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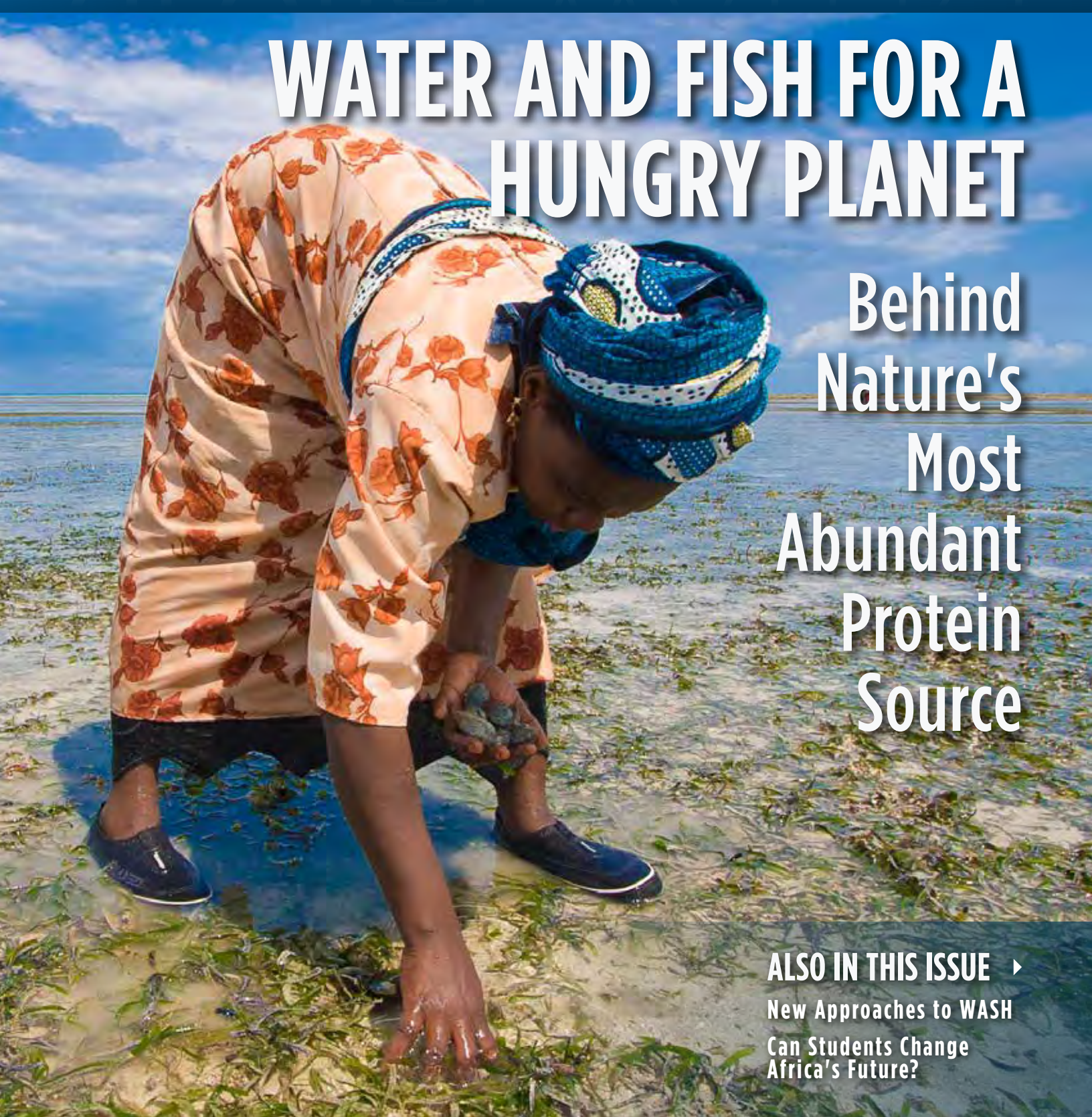
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VOLUME III ISSUE III AUGUST 2012

GLOBALWATERS

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Protein
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New Approaches to WASH

Can Students Change
Africa's Future?



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LETTER FROM THE WATER OFFICE

World Water Week 2012 brings policymakers from around the globe to Stockholm to explore the links between water and food security. We focus this edition of *Global Waters* on these essential issues of our time.


Half a billion people, 95 percent of them in the developing world, work in the fishing industry and billions more rely on fishers to put food on the table. However, both fishing and fish farming can lead to ecosystem destruction and dwindling quality and quantity of fish. Fishers are feeling the pinch—as it turns out, there are *not* plenty of fish in the sea. There are solutions though, and this month's cover story focuses on USAID's efforts to train communities to fish and farm fish in a sustainable way. So far, profits have been higher, food has been ample, and acres of beautiful coastline have been preserved. It seems that folk wisdom was right: If you teach a man to fish (sustainably), he will eat for a lifetime.

Indeed, education is the key to development. This edition, we profile several brilliant young African graduate students who are not only taking demanding graduate course loads, but also building their countries' futures. These women and men from Africa's cities and pasturelands are studying topics like water resource management, agriculture, and HIV prevention in new programs supported by USAID and a number of American universities. With state of the art resources and access to the foremost development minds, the first crop of students has begun applying lessons learned in the classroom in their communities. They are venturing off campus and studying river basins, designing irrigation systems, and saving pastoralist communities.

Global Handwashing Day is this October, and millions of people around the world will be lathering up in celebration. This is a fantastic opportunity to draw attention to the issue, but USAID strives for a lifetime commitment of good health and hygiene. In this edition, we spotlight USAID's efforts to enable schoolchildren, HIV patients, and the urban poor to do the basic things we take for granted—things like using a flush toilet, throwing our clothes in the washing machine, and washing our hands with soap. We can only hope that efforts like these will spread and soon every day will be Global Handwashing Day.

We hope you enjoy this issue and share it with your friends, family, and colleagues. Happy World Water Week!

The Water Office
waterteam@usaid.gov



RACE AGAINST TIME: Children scurry to catch the remaining fish in a pond that is drying out in Sirajganj, Rajshahi, Bangladesh.

Photo Credit: Nicolas Merky

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ON THE COVER

COLLECTING COCKLES: In Bweleo Village, Zanzibar, women spend hours bent at the waist collecting cockles for food. Women now play a key role in a USAID-supported community-based conservation initiative that establishes and manages “no-take” zones, which allow depleted stocks of cockles to grow back.

Photo Credit: Klaus Hartung

MAKING MARKETS AND TECHNOLOGY WORK TO INCREASE ACCESS TO SANITATION FACILITIES AND SERVICES IN SENEGAL

BY AARON BROWNELL
ACTING ECONOMIC GROWTH OFFICE DIRECTOR, USAID/SENEGAL

Given the extremely high prevalence of diarrheal disease in Senegal, progress in the water supply and sanitation (WSS) sector has significant importance to decreasing morbidity and mortality, particularly in children under five years of age. Diarrheal related illnesses are the second leading cause of death for children under five and account for about 40,000 preventable deaths each year.

In 1996, the Government of Senegal began reforming its WSS sector and, since then, it has made substantial improvements in coverage and sector organization. In 2005, Senegal developed a programmatic approach to coordinate WSS stakeholders called Programme d'Eau Potable et d'Assainissement du Millénaire (PEPAM) or the Millennium Potable Water and Sanitation Program. PEPAM has been instrumental in setting Senegal's progressive WSS sector policy and investment program to put it on track to meet its Millennium Development Goal targets for water by 2015, with lesser prospects for sanitation.

Under the umbrella of PEPAM, there are a plethora of WSS programs that include rural sanitation activities. These programs implement a variety of approaches that apply different subsidy levels, technology options, and levels of community involvement and often work with the national and local government in different ways.

Despite significant investments in the sector, in an 18 year period Senegal has made modest gains toward the Millennium Development Goal targets in rural sanitation—moving from just 22 percent of the population in 1990 to 38 percent of the population in 2008 with access

to improved sanitation facilities. To move from 38 percent to the Millennium Development Goal target of 59 percent in 2015 would require an estimated 1,540,015 additional people with access to an improved sanitation facility (approximately 154,002 additional latrines). Looking at the trends, reaching this goal seems unlikely if the WSS sector continues with the same approaches.

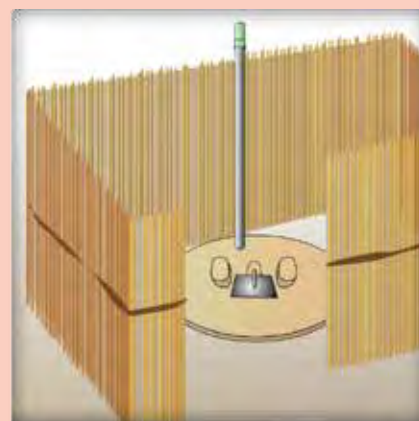
For rural areas—where 70 percent of the people without improved sanitation live—current approaches in the sanitation sector can include high subsidies (that are often not strategically implemented) to extend high-end expensive latrines. These “high subsidy/high cost” (HS/HC) approaches obtain relatively small gains toward the Millennium Development Goal targets, create donor dependency, and produce barriers to scaling up to meet community needs. In Senegal, USAID and other actors are promoting a shift away from current HS/HC approaches to ones that increase market demand for unsubsidized sanitation facilities and foster an environment for increased community and private sector participation.

There is a long legacy of the HS/HC approach in Senegal rural sanitation activities, and at the present time there is no coordinated policy governing the subsidies that exist. The HS/HC approach can result in just a few



“These ‘high subsidy / high cost’ approaches obtain relatively small gains toward the MDG targets, create donor dependency, and produce barriers to scaling up to meet community needs.”

MILLENNIUM WATER & SANITATION PROGRAM (USAID/PEPAM)



VENTILATED IMPROVED DOUBLE-PIT LATRINE (VIP)

DOUBLE-VENTILATED IMPROVED PIT (DVIP)

SANPLAT

INTRODUCING OPTIONS: USAID has worked with small businesses to introduce and provide several designs of latrines that have significantly lowered costs, increased options, and reduced barriers for households to access improved sanitation facilities.

households benefiting from high quality latrines, leaving others with none. This approach can have the unintended consequence of setting a standard for a technology that, in the absence of a donor or a subsidy, is not affordable.

In addition, programs that are applying the HS/HC approach present challenges for other “low or no subsidy” programs that are working in the same areas. It is hard to convince households to invest in a product or service when they see their neighbors getting an improvement for free or at a minimal cost. The subsidy can distort the market—reducing the demand for appropriate technologies, decreasing a household’s willingness to pay, and preventing the private sector from engaging in sanitation outside of the context of the program.

USAID and other actors are promoting a reform in the sector by supporting the Government of Senegal in its development of a more strategic rural sanitation strategy. Recently, programs have been demonstrating success in lowering costs, lowering subsidies, increasing demand, and engaging the private sector. The USAID WSS initiative that started in FY 2009 is showing results in improving

sustainable access to water supply and sanitation facilities and promoting better hygiene in targeted rural areas of Senegal. The programs coordinate with the Government of Senegal, donors, and other actors to apply an integrated approach to address the interrelated social, governance, economic, health, ecological, and sustainability challenges in the sector.

In sanitation, the program applies four interrelated and mutually reinforcing principles:

- Increase the demand for sanitation services and products by promoting and marketing appropriate low-cost systems;
- Strengthen the capacity of small-scale service providers and the private sector to respond to the demand for sanitation services (including ongoing operation and maintenance needs);
- Encourage private sector involvement by promoting reforms and enabling the business environment; and



NEW LATRINES, NEW LEASE ON LIFE: After a Community-Led Total Sanitation (CLTS) activity, this rural household in Senegal built a non-subsidized latrine, with a cover and a place for hand washing.

Photo Credit: Jay P. Graham

- Strengthen participatory governance and support community-level infrastructure planning, management, installation, and maintenance.

The USAID program is working toward the vision of a sanitation sector that can thrive in the absence of a subsidy and a donor. To this end, the program is coupling the increase in demand for services with training rural masons to provide several latrine options that differ in sophistication and costs.

To compete with the HS/HC programs, USAID is currently applying some subsidies, but the program is planning to eventually phase them out and let the market be the driver of success. In addition, the program emphasizes

behavior change and community engagement, which includes innovative outreach efforts such as involving local musicians. The program is also piloting Community-Led Total Sanitation, an approach where, worldwide, many unsubsidized latrines have been constructed.

A coordinated effort is needed to achieve the vision of allowing markets and technology to work to increase sanitation facilities and services. The issues in Senegal are representative of the enormous challenge of extending improved sanitation facilities to the 2.6 billion people who currently do without them. To achieve the Millennium Development Goal targets in sanitation, the global community must change the status quo in the sector and find ways to facilitate, not hinder, the private sector to be more engaged in the solution.

“A coordinated effort is needed to achieve the vision of allowing markets and technology to work to increase sanitation facilities and services.”

FOR MORE INFORMATION, VISIT:
[USAID/Senegal on Facebook](#)
[USAID/Dakar on Youtube](#)
[USAID/Senegal Homepage](#)



BENEFITS OF THE BUSH: Senegalese women work together to get the fruits of the land as part of USAID/Senegal’s Wula Nafaa program.

Photo Credit: Madior Fall, USAID/Wula Nafaa Program

THE “BENEFITS OF THE BUSH” IN SENEGAL

In Rural Senegal, two women, Fatou Seck and Fatou Senghor, take a break from their day's work to proudly admire baskets overflowing with vegetables they harvested in their new community garden. However, gardens like this one did not always exist. They were created through USAID/Senegal's Wula Nafaa program, which runs from 2008 to 2013 and enables Senegalese farmers to take production into their own hands and guard themselves against food shortages. Ms. Seck, a local vegetable grower, said the new garden has boosted her nutrition and enhanced her income. “Now we are able to produce several varieties of vegetables. We eat some and market the surplus locally,” she said.

“Wula Nafaa” means the “benefits of the bush” in the local Bambara language. It is fitting, then, that the program works with the Senegalese government, rural councils, and villagers to better manage their natural resources in order to generate income and prevent food shortages and health crises in Senegal, where one quarter of the population suffers from year-round or seasonally occurring hunger. The wide-ranging program links three pillars: nature (agricultural, marine, and natural resources), wealth (economic livelihoods), and power (governance). Wula Nafaa's philosophy is that rural residents can boost their incomes and have more control over their destinies by efficiently managing natural resources and taking care of the environment.

Wula Nafaa trains Senegalese farmers to conserve and smartly manage their natural resources, especially water, which is scarce in drought-afflicted Senegal. “The Wula Nafaa Program helps Senegal combat poverty through

water resource management,” said Wula Nafaa Chief of Party, Jeffrey Povolny. The introduction of conservation farming, an agricultural technique that uses mulch to conserve soil and water, is one way the program has improved growing conditions and minimized runoff and erosion. One local farmer noted, “With conservation farming, all plants sprout without any delay in growth or development. Instead of seeing signs of crop damage at the beginning of the harvest, the plant is able to reach its full potential, allowing it to produce a higher yield.” In addition, Wula Nafaa helps villagers to safely access the water they conserve for household and agricultural use by building wells with manual and solar pumps.

“Power,” or governance, is another component of Wula Nafaa's guiding philosophy. Wula Nafaa builds the self-governance capabilities of villagers by working with local collectives to foster dialogue on public policy, teaching community members relevant natural resource-related laws and regulations, and helping agricultural producers to reach out to buyers who will pay top dollar for their products. The program has already provided training in these topics and skills such as sustainable land use and non-traditional agricultural activities to over 3,500 farmers. “Engaging the community to manage their own land use is key to the Wula Nafaa Program's success,” said Mr. Povolny.

These efforts have indeed led to wealth—USAID conducted an estimation and comparison of 2011 agricultural yields of maize, millet, and sorghum grown both with and without conservation farming techniques. The comparison demonstrated substantial yield increases across four regional departments. For example, maize yield increases were 71 percent in Fatick, 49 percent in Kaolack, 26 percent in Tambacounda, and 25 percent in Kédougou. In these four departments, conservation farming techniques resulted in a total production increase of 1,400 tons of maize, 726 tons of millet, and 116 tons of sorghum. These results have proven to thousands of farmers that savvy natural resource management coupled with good governance can indeed bring the “benefits of the bush” to Senegal.

S. Gudnitz





FISHING FOR THE FUTURE

BIODIVERSITY AT RISK: A school of bigeye snappers at Richelieu Rock, Surin National Marine Park, South of Phuket, Thailand.

Photo Credit: Stuart Westmorland, Corbis

2012 could be called the year of combating global hunger. Following on the heels of Feed the Future, the U.S. Government's flagship initiative to promote food security which launched in 2010, a number of events this year, including World Water Day, the G-20 Summit, the Rio+20 conference, and World Water Week, have zeroed in on finding solutions to this global problem affecting close to one billion people. Governments and donors alike are beginning to pay attention to the important role that aquaculture and capture fisheries can play in increasing food security and reducing poverty.

Over half a billion people, 95 percent of them from developing countries, derive income from fish, both from capture fisheries (harvesting of fish from freshwater and marine environments) and aquaculture (farming of species such as shellfish, fish, and plants). Approximately 2.6 billion people in developing countries alone rely on fish to meet their basic protein and nutritional requirements. Fish protein is especially critical in poor communities where fish products are often the most inexpensive and easily accessible source of protein. In many countries across Africa, such as Sierra Leone, The Gambia, and Ghana, more than 60 percent of dietary protein comes from fish—more than double the world average per capita consumption.

“I FELT IT WAS IMPORTANT TO ALSO FOCUS ON THE URGENT CHALLENGE THAT CONFRONTS SOME ONE BILLION MEN, WOMEN, AND CHILDREN AROUND THE WORLD EVERY DAY—THE INJUSTICE OF CHRONIC HUNGER AND THE NEED FOR LONG-TERM FOOD SECURITY.”

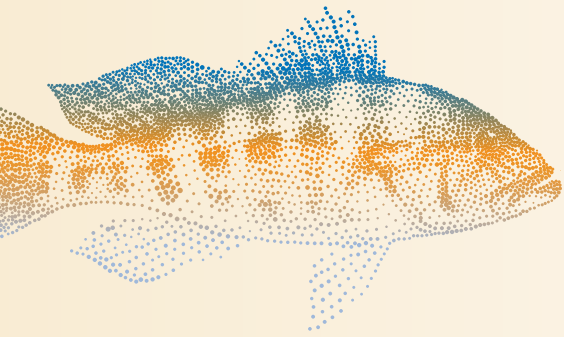
- President Obama on May 18, 2012



JOB CREATORS: A fish seller in Yemen proudly displays his wares. Fish create jobs for over half a billion people, 95 percent of whom are from developing countries.

Photo Credit: Hamed Sanabani





“FOR THOSE WHO CANNOT AFFORD TO BUY FOOD—ESPECIALLY NOT MEAT—FISH OBTAINED THROUGH THE HOUSEHOLD’S OWN EFFORTS (SUBSISTENCE) IS ESSENTIAL.”

- USAID/Global Seafood Alliance Report

Moreover, fish supplies essential fatty acids, vitamins, and minerals that are critical to human health, and especially for proper early childhood development. The pressing food security issue is not that there is a lack of fishers, but that fishing must become more sustainable if these billions and their children and grand-children are to thrive.

A Sustainable Alternative?

At present, despite the ubiquity of fish-centered livelihoods, international food security programs tend to focus first on traditional crops from farms on land to help meet the needs of the hungry. This is starting to change with the rapid expansion of the aquaculture industry, which is currently the fastest growing animal food-producing sector in the world, and USAID is now working to ensure that

both aquaculture and capture fisheries are better managed. If mismanaged, both capture fisheries and aquaculture can have negative environmental impacts.

With respect to aquaculture, fish are sometimes overfed, leading to excess nutrients that cause algae to bloom. When the algae die and decompose, the ecosystem’s oxygen is depleted which can result in large fish kills. If the fish feed contains chemicals like antibiotics, it can further harm the environment. In addition, raising fish in close quarters can sometimes increase the spread of disease.

At their current rate, many capture fisheries are unsustainable. Over 75 percent of global fish stocks are fully fished, over-fished, or already collapsed, making them of serious concern for global food security. Poorly managed fisheries mean that fishers must spend more time

A DELICATE BALANCE: A young girl in Ghana balances a plate of fish on her head. The majority of children in Ghana rely on fish for their essential nutrients.

Photo Credit: Kimie Tanaka





PRECARIOUS PERCHES: Stilt fishermen in Galle, Sri Lanka hold a stilt with one hand while fishing with a rod in the other.

Photo Credit: Tomas van Houtryve, VII Network

and money to bring home smaller and smaller catches. For many of the world's poor, fishing today results in a net economic drain on household income.

However, programs that work to improve capture fisheries and aquaculture management can reform and boost the sustainability of these sectors while increasing the livelihoods of the hundreds of millions of people employed in them. Food security experts are now taking heed of lessons learned and are working to identify new methods to boost fish supplies without compromising overall ecosystem health. They have pioneered ecosystem-based management approaches which, by taking a holistic approach, work to meet the diverse needs of local populations while maintaining ecosystems and conserving natural resources.

Protecting the Environment, Nutrition, and Communities

USAID is a big proponent of the ecosystem approach to fisheries management and is currently working in several countries and regions to build the capacity of decision makers and technical staff to implement it. The Indonesia Marine and Climate Support project, for example, recently trained personnel from local fisheries agencies and the Indonesian Ministry of Marine Affairs and Fisheries on best practices for ecosystem-based fisheries governance.

“The trainings were developed to help plan, develop, and manage fisheries by addressing the multiple needs and desires of societies without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems,” stated Celly Catharina, Marine Program Specialist for USAID/Indonesia.

Aquaculture can also benefit from a holistic ecosystem-oriented approach. USAID's Aquaculture & Fisheries Collaborative Research Support Program (AquaFish CRSP) and its predecessor CRSPs, have, since 1982, trained fish farmers—including many women—to manage water resources, improve the environment, craft responsible business plans, and generate income in countries across Latin America, Asia, and Africa. CRSPs are research, training, and capacity building programs that are implemented by U.S. universities and their developing country partners. An AquaFish CRSP project in Ghana is exploring new feed and water recycling approaches in order to increase the profit margins of tilapia farming in an environmentally friendly way. Floating fish feeds cut costs by reducing wasted feed while also safeguarding fish populations from the damage caused by overfeeding. Reusing pond water reduces labor and input costs while conserving water.

Aquaculture programs can make a remarkable impact on the lives of women and children. In Nicaragua and Mexico, poor women and children devote hours each day to collecting cockles, shellfish that are a great source of protein and vitamins, but are susceptible to disease when



Photo Credit:
Kimie Tanaka



Photo Credit:
Peg Herring

(Clockwise from top left)

LINING UP: Women sell fish at the market in Senegal.

AN UNCERTAIN HORIZON: Estero Aserradores lagoon in Nicaragua at sunset. Fishing and aquaculture are two of the leading industries in Nicaragua, but they are threatened by overfishing. USAID supports the establishment of protected areas in Nicaragua, which forestall the depletion of fish stocks and protect the environment.

A GROWING LIVELIHOOD: Fish farmers harvest farmed snakeheads for the market in Cambodia as part of USAID's Aquafish CRSP program.

A FULL PLATE: Hundreds of locals work, shop, and buy dried fish for their families at the Cantho market in Vietnam.



Photo Credit:
AquaFish CRSP

“WE WOULD GO OUT TO COLLECT COCKLES AND ONLY GET VERY FEW, AND THOSE WERE VERY SMALL. WE WEREN'T USED TO WORKING IN A TEAM; EVERYONE WAS JUST OUT TO GET WHAT THEY COULD.”

- Dionisia Páramo,
resident of Aserradores,
Nicaragua and cockle collector



farmed. The dwindling supplies and quality of the cockles led to long hours spent collecting them, fighting among the cockle collectors, and a growing number of hungry children. “We would go out to collect cockles and only get very few, and those were very small. We weren't used to working in a team; everyone was just out to get what they could,” explained Dionisia Páramo, a cockle collector from Aserradores, Nicaragua.

AquaFish CRSP took steps to boost the quality and safety of the cockles by establishing a center to clean them, ensuring that they are free of diseases. This not only makes them safe for local consumption, but also allows the farmers to certify the fish and get a higher price for them. The program additionally supports coastal resource governance and the establishment of no-take zones, which boost overall cockle supplies. This has made a big difference to women like Dionisia in the cockle industry. “We are now organized and us women, we have been empowered. We now lead the conservation efforts for the forest, mangrove, and black cockle. We now respect the no-take zones because we know the areas where the cockles will be breeding,” Ms. Páramo said.

Capture fisheries and aquaculture programs do not just foster food security, but also boost health, incomes, and quality of life for millions when carried out in an environmentally friendly way. If well managed, they can be capable of feeding the future. Perhaps 2013 will be the year of the fish.



Photo Credit:
Prum Somany



FOR MORE INFORMATION, VISIT:

CRSP Digest

CRSP Digest on Vimeo

Indonesia Marine and Climate Support Project



Photo Credit:
Federação das Indústrias do
Estado de São Paulo

RIO+20

Twenty years after the first United Nations Conference on Sustainable Development, Rio de Janeiro, Brazil once again saw its streets flood with academics, activists, and decision makers, all in town for three days of discussions focused on the nexus between sustainable development and the environment. Rio+20, held June 20-22, 2012, centered on seven themes: livelihoods, energy, sustainable cities, food security and agricultural sustainability, water, oceans, and disaster mitigation and resilience. The conference led to the mobilization of over \$500 billion and 700 commitments and culminated in world leaders signing an outcome document entitled "The Future We Want." A toolbox of best practices was also released. Prior to the start of Rio+20, U.N.-Water held an all-day event dedicated to discussing the relationship of water to Rio+20. During the conference, USAID joined a number of U.S.-based organizations in the global launching of the United States Water Partnership, which is dedicated to improving water resources around the world by combining the resources of organizations across the United States. Over \$500 million has been committed to this partnership over the next five years.

NEW ALLIANCE FOR FOOD SECURITY AND NUTRITION

Improving the economic conditions of 50 million people over the next 10 years is the goal of the New Alliance for Food Security and Nutrition. Strengthening food security commitments made by G-8 nations in 2009, this new alliance, launched by President Obama at the G-8 summit at Camp David on May 18, 2012, is a joint initiative by the G-8 countries, African leaders, and the private sector to increase agricultural production, food quality, and distribution within African nations. With an initial commitment of over \$3 billion from more than 45 private sector businesses, the alliance is already working in Ethiopia, Ghana, and Tanzania and has plans to quickly expand to other nations, including Burkina Faso, Côte d'Ivoire, and Mozambique. Within each country, the alliance will launch cooperation frameworks to help align activities with previous commitments, funding availabilities, and national policies.

12TH INTERNATIONAL CORAL REEF SYMPOSIUM

Approximately 85 percent of the coral reefs located in the Coral Triangle are now under threat from humans, states a report released at the 12th International Coral Reef Symposium (ICRS 2012), which took place in Cairns, Australia from July 9-13, 2012. ICRS 2012, the foremost conference dedicated to coral reefs, brought together experts from around the world to discuss 22 themes, including technologies for climate change and bleaching, fish and fisheries, management and monitoring, and restoration. Throughout the event, the Coral Triangle region received worldwide attention from the release of several reports that highlight the worsening state of the area's coral reefs. "Reefs at Risk Revisited in the Coral Triangle", published by the World Resources Institute with the support of USAID's Coral Triangle Support Partnership, highlighted the negative impact that human activities, particularly overfishing, pollution, and coastal development, have on reefs located in Indonesia, Papua New Guinea, Malaysia, Solomon Islands, the Philippines, and Timor-Leste. In addition, the National Oceanic and Atmospheric Administration released a new online tool, Coral Reef Watch, which uses a seasonal ecological forecast to predict coral bleaching spots around the world.

AFRICA WATER WEEK

Over 300 million Africans lack access to safe water, and 40 billion work hours are devoted each year to collecting water in Africa. One thousand stakeholders, decision makers, entrepreneurs, and academics came together on May 14-18, 2012, during the fourth Africa Water Week in Cairo. This annual event, organized by the African Ministers Council on Water (AMCOW) and convened in part by USAID's Further Advancing the Blue Revolution Initiative, focused on the theme "Water for Growth in Africa, AMCOW's Journey @ 10" in celebration of AMCOW's tenth anniversary. This conference focused on the upcoming challenges and potential for growth within Africa and the steps needed to attain that growth. A strategic framework for Water Security and Climate Resilient Development was also released during Africa Water Week.



Photo Credit:
Jim Maragos

AGRILINKS SEMINAR ON GLOBAL FISHERIES

On July 25, 2012, USAID's Agrilinks held an Ag Sector Council Seminar entitled *Fishing for the Future: The Why and How of Nature's Most Abundant Protein Source* to shed light on the challenges and opportunities of global fisheries. USAID's Richard Volk and Bryan Gillooly spoke about the importance of fish for livelihoods, nutrition, and early childhood development; the hazards of overfishing; and the holistic ecosystem approach to fisheries management used by USAID. They highlighted examples of USAID programs in Ghana and the Philippines that are helping reform the fisheries sector, boost health and livelihoods, and improve coastal and marine resources management.



MARK YOUR CALENDARS

World Water Week:

August 26-31, 2012

International Day for Disaster Reduction:

October 13, 2012

Global Handwashing Day:

October 15, 2012

World Toilet Day:

November 19, 2012

AFRICA'S BEST AND BRIGHTEST MAJOR IN BUILDING COMMUNITIES

Rahel Eshetu, Adanech Yared, and Lemlem Teweldemedhin are typical graduate students. The three young Ethiopian women wear jeans, pull their hair back in ponytails, fling messenger bags over their shoulders, and speak earnestly about their ideals. But these brilliant women do not spend their days cloistered in an ivory tower—they are far too busy interviewing their countrymen and women, studying river basins, and inspecting soil. They are not afraid to roll up their sleeves and get their hands dirty.

“I want to improve the water quality in my country,” Ms. Teweldemedhin said with determination. She has already done just that through her ongoing graduate research on Ethiopia’s Baro-Akobo river basin. Ms. Teweldemedhin, along with Ms. Eshetu, Ms. Yared, and 39 of Ethiopia’s best and brightest, were selected from a pool of 600 applicants to be the first students of the USAID-backed Ethiopian Institute of Water Resources graduate program in Water Resources and Engineering Management, one of several water-focused graduate programs at the Institute. Each student has three advisors: an American professor, an Ethiopian professor, and an Ethiopian water professional. The programs combine high-level academics, exchange programs, and concrete development work.

“But If You Teach a Man to Fish...”

The Institute was inaugurated by U.S. Ambassador to Ethiopia Donald Booth in February 2012 and was launched through a partnership between five Ethiopian universities, the University of Connecticut, and Alabama

A&M University. It was established under the auspices of the Africa-U.S. Higher Education Initiative, which USAID and the Association of Public and Land grant Universities pioneered in 2007 with implementing partner Higher Education for Development (HED).

The initiative is faced with the daunting task of addressing Africa’s multiple development priorities—unsafe drinking water, HIV, infant mortality, and food insecurity, among others—in a sustainable way that empowers Africans to solve their own problems. They have met this challenge through human and institutional capacity building at universities. In the past five years, the initiative’s partnerships have erected labs, put books on library shelves, and introduced the latest technology to campuses throughout Africa. They have also fostered partnerships to establish cutting-edge, development-oriented academic programs.

Building capacity has long been a priority of USAID, but these partnerships represent a new approach. “USAID has been investing in capacity building for many years because the Agency believes that development needs to be localized and owned by the citizens and governments of developing nations,” explained USAID/Ethiopia Education Office Chief Allyson Wainer. “Focusing on African universities will help improve education systems and research capabilities, which in turn will increase the knowledge base and skills needed to impact growth and development,” she said.

The 11 mutually beneficial partnerships between American universities and African universities focus on providing solutions to local development problems. Through



BLAZING TRAILS: (from left to right) M.Sc. candidate Lemlem Teweldemedhin, Ph.D. candidate Rahel Eshetu, EIWR Program Assistant/Gender Specialist Dr. Mary Thuo, and Ph.D. candidate Adanech Yared are all changing their country's future at the Water Resources and Engineering Management program at the Addis Ababa University-based Ethiopian Institute for Water Resources.

Photo Credit: HED

exchange programs, American scholars and students learn about Africa, development, and working in the field, while African scholars get access to extensive resources and learn about the latest development ideas and methodologies.

These high-level academic programs on African soil guard against a mass exodus of the most talented African students that occurs when quality of education is low and jobs are scarce. These programs enable students to get a top-notch education while staying at home. Though there is no guarantee that they won't migrate abroad after graduation, the programs are tailored to growing sectors with a high demand for educated professionals.

Moreover, the students' fieldwork during graduate school ties them to their communities. Elias Tedla Shifraw, a Ph.D. candidate at the Ethiopian Institute of Water Resources said, "I have a lot of experience, and this experience should be transferred to my compatriots." Another student, Malese Terezfe said, "[The Institute] has a long-term benefit to me and my country."

Most of the new programs actively recruit female graduate students. "There is an emphasis on improving women's participation in training, research, communications, and curriculum development," said HED Program Officer for Africa Teshome Alemneh. This has proven to be a challenge,



COMING TOGETHER: Kori community members meet for a sensitization event at the Kori Woreda Center in the Afar Region of Ethiopia.

Photo Credit: USAID/Ethiopia

but one that universities take seriously. Only four women have enrolled in graduate programs at the Institute so far. However, these four trailblazers will serve as important role models, paving the way for more women. In a country like Ethiopia, where almost two thirds of adult women are illiterate, this makes all the difference.

Upon graduation, students will be equipped to land secure jobs and to provide for their future families. The students are encouraged to go into academia and take faculty positions at the Institute or other institutions so they can teach even more people the development skills they have learned. Whether they go into academia, work in the field to foster development, or both, the students have promising futures ahead of them. Alemayehu Kasaye, a Master's candidate at the Institute said, "I have gained knowledge which develops my life for tomorrow."

Water Runs Through It

While the partnerships are diverse, one thing stands out: Most of them involve water. "Opportunities for economic development in the Sub-Saharan region

revolve around sustainable water resources management. Water infrastructure is a driving force in many sectors, especially health, agriculture, and energy," Ms. Wainer explained.

For example, Burkina Faso's International Institute for Water and Environment Engineering has teamed up with Tuskegee University and Princeton University to establish a network of centers of excellence in water and environmental science. This partnership began in April 2011, and there are already plans to expand the network to Ghana and Nigeria.

Water resource management is also central to Kenya's new Center for Sustainable Dryland

Ecosystems and Societies (CSDSES), which was established by a partnership between University of Nairobi and University of Colorado. Kenya's drylands are afflicted by frequent droughts that have worsened with climate change. This threatens the pastoralists who inhabit them, forcing them to constantly uproot in search of water. Professor Jesse T. Njoka, CSDSES Coordinator, said the center was "established as the hub of a web of collaborative institutions engaged in education, research, and action supporting dryland communities." The center not only offers graduate courses and research support, but also actively recruits pastoralists, especially women, to study at the center.

Because 70 percent of Africans are employed in farming and food security is an ever-present concern there, several of the partnerships focus on agriculture. One partnership between Senegal's Université Gaston Berger and the Ohio State University works to alleviate the "dustbowl effect" brought on by inadequate irrigation. They established a center for agricultural research and development and created degree programs in agronomy and crop production. Another partnership, between the University of Malawi

and Michigan State University, addresses sustainable land and water management, in line with the Government's recommendations for the country. This partnership develops the University of Malawi's institutional and research capacity in agro-ecosystem services to help expand understanding of the benefits that people derive from ecosystems.

High infant mortality rates and the prevalence of HIV/AIDS are additional problems that require the attention of highly trained professionals who understand on-the-ground realities. Programs at universities in Uganda, Liberia, and Ghana train students to address public health challenges in their communities.

Building capacity can also build a country. In the fledgling state of South Sudan, a partnership between Catholic University of South Sudan, University of Juba, and Virginia Tech helps rebuild the post-conflict nation. Mr. Alemneh said this could create opportunities for and enhance the livelihoods of hundreds of South Sudanese men and women. "Through this partnership, the capacity of University of Juba in the areas of agriculture and food security will be built, which is virtually non-existent," he said.

Communities Take Notice

USAID's approach is already making a difference. While cultivating local talent may take more time than flying out Western experts, the rewards have a greater impact. These pioneers are more likely to stay in country and see the results of their labors over the long term. Moreover, they are better equipped to come up with solutions to their countries' problems because they understand local situations. They have lived them.

Ms. Eshetu and Ms. Yared connected the plight of Ethiopian women like themselves with their studies during an interview with HED. "Due to climate change, women have more [of a work] load. [They have to] collect water, cook, and do everything," Ms. Eshetu said. Ms. Yared added, "Girls lose time because they [must] fetch water and then have no time to go to school."

This combination of brains and drive, and specialized, firsthand knowledge has proven potent. While most of the partnerships are only in their second year, they have already

impacted Africa outside the campus gates. The students have been going out into their communities, talking to residents, and using their newfound skills to help their neighbors, friends, and themselves.

Communities now approach the Institute for assistance. One of these communities is Kori, a pastoralist village of 2,000 in

Ethiopia's scorching desert-engulfed Afar region. The village had two wells, but the water in them had toxic fluoride content and a temperature that exceeded 138 degrees Fahrenheit. Drinking the water gave residents fluoride poisoning that affected their teeth, bones, and internal organs and caused social and psychological problems. The regional government capped the wells, but with no alternative water source for 50 miles, residents insisted the toxic water was better than nothing. After the Institute was approached, a team of researchers took to the desert. Based on their knowledge and research, they were able to design a de-fluoridation unit for the wells, restoring safe drinking water to all of Kori.

Experiences like these are rewarding, and students have been heartened by the communities' positive responses. "The community has a good attitude and respect for my research," Mr. Kasaye said.

These positive experiences have inspired students to give back. Mr. Shifraw summed it up when he said, "Unless we work for our country, who will be working for us?"

C. Zeilberger

"UNLESS WE WORK FOR OUR COUNTRY, WHO WILL BE WORKING FOR US?"



FOR MORE INFORMATION, VISIT:

HED Annual Report

The Institute on Facebook

CSDS on Facebook

CURRENTS

Currents provides a brief overview of selected USAID funded programs dedicated to water-related issues in the developing world. Each edition of *Global Waters* will highlight different programs from diverse regions and provide reports of the programs' recent activities, challenges, successes, and/or results. If you know of other USAID-funded programs that we might include in an upcoming edition of *Global Waters* please write to us at: waterteam@usaid.gov.



Photo Credit:
Fintrac, Inc.

Cambodia HARVEST

In only its second year of addressing rural vulnerability and ecosystem stability, Cambodia's HARVEST program has already begun increasing incomes and improving the nutrition of 70,000 households. HARVEST develops agricultural solutions to address poor productivity, postharvest losses, food safety, lack of market access, environmental degradation, and the effects of climate change on food vulnerable populations. HARVEST provides services in agriculture, aquaculture and fisheries, natural resource management, biodiversity, and climate change. To help water-deprived farmers grow more than one cycle of rice per year, two irrigation canals are being rehabilitated and should

be serviceable by 2012. HARVEST also provides technical assistance to farmers as they prepare their soil and seedling nurseries for planting for the upcoming wet rice-growing season. In early 2012, program agronomists and nutrition specialists trained representatives from schools on how to develop vegetable gardens to improve the nutrition and health of schoolchildren. Already, over 17,500 students have received benefits from the new gardens.

USAID-UNICEF Partnership Expands Access to Water

Indonesians broke ground on the construction of a clean water network in the Rappocini sub-district of Makassar, Indonesia on June 18, 2012. Funded through the Green and Clean Slums program, the USAID-UNICEF partnership works to improve water and sanitation for 70,000 Indonesians in urban areas, including 7,000 in Makassar. This program will help reduce child mortality, which is a top priority of USAID and UNICEF, as articulated in their call to action through the "Every Child Deserves a Fifth Birthday" campaign. The clean water network will provide thousands of Indonesians with access to clean water and sanitation at its 18 planned sites.



Photo Credit: Andrew Ashton

Radio Soap Opera Educates 2.5 Million Ghanaians About Coastal Resources Management



Photo Credit: Hen Mpoano

Change is in the airwaves for communities of coastal Ghana. Biribireba is a new radio soap opera that reaches up to 2.5 million people each week in six coastal districts of the western region of Ghana. The drama is part of a program which promotes coastal resources management in the region. Biribireba is only one part of a larger sustainable development program, Hen Mpoano, which means “our coast” in the local Fante language. The campaign uses social marketing strategies to bring attention to important issues and makes it easy for listeners to adopt the behavior changes demonstrated in the show. Each episode is broadcast within a talk show designed to promote listener feedback and comments on the environmental themes highlighted in the episode.

Ecosystem Approach For A More Water Secure Southern Africa

The International Union for Conservation of Nature is launching a new three-year project entitled “A Water Secure Future for Southern Africa: Applying the Ecosystem Approach in the Orange-Senqu Basin.” Working with local NGOs based in the four basin countries of Lesotho, South Africa, Botswana, and Namibia, USAID will support scientific analysis and

pilot programs that balance ecosystem requirements with human development needs to ensure the efficient use and sustainability of water in priority areas in the basin. The project will provide critical water for the mining and manufacturing industries, agriculture, energy, tourism, residential services, and conservation. Activities will support the Orange Senqu River Basin Commission and promote an integrated water management approach.



Photo Credit: David Cameron



WASHING UP: Children in Madagascar use the low cost, low tech, water-conserving tippy tap to wash their hands.

Photo Credit: Shahbaz Fawbush

TAKING HEALTH INTO THEIR OWN HANDS

Simple WASH Solutions Change Lives

Every day, we take hundreds of small, simple actions for granted—things like going to a public restroom, using a flush toilet, and washing our hands with soap. However, these basic parts of our daily routines are out of reach for over two billion people in the developing world. Diarrhea and acute respiratory infections, which kill millions of children under age five each year, are the consequence.

USAID's WASHplus project set out to fight these two killers. The project, operated by FHI 360 and its partners CARE and Winrock International, is a follow-on program that builds on the efforts of its predecessor, the Hygiene Improvement Project (HIP). HIP ended in 2010 and worked to improve water quality and hygiene behaviors in homes, schools, health centers, markets, and religious centers, with populations including schoolchildren, the urban poor, and those living with HIV. WASHplus takes into account lessons learned from HIP and builds on its successes while trying to avoid its pitfalls. It works in areas such as creative financing, innovation, and public-private partnerships and taps into a network of partners on the ground in Madagascar, Kenya, and Zambia. "WASHplus' ability to draw on the expertise of a group of resource partners working worldwide, with their country and sector specific knowledge, allows us to be more responsive and flexible to support new activities or integrate a WASH component into an already existing program," said Sandra Callier, Project Director for WASHplus.

Traditionally, WASH stands for water, sanitation and hygiene. But the "WASH" in WASHplus refers to the project's twin goals of increasing access to and lowering the costs of water and sanitation services and improving personal hygiene habits. The "plus" represents the project's efforts to combat pneumonia and other respiratory illnesses caused by indoor air pollution from inefficient or misused cooking stoves.

Making a SPLASH

"WASHplus achieves its goals by engaging different sectors and organizations in various communities for lasting change," Ms. Callier said. One WASHplus program focuses its efforts on boosting child education in Zambia. Many students are forced to stay home from school due to diarrheal diseases caused by poor sanitation and unsafe water, and girls also face menstrual hygiene challenges as they grow older, making it even harder for them keep up with their studies. When girls reach puberty, they often stop going to school because private, secure, and gender-segregated toilets and access to water for personal hygiene are not available. Not only is the health of these girls and boys at risk, but so is their education and their prospects for future employment.

In June 2012, WASHplus launched Schools Promoting Learning Achievement through Sanitation and Hygiene (SPLASH) through the Zambian Ministry of Education. The project increases attendance by improving access to safe drinking water and sanitation and promoting hygiene education. It has done so by repairing or constructing school boreholes and latrines and introducing child-friendly handwashing stations suitable for group handwashing in schools. In addition, the program is launching a media campaign that targets children and promotes healthy habits such as treating drinking water and washing hands with soap.

"The program worked to lower girls' dropout rates and boosted female teacher attrition by introducing improved water and sanitation facilities."

SPLASH has learned from and taken steps to address the challenges faced by HIP. HIP found in Madagascar that bringing safe water to schools was challenging because of the large amount of water that needed to be disinfected to serve schools with an average size of 300 students, and the fact that not all schools could obtain water treatment products on the market.



A SAFE SPOT: The SPLASH project in Zambia will build new school latrines or refurbish old ones such as this one for staff at a school in Mambwe, which will not only provide a cleaner and safer environment for everyone, but will also contribute to increased retention of female teachers and decrease girls' drop out rates.

Photo Credit: Sarah Fry

To address this challenge, HIP introduced alternatives such as solar disinfection (SODIS). By learning from HIP's experience, WASHplus has been able to introduce technology such as biosand filters, chlorination, and SODIS to ensure the schools have safe water.

SPLASH is also building upon HIP's successes in schools, especially with regard to women and girls. The program worked to lower girls' dropout rates and boost female teacher retention by introducing improved water and sanitation facilities. Female school teachers who benefited from HIP's water and sanitation activities say this made all the difference. "Before we had WASH instruction, students were often sick with diarrhea," said Madame Brigitte, a teacher at the Isorana School in south-central Madagascar. "Now the students aren't sick and can study regularly," she said. Many more girls will soon benefit, as SPLASH will work in more than 641 primary schools in four districts of two provinces in Zambia.

Small Doable Actions

People living with HIV and AIDS also have a great need for easy access to safe water and sanitation. Because of weakened immune systems, diarrhea and other infectious diseases can have severe health consequences.

In Kenya, WASHplus is building on the work started by HIP and C-Change, a communication project based at FHI 360, to reduce the impact of diarrhea on HIV-affected patients and families. Using the curriculum established by these projects, WASHplus is training partners on the ground to then train community health workers on ways that people living with HIV and their families can improve WASH practices. Topics include how to safely treat and store drinking water in homes, when and how to effectively wash hands, and how to dispose of feces safely. Behavior change is negotiated through the "small doable actions" approach developed by HIP.

"WASHplus takes into account lessons learned from HIP, and builds on its successes while trying to avoid its pitfalls."

“Families are encouraged to try simple, easy-to-do steps to improve their health,” said Merri Weinger, USAID’s Agreement Officer for WASHplus. These actions might be to use a tippy tap to wash hands when no running water is available or making bedpans or a portable potty for people living with HIV who are too weak to get up and use a latrine. And adding a pole or bars inside a latrine for support can also make life easier for someone weakened by disease. “This approach is especially effective in settings where resources are limited, and making improvements one step at a time can increase the likelihood that a family will stick to these new practices over time,” Ms. Weinger said.

Communities Take the Lead

While diarrhea and other infectious diseases pose a particular threat to HIV/AIDS patients, they threaten everyone, so HIP’s and WASHplus’ partners encourage communities to take a bigger role in fostering public health.

In Madagascar, WASHplus is building on HIP’s efforts to renovate public sanitation facilities, known as sanitary blocks, which include showers, toilets, and laundry areas. In a growing number of urban communities, these blocks are being placed in strategic locations, including markets and transportation hubs. These efforts have been most successful when community members stepped up. In the town of Mahitsy, for example, the block was poorly managed, dirty, and did not generate revenue for the municipality. When it was renovated by HIP, the municipality invited community groups to bid on managing it. The winning bid came from a local scout troop. Students from a local Scouts organization took over managing the block and generated considerable income for their troop and for the municipality, who reinvested the funds in refurbishing other blocks. “This is a win-win for us. We are students in management, and managing the block is an opportunity to serve the community and to do a management project for our studies,” one of the scouts, Tsilavina, said.

Based on these sanitation successes, WASHplus is pioneering new approaches untested by HIP. The program is now exploring new public-private options for emptying community toilets when they fill up with human waste, a serious challenge in urban areas. They found that the day laborers tasked with emptying the toilets face serious health hazards, engage in questionable disposal practices, and lack the capacity to improve the



SIMPLE APPROACH: Small doable actions such as job aids, like this one in rural Ethiopia, can have a huge impact on hygiene practices.

Photo Credit: Richard Lord

quality of their services. Pilot projects will test low-cost options for integrated hygienic fecal sludge management, including sludge removal, transfer, transportation, disposal, and treatment.

WASHplus is currently expanding to Bangladesh, Benin, Uganda, and Kenya. Soon many more will be able to do those little things we take for granted, but that do make all the difference.

P. Mantey with C. Wixted



FOR MORE INFORMATION, VISIT:

WASHplus on Twitter

USAID Every Child Deserves
a 5th Birthday Campaign

WASHplus Weekly Newsletter



IN PRINT:



Global Water Issues

Global Water Issues explores the political, social, and economic challenges presented by threats to earth's most precious resource. Starting with a foreword by U.S. Under Secretary of State for Democracy and Global Affairs, Maria Otero, this compendium of articles describes the links between water, health, climate change, and food security. It explains that changes must be made in farming practices, aquaculture, sanitation, and water management to address the fact that the global well of water is starting to go dry and the accessible supply of fresh water is running short. *Global Water Issues* offers hope for a more water-secure future and suggests needed changes in policy, infrastructure, and behavior.



MORE INFORMATION



The State of World Fisheries and Aquaculture Report 2012

The latest FAO publication, *The State of Fisheries and Aquaculture*, highlights the sector's global importance to food security, nutrition, and the economy. The report urges governments to make efforts to ensure that fisheries around the world are sustainable, and it notes that many of the marine fish stocks being monitored remain under great pressure. Small-scale fisheries employ more than 90 percent of the world's capture fishers and are vital to food security and poverty prevention. The FAO Committee on Fisheries has recommended developing international voluntary guidelines to contribute to policy development, secure small-scale fisheries, and create benefits.



MORE INFORMATION

ONLINE:



Akvopedia

Akvo, the Dutch non-profit foundation that helps connect donors and projects in the developing world, has created Akvopedia, an open water and sanitation resource much like Wikipedia. Akvopedia contains five portals: water, sanitation, approaches, organizations, and finance. Akvopedia currently contains over 700 articles in English, with a well-developed sanitation portal. There is hope that users will fully develop each portal. The goal of Akvopedia is to improve water and sanitation projects through knowledge exchange on smart and affordable technical solutions and effective approaches. Akvo is known for its open source platform that helps users track progress and funding in five focus areas: water and sanitation, education, economic development, healthcare and IT, and development.



MORE INFORMATION



Food Security and Nutrition Network – Resource Library: Water and Sanitation

The Food Security and Nutrition Network resource library offers downloadable guides, tools, and training materials on many different program areas, including water and sanitation. Recommended materials can be browsed by topic, date, popularity, and rating by portal members. The library also offers information to task forces and interest groups on a number of topics, including agriculture, food security, gender, nutrition, and behavior change. The network always welcomes submissions and encourages collaboration among peers.



MORE INFORMATION

ON VIDEO:



Climate Change Adaptation for Tanzania's Coastal Villages

In the Coastal Resources Center's series of short videos, different approaches to managing the impacts of climate change in coastal cities are studied. Included in this video is the PWANI program in Tanzania, which means "coast" in Swahili. This program is working to assess local impacts of climate change and identify ways communities can adapt by using their own resources and knowledge. The community formed climate change committees that go through vulnerability assessment and adaptation planning training. Committees then assess climate threats, identify local assets susceptible to climate change, and evaluate the ability of each village to implement different adaptive measures at a low cost.



MORE INFORMATION



Coral Reefs – Polyps in Peril

Ocean advocate Céline Cousteau and cartoonist Jim Toomey teamed up with the World Resources Institute to create the short animated film, *Coral Reefs: Polyps in Peril*. It tells the story of coral reefs, known as the cradle of life in the ocean, with humor and admiration for these incredible ecosystems. Viewers learn how the unique biology of coral reefs protect communities and fish, provide medicine and supplements to people around the world, and promote tourism. However, there are serious problems that threaten their existence: overfishing, ocean acidification, pollution, and climate change. The film also explores what individuals can do to help save coral reefs, including consuming sustainable seafood, lowering their CO₂ footprint, and supporting marine protected areas.



MORE INFORMATION



USAID
FROM THE AMERICAN PEOPLE

Snapshots from Around the World



Photo Credit:
Programa Midas

Colombia



Photo Credit:
Kasia McCormick

Ghana



Photo Credit:
USAID Vietnam

Vietnam

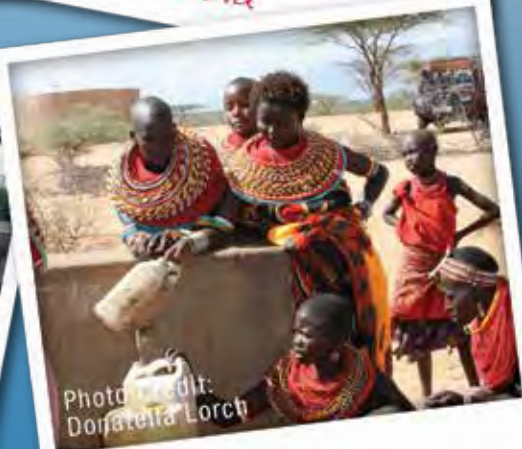


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Water, Water Everywhere