the benefit of tailored advice from expert practitioners. “There is nothing like learning from one’s peers in overcoming weaknesses and securing performance efficiency gains,” said Arjun Thapan, Chairman of the WaterLinks Board of Trustees.

But mentors, too, gain from the partnership, with hands-on training and professional development for their employees. “Whether you’re the mentor partner or the recipient partner, you learn from the experience,” said Paul Violette, former chief of party for ECO-Asia.

## ADVANCEMENT ACROSS ASIA

Twinings supported by WaterLinks have addressed issues such as water quality, water access, sanitation, and preparedness for climate change.



**FILLING UP:** Over 100,000 people in India now have continuous access to water thanks to Waterlinks.

*Photo Credit: Niels Van Dijk*

Though many of the partnerships last only 12 to 18 months, they can catalyze lasting change.

The twinning that benefited Ms. Bhagat of Badlapur is a prime example. In addition to the intermittent water supply, aging water infrastructure meant frequent leaks, outages, and burst pipes. “People said that 24-7 access to water wasn’t possible,” said Mr. Violette. “We set out to prove that was wrong.”

WaterLinks matched Indian operator Maharashtra Jeevan Pradhikaran (MJP) with Malaysia’s Ranhill Utilities

**“The basis of WaterLinks is neighbors helping neighbors.”**

**Arie Istandar, team leader for USAID’s Eco-Asia Water and Sanitation Project**



**LINING UP:** In many Indian cities, residents must line up for water, placing a particular burden on women.

*Photo Credit: Niels Van Dijk*

to move toward a more continuous supply for 25 waterworks. Ranhill shared their own experiences to help MJP supply continuous water, detect leaks and pressure problems, and optimize water treatment. MJP replaced 55 kilometers of old and leaking pipeline and implemented district meter areas to better track water flow.

The city of Badlapur was among those that greatly benefited from the improvements, said Zainuddin Ghazali,

need to “bleed out” stale water left in the pipes each time they turn on the tap. “Hence, demand has gone down as have costs,” said Dr. Dahasastra.

Since 2009, MJP has replicated these efforts in Amravati and other towns in Maharashtra to enable continuous water supply for over 100,000 people. The government is planning to further invest in expanding the initiative across the state.

across the country. Between 2009 and 2010, mentor partner Korea Water Resources Corporation (K-Water) of South Korea provided training and technical assistance on water treatment and monitoring through a combination of lectures, on-the-job training, field studies, and field instruction, held in both Korea and Thailand.

This was beneficial for both partners. K-Water obtained crucial on-the-ground experience and capacity building for its employees. “As a mentor organization, we are proud of our activities and success story,” said Kwan-Soo Seok of K-Water’s Water Supply Department in Daejeon.

## “There is nothing like learning from one’s peers.”

**Mr. Arjun Thapan, Chairman of the Waterlinks Board of Trustees**

general manager of Ranhill Utilities. “Now 80,000 residents have a water supply 24 hours a day,” he said.

According to Dr. Sanjay Dahasastra, former member secretary of MJP, customers are also wasting less water now that they have a constant water flow because they don’t feel the

Another water operator partnership facilitated by WaterLinks targeted water quality, a common challenge for many water operators. Thailand’s Provincial Waterworks Authority (PWA) sought assistance from WaterLinks to address problems with turbidity, residual chlorine, contaminants, and poor monitoring in its 228 waterworks

The twinning was also beneficial for PWA—and for thousands of Thais. “PWA’s capability has been increased and thus water quality has improved accordingly,” said Kittiya Paosila, chief of business development at PWA. The waterworks authority subsequently upgraded the filtration and monitoring operations at one of its largest waterworks, decreasing the turbidity of their water supply to a safe

level, reducing harmful contaminants, and safeguarding the water supply of more than 20,000 households, affecting over 100,000 people.

## REPLICATING SUCCESS

In addition to the twinings, WaterLinks has also conducted surveys and held training sessions to document and share best practices on issues of broad interest. Septage management was one such topic—a critical one in many urban areas in Asia where septic tanks are a primary mode of wastewater management. WaterLinks capitalized on the expertise that certain water operators, such as Malaysia's Indah Water Konsortium, have amassed in sanitation, publishing a round-up of effective strategies and offering a training workshop for nearly 50 practitioners from six countries.

“The work that Indah Water Konsortium has done on sanitation management is pioneering,” said Mr. Violette, “The workshop and publications WaterLinks put together follow a simple rule of development: Go where there is a problem and replicate what is already working.”

This approach is also helping water operators plan for climate change impacts that may impact water ser-

vices. “An assessment conducted by WaterLinks last year showed that slightly over half of the 14 utilities surveyed are fully aware of the impacts of climate change in their work, but less than half have mainstreamed climate change into their planning,” said Saengroj Srisawaskraisorn, a climate change adaptation specialist for USAID.

To address this shortcoming, WaterLinks coordinated a workshop in the Philippines earlier this year to discuss strategies that water utilities could adopt to better prepare for and respond to the changes that will come with a changing climate, from extreme rain to flooding to prolonged drought. Unlike many of WaterLinks' activities, the mentor partners for these efforts come from outside Asia. Water companies from the U.S. coastal cities of Palm Beach, Seattle, and San Francisco (part of the U.S. Water Utility Climate Alliance) participated to share their practical lessons on building climate change resilience and adaptation.

## THE ROAD AHEAD

2013 is the United Nations International Year of Water Cooperation, and it will be an important year for Waterlinks. The project concluded in November 2012, but the productive south-south partnerships will continue

to improve urban water services. On November 23, 2011, the organization became incorporated as a nonprofit in the Philippines. USAID, the Asian Development Bank, and the International Water Association helped establish a board of managers for the organization and will sit on the newly created WaterLinks Stakeholder Advisory Group.

The organization is hoping to spread the benefits of cooperation throughout Asia. “We are looking to expand our base of partners, particularly targeting private sector entities to help our activities through their corporate responsibility programs or foundations,” said Mai Flor, executive director of WaterLinks.

Already, WaterLinks' partnerships have brought reliable access to safe water to over 1 million people. As water cooperation gains influence, thousands more water sector employees will gain the benefits of mentoring relationships—and millions more men and women like Ms. Bhagat will obtain water security.

*K. Unger Baillie*

**OPTING IN:** As part of a twinning, staff from a community-based organization in Medan, Indonesia collect a monthly payment for the master water meter.

*Photo Credit: Luke Duggleby*



## More Information

[Waterlinks website](#)

[ECO-Asia Quarterly eNewsletter](#)

[ECO-Asia Weekly Updates](#)



Photo Credit: World Water Week

## WORLD WATER WEEK

World Water Week, August 26-31, was marked with a conference in Stockholm, Sweden that brought together over 2,000 science, business, policy, and development leaders from around the world. “The numbers show that agriculture is a thirsty activity. But that also means that agriculture holds the key to sustainable water

use,” said José Graziano da Silva, Director-General of the Food and Agriculture Organization of the United Nations at World Water Week’s opening session focused on the overarching theme of water and food security. In more than 100 sessions, experts discussed topics including micro-irrigation, river basin management, good governance, and gender, water, and food security. Throughout the workshops and panels, certain

themes emerged. Sessions showed that water and food security are inseparable, that agriculture must be made more sustainable, that smallholder farmers must not be overlooked, and that steps should be taken to reduce food waste. Participants agreed that cooperation between different actors and sectors will be necessary to achieve these common goals.

## GLOBAL HANDWASHING DAY

October 15, 2012 was Global Handwashing Day. Originally geared toward children and schools, it is now celebrated by over 200 million people of all ages in more than 100 countries. Events on Global Handwashing Day stressed that washing hands with soap is a year-round commitment and reinforced campaigns like UNICEF's A Call to Action and A Promise Renewed. These campaigns promote key hygiene behaviors including handwashing with soap, safe disposal of waste, and safe storage and treatment of drinking water. Using the hashtag #iwashmyhands, John Pasch, director of the USAID Water Office, answered questions about health and hygiene on Twitter.

## THE UN INTERNATIONAL YEAR OF WATER COOPERATION 2013

Water is necessary for survival, but nearly 800 million people lack improved access to water and about 2.5 billion people lack improved access to sanitation. Recognizing the urgent need for

the global community to work together on this issue, the United Nations has declared 2013 the International Year of Water Cooperation. Announced during the 6th World Water Forum in March 2012, the International Year of Water Cooperation will raise awareness about the challenges facing the water sector and about the potential for different types of partnerships to address these challenges. In honor of this theme, World Water Day and World Water Week 2013 will both focus on water cooperation.

## WORLD TOILET DAY

World Toilet Day took place on November 19, 2012. The global event, which has been observed every fall since 2001, works to break down taboos surrounding toilets and bring attention to the global sanitation challenge. Today, more than 2.5 billion people lack access to improved sanitation, and World Toilet Day sheds light on their plight through events and social media outreach. This year, there were over 50 events in at least 20 countries, including the unveiling in London of a large interactive multi-media sculpture of a man squatting called *The Public Toilet*, public readings of books about sanitation, and fundraisers to benefit sanitation.



Photo Credit: FoEME

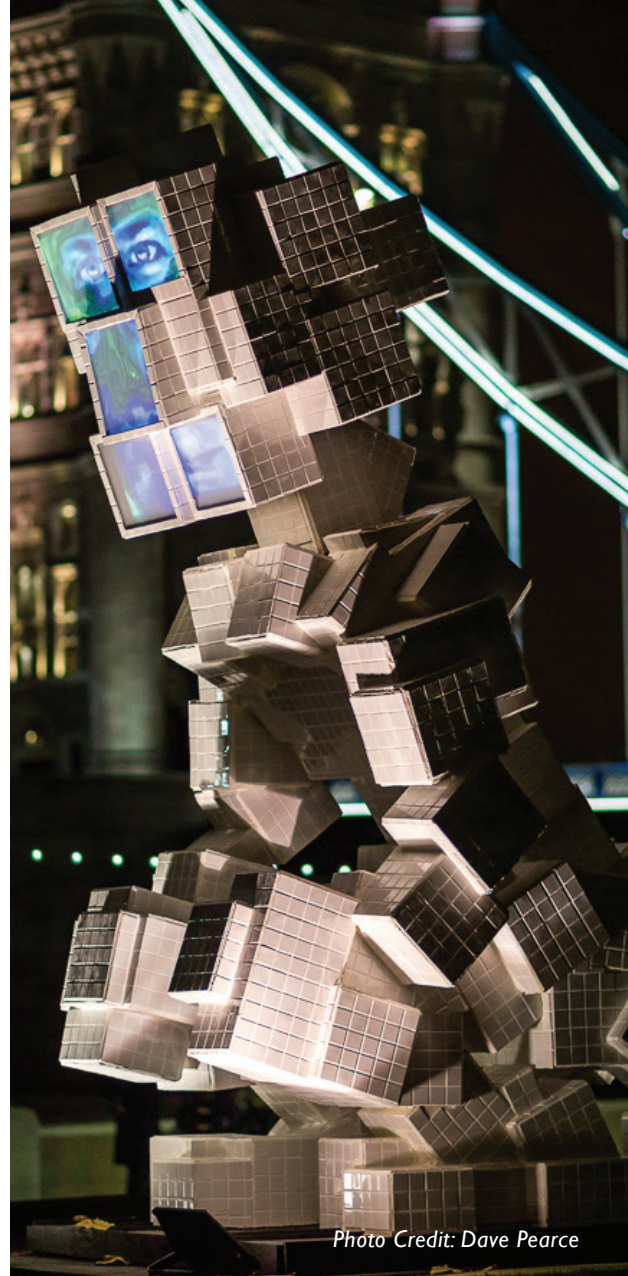


Photo Credit: Dave Pearce



## MARK YOUR CALENDARS

**United Nations Day for South-South Cooperation**  
December 19, 2012

**World Wetlands Day:**  
February 2, 2013

**International Women's Day**  
March 8, 2013

**World Water Day**  
March 22, 2013



**STANDING TOGETHER:** These Malian women benefited from a dike and dam constructed by USAID which made lowland farming possible, helping to improve their food security and increase their incomes.

*Photo Credit: Ryan Vroegindewey, USAID/Mali*



# FUTURE OF FOOD: ADAPTING MILLIONS TO CLIMATE CHANGE



**ENDANGERED NUTRIENTS:** A Peace Corps volunteer trains his local community in Malawi on the nutritional benefits of growing soy. Though an important crop, soy is very vulnerable to climate change.

*Photo Credit: Peace Corps*

Droughts leave the earth thirsty and infertile. Rising sea levels inundate rice paddies with unwanted saltwater. Floods submerge farms, killing crops meant to feed millions. In much of the developing world, climate change and food security are tragically intertwined. Extreme weather like heat waves, floods, droughts, forest fires, and landslides affect several hundred million people and their access to food.



Photo Credit: USAID/Mozambique



Photo Credit: Martin Puddy



Photo Credit: Eric Thompson, Photoshare

(Clockwise from top left) **NEW VARIETIES:** A USAID conservation agriculture project in Mozambique has seen much success. **FIELD OF HOPE:** A farmer works in a field of rice paddies in Bali, Indonesia. **CHANGING WITH THE CLIMATE:** A house in Bali, Indonesia, in different times of the year, according to the outcome of the wet/dry seasons.



In the last few years, global climate change adaptation and food security have become high priority objectives for the U.S. Government. In 2010, the U.S. Government announced two new initiatives: Feed the Future, which focuses on promoting food security among those most in need, and the U.S. Global Climate Change Initiative, which works to build resilience to climate change around the world.

Today, new attention is being given to the intersection between climate change and food security. The 2012-2016 USAID Climate Change and Development Strategy reports that agricultural production in sub-Saharan Africa will decrease by 11-28 percent by 2050 and that wheat production could disappear entirely by 2080.

USAID has been a leader in training farmers to cope with climate change by promoting climate-resilient agriculture in priority countries, such as Bangladesh, Ghana, Haiti, Kenya, Senegal, and Honduras. In Ethiopia, the Product Safety Net Program Graduation with Resilience to Achieve Sustainable Development program was launched in 2012 and will work for the next four years to train 50,000 households to meet their year-round food needs while also being able to withstand droughts and other climate-related food shocks.

Sometimes, new crops are necessary to withstand these shocks. Under the Feed the Future Initiative, USAID introduced high-yield, drought-resistant crops to farmers throughout the world. In Senegal, regular rice varieties were failing because of annual rainfall variation and drought, so USAID introduced a high-yield and protein-rich drought resilient rice variety, called New Rice for Africa or “Nerica,” to almost 4,000 farmers. Now, Senegalese farmers can not only feed their own families, but also have leftovers to sell in the market.



Rising sea levels threaten food production. In Bangladesh, over 20 million people in low-lying lands are at risk from floods and rising sea levels. When this happens, crops sustain saltwater damage, threatening the food security and livelihoods of Bangladeshis. USAID supports research to develop a salt-tolerant rice variety in order to increase yields of rice. It has also developed new farming practices that decrease greenhouse gas emissions in Bangladesh. One of these methods is the Deep Urea Placement technique, which is a nitrogen fertilizer application method that deposits the fertilizer deep beneath the soil. Roots immediately pick up the nitrogen, decreasing the emissions that exacerbate climate change.

Success with high-yielding drought-tolerant maize varieties. A floating village on Lake Tonle Sap in Cambodia. The village relocates at

Photo Credit: USAID/Indonesia



Photo Credit: Daniel J. Miller, USAID/Pacific Islands



(Clockwise from top left) **HEALTHY ECOSYSTEMS:** A coral reef at the Anambas Archipelago of Indonesia. **WORKING WOMEN:** A woman catches fish in her household pond. USAID trains and supports women to do fish farming, which leads to income generation, improved family nutrition, and women's empowerment. **FISH IN JEOPARDY:** A view of the Coral Sea from the Port Moresby harbor in Papua New Guinea. **TREASURES OF AFRICA:** (Background) Islets dot the reefs of Ste. Anne Marine National Park off the Seychelles.

Climate change leads to warmer ocean waters, which leads to coral reef damage and mass fish kills, which jeopardize food security for the one-third of the planet's population that relies on fish for at least 20 percent of their animal protein. In the Seychelles for instance, coral reefs are a key source of food and livelihoods, but climate change has led to coral bleaching. After El Nino in 1998, temperatures in the Indian Ocean temporarily rose about 5 degrees Fahrenheit, and up to 90 percent of the coral reefs in the Seychelles died. USAID is restoring damaged coral reefs by growing and planting different species of coral in the most degraded areas, ensuring that they are protected from predators while they are growing. Along with the reefs, the food security and livelihoods of thousands in this oceanic African state will be revived.

With multiple issues threatening global food security, it is becoming more and more necessary to anticipate and combat climate change impacts early. USAID has begun implementing early-warning programs, which use technology to anticipate and alert stakeholders to climate shocks that affect food. One of these programs is the Famine Early Warning Systems Network (FEWS NET). FEWS NET uses information from international, regional, and national partners, and employs geo-spatial data, satellite image products, and derived data products in order to monitor emerging and evolving food security issues in 25 countries. When potential threats to food security are identified, decision makers can use the FEWS NET technology, such as food security updates, alerts, and briefings, to act to alleviate the threats.

As oceans rise and floods and droughts threaten crops and water resources, resiliency measures like these are increasingly necessary. With continued vigilance, millions will be able to attain food security in the face of a changing planet.

*C. Wixted*



Photo Credit: PRICE/Chemonics International

Photo Credit: Nik Wheeler

## More Information

**USAID Climate Change and Development Strategy**

**Feed the Future website**

**Feed the Future Newsletter**



Photo Credit: Javier Mármol, Manos Unidas

## G8 ALLIANCE FOR FOOD SECURITY AND NUTRITION ANNOUNCES ADDITION OF AFRICAN COUNTRIES

At the United Nations General Assembly in New York on September 26, 2012, the G-8 announced that Burkina Faso, the Côte d'Ivoire, and Mozambique have joined its New Alliance for Food Security and Nutrition, the next phase in reaching their goal of global food security. The New Alliance is a shared commitment to achieve sustainable agricultural growth and bring 50 million people out of poverty within the next 10 years. Its main goals are to mobilize private capital for food security, take innovation to scale, reduce and manage risk, ensure accountability for results, improve nutritional

outcomes, and reduce child stunting. USAID Administrator Rajiv Shah also announced that 21 additional private sector companies have signed letters of intent to invest an additional \$500 million in African agriculture. The G-8 Summit in 2013 will report on the first year of implementing the New Alliance, focusing on collaborations with the private sector and the African Union.

## USAID LAUNCHES WA-WASH PROGRAM IN WEST AFRICA

USAID has launched the West Africa Water, Sanitation, and Hygiene (WA-WASH) program, which will be implemented in Ghana, Niger, Mali, and Burkina Faso. The four-year program will build and expand upon the efforts of the West Africa Water Initiative to provide sustainable access



Photo Credit: USAID Kenya

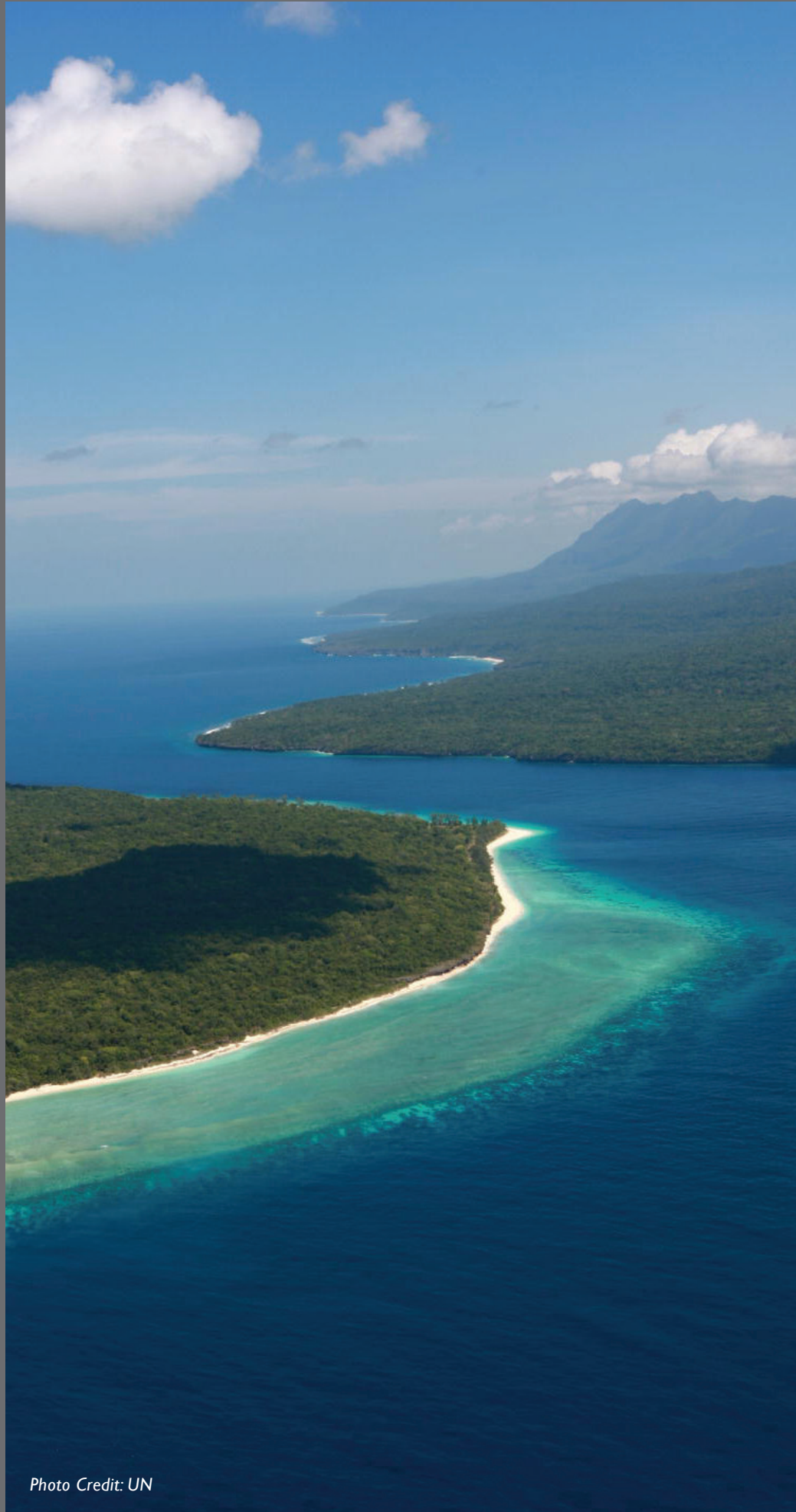
to safe water and sanitation and to improve hygiene in West Africa. WA-WASH has allocated \$24 million to WASH activities, \$1 million to food security, and \$4 million toward climate change activities. The program hopes to help West Africa reach Millennium Development Goals for water and sanitation by supporting new approaches, developing improved WASH service delivery models that are easy to replicate, and incorporating regional priorities into its WASH interventions.

## **USAID/SUWASA PROJECT CONNECTS THOUSANDS TO WATER PIPELINE**

More than 8,500 people in the Nyamasaria community of Kenya will have access to clean and affordable water because of a new partnership between USAID's Sustainable Water and Sanitation in Africa (SUWASA) program and the Kisumu Water and Sewerage Company (KIWASCO). The technical assistance project, through financing from Kenya's K-Rep Bank to KIWASCO, provides homes, schools, and health clinics in the Kisumu Province of Kenya with a low-cost, safe, and consistent water supply. Households in the most poverty-stricken communities will be connected to a piped water distribution network. They will then pay a small monthly fee for five years to cover the connection and water supply costs. For about half of the previous monthly fee, participating households will have twice as much access to water.

## **MARINE ECOSYSTEMS IN TIMOR-LESTE RIFE WITH NEW SPECIES**

Biodiversity monitoring by marine scientists in Timor-Leste has revealed several new species of coral in the coastal waters there. Monitoring is part of the Coral Triangle Support Partnership's efforts to enable communities to better manage their resources and adapt to climate change. Some early findings have indicated that the water temperatures in Timor-Leste are lower than in the coastal waters of surrounding countries such as Indonesia and Australia. If this is the case, the marine ecosystems there are likely to be more resilient to climate change impacts and could serve as refuges for marine species in the Coral Triangle that are threatened by rising sea temperatures.



*Photo Credit: UN*

# DEVELOPMENT WITH A SIDE OF **DRAMA**

**D**oomed lovers Gifty and Kweku live in Biribireba, a coastal fishing village in Ghana. Beautiful and passionate, Gifty is a health and environmental educator. Her former childhood sweetheart Kweku is a mechanic. Apathetic about his life and community, Kweku regularly pollutes the Eku River with chemicals from his workshop. But Gifty lights a fire under him by showing him the importance of conservation. The two begin fighting together to save their community, but all is not well. Gifty's tyrannical father, an irresponsible fisherman who goes against everything his daughter preaches, threatens their community and their love. He engages in illegal fishing techniques like dynamite fishing and wages a battle against the conservation-law-enforcing chief fisherman Agya, who happens to be his brother-in-law. In his attempt to ruin Agya, he enlists the help of powerful but corrupt Commander Bawah—and promises him Gifty's hand in marriage in return. Treachery, jealousy, scheming, and even murder ensue.

There is a reason this sounds like a soap opera. This is the plot of “Biribireba,” the radio series that captivates 2.5 million Ghanaians each Thursday. The soap opera is part of the USAID Hen Mpoano (“our coast” in the local Fante language) program, which is implemented by the Coastal Resources Center, SustainaMetrix, and Friends of the Nation Ghana. The program works to raise awareness about health and conservation in Ghana in innovative, engaging ways. The program also produces a call-in talk radio show where listeners can sound off on “Biribireba’s” seamy plotlines and important messages. Multimedia behavior change campaigns like this one are playing an increasing role in health and environment initiatives.





**CHANGING DIAPERS, CHANGING LIVES:** Contestants on You're the Man!  
Learn about hygiene and childcare.

*Photo Credit: Sea Sokhon*

## SOCIAL CHANGE MEETS BEHAVIOR CHANGE

Behavior change communication has long been key to development. Traditional behavior change initiatives deliver straightforward messages to individuals through presentations, pamphlets, and billboards. Merri Weinger, senior environmental health advisor at USAID, said that while important, these methods alone are not always enough. She proffered the example of handwashing: “When you boil it down to messages, such as ‘wash your hands before preparing food,’ it does not necessarily ensure that people have the wherewithal to wash their hands,” she said, “You also need to demonstrate ‘small doable actions’ that people could do to wash their hands even when water is not abundant, such as building a water saving device or tippy-tap to use as a handwashing station with either soap or ash nearby.”

USAID’s Hygiene Improvement Project worked throughout the world to spread this type of comprehensive knowledge by educating targeted populations about the whys and hows of hygiene through radio and television messages, children’s books, and even puppet shows. This project was effective because rather than just presenting the messages on their own, it also demonstrated feasible ways to put them into practice in an engaging format.

Currently, more programs are using multi-media in innovative ways to educate communities. USAID’s C-Change project has successfully educated thousands about malaria, HIV/AIDS, family planning, and water, sanitation, and hygiene through concerts, humorous television spots, captivating radio dramas, and even comic books. The project has worked with NGOs, community based organizations, faith-based organizations, and the media in

a number of countries to build their capacity to inspire lasting change.

While the project has recently concluded, its impact has reverberated throughout the health community, showing practitioners the need for engaging communities and catalyzing interpersonal communication. “The innovation that C-Change brought was to combine social change and behavior change,” said Antje Becker-Benton, deputy director of C-Change, “This has been more effective than raining messages down on people.”

## REALITY CHECK

While reality shows are generally not perceived as powerful tools for social change, USAID has harnessed them to inspire it.

Current and past USAID-funded reality shows include “Dream and Achieve,” an entrepreneurship-promoting Afghan reality show modeled after “The Apprentice”; “Tosale’ango,” a Congolese show covering hot-button youth issues; and “Challenge 10: Peace for the Ex,” a Guatemalan show about former gang members struggling to live legitimate lives.

USAID/Cambodia’s “You’re the Man!,” a hugely popular reality show which just wrapped its fourth season, made waves by promoting general health, respect for women, and personal responsibility while combating HIV. “Our goal is to change the concept of masculinity and promote a new model of social norms in Cambodia,” said Sea Sokhon, associate director of strategic behavioral communications at FHI 360, which produces the show.

The first season, which aired in 2009, followed six men: multi-lingual sophisticate Chea, disabled activist Oung, artsy aspiring singer Heng, sporty city-boy Choun, joke-cracking homosexual actor Sat, and black-belt holding “tough guy” Tony. The men lived in a house together for two months and competed to prove who was the “real man.” Challenges included living in a village and cooking and cleaning (making sure to wash their hands and store dishes hygienically), writing and performing non-sexist

**BROADCASTING A BETTER TOMMORROW:** A community speaker broadcasts the Biribireba soap opera in Ghana.

*Photo Credit: Sean Southey, PCI-Media Impact*



**ENGAGING LISTENERS:** The Biribireba soap opera has engaged millions of Ghanaians.

*Photo Credit: All images by Sean Southey, PCI-Media Impact*

karaoke songs, and convincing their peers to get tested for HIV.

A companion peer education program was launched to drive home the show's messages. Each week, peer educators visit entertainment venues throughout Cambodia donning "You're the Man!" gear to discuss the show's themes. Taken together, the messages have resonated with young Cambodians. In a focus group, one young man said the show helped him encourage his friends to live healthier lives. "We can take examples from the show to be more persuasive."

## JOURNEYS OF CHANGE

Soap operas are another unconventional social and behavior change tool that USAID has effectively harnessed. Radio has been the medium of choice in the poorest communities where not everyone owns a television. Dr. William Banham, programs director at PCI-Media Impact, a USAID partner that produces several radio soap

operas including "Biribireba" said, "Soap operas are an effective way to communicate about complicated issues because the stories themselves are long-running and complex. They take you on a journey."

They can accordingly tackle multiple issues without sacrificing entertainment value. For instance, "Callaloo" is a radio series funded by USAID

**"We can take examples from the show to be more persuasive."**

**"You're the Man!" focus group participant**



**COOKING UP CHANGE:** Contestants on Cambodian reality show *You're the Man!* participate in a cooking challenge in which they learn about health, hygiene, and gender roles.

*Photo Credit: Both photos by Sea Sokhon*

and produced by PCI-Media Impact that airs in 15 Caribbean countries. A “callaloo” is a type of stew consisting of a hodgepodge of ingredients, and appropriately, the drama follows the lives and loves of four Caribbean clans. Characters include a corrupt businessman with plans to drain a wetland, an HIV-positive teen prostitute, a nurse whose philandering boyfriend jeopardizes her health, a struggling businessman caught between his work and the environment, and a newspaper editor who takes on environmental issues—and his father. The show educates listeners about climate change resiliency, biodiversity conservation, and HIV/AIDS while entertaining them with engrossing storylines about betrayal, desire, love, and revenge.

To ensure the messages and not just the seamy plotlines of soap operas like “Callaloo” resonate with the millions they target, they are paired with wide-ranging social change movements. “Callaloo” is part of a joint initiative by USAID, the U.S. Fish and Wildlife Service, the German Development Bank, and a consortium of partners called “My Island-My Community.” It also encompasses local call-in radio talk shows and community events such as beach clean up days, tree planting festivals, football matches, cook-offs, and health testing drives. “It is important to not just leave the drama out there, but to also forge discussions about its messages,” said Dr. Banham.

## **CONTROLLING THE MESSAGE**

While powerful, multimedia initiatives present unique challenges. Their messages and audiences can be difficult to control, as anyone can watch or listen to reality shows and soap operas—or opt not to. “Mass media is in some ways challenging because it is difficult to target the highest risk populations,” said Mr. Sokhon.

Research is imperative to ensuring that the shows attract and resonate with the targeted audiences. Shows employ focus groups and surveys before a single script is written, and then pilot several episodes before launching the large-scale production. “We bring in the voices of the target audience during the research phase,” said Dr. Banham.

“Thirsty for You” is a USAID-funded radio soap opera that airs throughout Peru, which involved particularly intense research because of Peru’s diversity. The show follows the travails of young couple Amanda and Wilkins while educating listeners about water, sanitation, and hygiene issues. Researchers were dispersed to the capital, the north coast, the Amazon, and the Andes. “Each area has very different populations and water challenges,” said Brenda Campos, programs director at PCI-Media Impact, which produced the show. “We held workshops with local partners at each location to identify the biggest local challenges and understand the perception communities have about water issues.” The ensuing program engaged listeners with a universal love story that touched on a variety of water issues including handwashing, paying for water, and conservation.

However, no matter how meticulous the research, it is impossible to fully control perceptions. On “Biribireba” for example, a conservation law flouting fisherman was written as a villain but became a fan favorite. “We had conceived him as a negative role model but we found out he was popular because he was funny,” explained Dr. Banham. To rectify this, the “Biribireba” team flipped the script. The fisherman retained his explosive sense of humor, but slowly realized the importance of conservation.

Ensuring programs like these stay resonant and relevant is no easy feat, but the potential payoff is tremendous. Few other behavior change

programs have the power to touch people so profoundly. For instance, one listener on a “Biribireba” call-in show confessed, “I haven’t missed an episode. I don’t have a radio set so I listen to the program from a friend’s house and whenever it’s time for the program, my friend calls me. The other day I put food on the fire and left to listen to the program only to return to see the food burnt.”

**“Soap operas are an effective way to communicate about complicated issues because the stories themselves are long-running and complex. They take you on a journey.”**

**Dr. William Banham, Programs Director at PCI-Media Impact**

Because of this level of devotion, entertainment education programs have the power to infiltrate public consciousness for the long term. Back in Ghana, the nation is rapt, waiting to see if Kweku and Gifty will save the village—and their relationship. While it is impossible to predict what will happen, one thing is certain: Because of “Biribireba” and other educational programs, millions are abuzz about the issues that will determine their futures.

*C. Zeilberger*

## **More Information**

**Read about HIP in  
Global Waters’ August issue**

**C-Hub, a compilation of development communication materials**

**You’re the Man! on Facebook**

ONLINE



**WATERSHEDS OF THE WORLD**

The World Resources Institute has launched “Watersheds of the World,” an online application that provides maps of land cover, population density, and biodiversity for 154 watersheds and sub-basins around the world. The interactive application allows users to scroll over individual basin profiles by continent and review information on the aforementioned basin variables. The variables were determined according to the watershed’s value, current condition, and vulnerability to potential degradation and give a unique global perspective on the largest watersheds in the world. The application also provides 20 global maps on water resources issues such as wetland areas, urban and industrial areas, the environmental water scarcity index, virtual water flows, and many others.



**MORE INFORMATION**



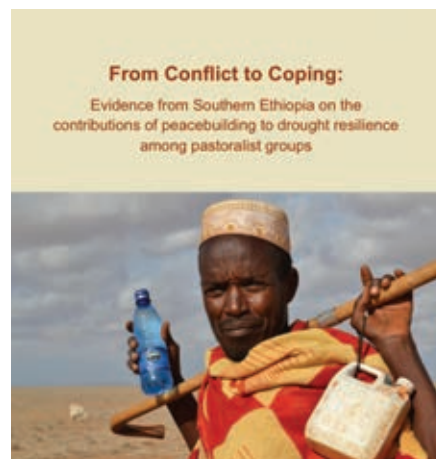
**AGRILINKS LIBRARY OF RESOURCES**

Agrilinks offers a space for agriculture practitioners and specialists to access current information and resources on important agriculture and food security issues around the world. Its library of resources provides access to presentations, webinars, screencasts, documents, blog posts, and reports on a variety of agriculture-related subjects. This collaborative learning environment allows users to submit their own resources to be added to the library, promote knowledge-sharing through the portal, join a new community, and rate and comment on the provided resources.



**MORE INFORMATION**

IN PRINT



**MERCY CORPS: “FROM CONFLICT TO COPING” REPORT ON SOUTHERN ETHIOPIA**

Mercy Corps works all over the world to “alleviate suffering, poverty and oppression by helping people build secure, productive and just communities.” Their report, “From Conflict to Coping,” which was released in February 2012, demonstrated that effective peacebuilding interventions help build resilience to crises. Communities that participated in the program reported greater freedom of movement and fewer barriers to accessing resources, markets, and public services. More importantly, the increased peace and security has allowed participating communities to adapt to climate change and improve their livelihoods.



**MORE INFORMATION**

**ANNUAL REPORT TO CONGRESS**

Senator Paul Simon Water for the Poor Act  
P.L. 109-121; Sec. 6 (g)(2)



**ANNUAL REPORT TO CONGRESS: SENATOR PAUL SIMON WATER FOR THE POOR ACT**

The U.S. Department of State released its FY11 Senator Paul Simon Water for the Poor Act annual report to Congress in September 2012. In FY 2011, the U.S. Government and USAID made great strides toward a comprehensive approach to water programming. U.S. Government investment for all water sector activities worldwide totaled \$734 million. As a result of USAID investments, 3.8 million people gained improved access to drinking water and 1.9 million gained improved access to sanitation.



**MORE INFORMATION**

**FOOD SECURITY: BUILDING A MORE STABLE WORLD**

This animated video on food security explains that factors like crop disease, unstable market prices, and intermittent rain patterns can ruin an entire year's worth of planting. Nearly one billion people go to bed hungry every day. Millions of farmers around the world, many of them women, are unable to feed their families or make a profit because they lack quality seeds and tools to help maximize their crop yields. By introducing tools, training, and improved technology to farmers, USAID is increasing global food production, bolstering the livelihoods of millions, and empowering communities to break the cycle of hunger and build a more stable world for future generations.



**MORE INFORMATION**

**KEEPING THE WATER FLOWING: WINROCK'S MULTIPLE-USE WATER SERVICES**

Water services for the poor often focus on a single use, such as drinking water or water for crops. But the poor need water not only for drinking, but also for their animals, for growing food, and for earning an income. Consequently, livestock contaminate drinking water, people drink irrigation water, high water demand creates conflict, and health and livelihoods are compromised. Winrock's multiple-use water services offer a different approach: Provide the poor with water for all of their needs. While this more efficient approach is slightly more costly, it has improved health and inspired communities.



**MORE INFORMATION**

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