



USAID
FROM THE AMERICAN PEOPLE

GLOBAL WATERS

USAID's Newsletter for
Integrated Water
Resources Management

FROM SCARCITY TO SECURITY Understanding Water's Role in the Global Food Crisis



Photo Credit: Photo by Gene Owens, Courtesy of DAI

In Focus



**Water and Food:
Dual Crises,
Shared Challenges**



**Rwanda and
Beyond:
Feeding the Future
with Innovation**

Real Impact



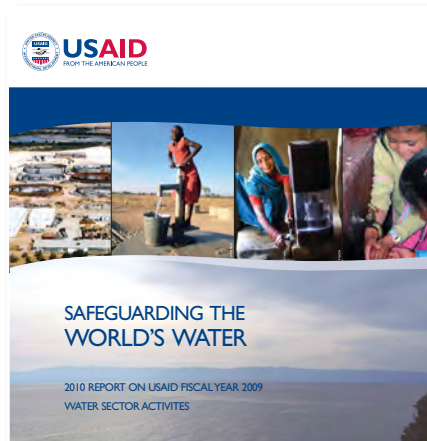
**G-Fish Alliance
Yields Sustainable
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COMING SOON



RECENT & UPCOMING EVENTS



- December 6-8, 2010
**Transboundary
Aquifers: Challenges
and New Directions**
Paris, France
 - January 19-21, 2011
**National Conference
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In Focus

Addressing the Global Water and Food Crises

Photo Credit: USAID



MAKING EVERY DROP COUNT: Iraqi farmer using furrow and drip irrigation techniques for crops

available to meet the basic needs of households, is compounded by economics, when poor households simply do not have sufficient income to purchase what water and food is available.

The question facing the world becomes how we are to produce more food – often with less water - to meet the needs of growing populations when existing levels are inadequate. This calls for substantially greater efficiencies in the way that water is used to produce and process food, along with an understanding of which food production systems work best in different, and rapidly changing, ecosystems.

This issue of *Global Waters* focuses on the role of water security in addressing food security, and the challenges inherent in both. In this edition, we highlight five programs that demonstrate USAID’s ongoing commitment to employing effective water resources management – ranging from land-based agriculture to marine fisheries – to promote food security among some of the world’s poorest populations.

One billion people are estimated to lack sufficient water to meet their needs. Food scarcity affects approximately 925 million people each year. By 2050 world demand for food is predicted to double.

The primary challenge affecting water use and food production is that large segments of populations in developing areas already experience scarcities of both water and food on a daily basis. Physical scarcity, when there is not enough food and water

Increased food production must often be achieved within food systems that are at, or have surpassed, their ecological limits, often due to poor management. Terrestrial, freshwater, coastal, and marine ecosystems are all under stress and in some cases

The question facing the world becomes how are we to produce more food - often with less water.

near collapse. Some rivers, such as the Yellow and Jordan Rivers, no longer reach the sea because their waters have been appropriated for agriculture, industrial, and household use, reducing the productivity of natural systems and fisheries. Groundwater levels in some areas, such as in Asia, have dropped more than 450 feet in two or three decades due to unsustainable levels of pumping for irrigation.

The path forward is to promote policies and programs that emphasize a “systems approach” to food production that integrates environmental and socioeconomic components. Food production is a socio-ecological system that comprises biophysical elements such as water, soil, crops and fisheries,



as well as markets, livelihood strategies, policies and overall governance. A holistic, multi-level adaptive approach to management is needed to ensure productivity and long-term resiliency in the face of increasing demand for ecological goods and services, as well as impacts from climate change. Integrating the needs of ecosystems for water will be as complex as it is necessary, to the long-term success of any food production system. The Spiny Lobster Initiative highlighted in this issue provides one example of how USAID and its partners are addressing the issues associated with challenges across the entire fishery value chain.



Photo Credit: Toby Jorin/USAID

FIRMLY ANCHORED: Local fisherman, Victor Cordova, anchors his boat in the Cayos Cochinos Islands off Honduras' north coast.

To achieve maximum efficiency, productivity in food systems should be tackled at the landscape and seascape scale. This allows for more effective management than an approach focusing solely at the level of the farm or fishing vessel. Food production can and should take place within the context of eco-regional planning. The U.S. Coral Triangle Initiative Support Program illustrates efforts undertaken by USAID and its partners to encourage public participation and build collaborative partnerships on a multi-national, transboundary scale.

Productive agricultural lands in a given region can be used for farming while other areas can be left undeveloped to maintain vital ecological goods and services, such as regulating water flows and mitigating floods and droughts. The Middle East Water and Livelihoods Initiative (WLI) featured in our News from the Field Section offers one example of a multi-level approach to water and food security challenges that includes the field, farm, watershed, and basin. The project takes into account the interactions among people, resources, and the environment.

Building stewardship and a culture of water conservation is critical in water-scarce regions. Innovative programs such as the Meknès Pilot Project in Morocco that use treated wastewater for agricultural use have the ability to dramatically impact water resources management and food productivity in the region. Our article on President Obama's Feed the Future initiative identifies land husbandry, water harvesting, and hillside irrigation techniques being employed in countries like Rwanda to make the crops more resilient to climate change.

USAID has several decades of experience in water and food production programs throughout the developing world. The Agency's commitment to addressing the interdependent water and food crises has been renewed and invigorated. This edition of *Global Waters* brings to light some of the programs and partnerships that are dedicated to addressing that ongoing commitment.

The USAID Water Team



In Focus

Water Key to Rwanda and Other Feed the Future Focus Countries



Photo Credit: MINAGRI/Rwanda

RWANDA LEADS THE WAY: With support from FTF, Rwanda's farmers increase productivity and prevent soil erosion by constructing radical terraces.

Today, close to 925 million people worldwide suffer from chronic hunger and poverty. Yearly, at least 3.5 million children die from causes related to undernutrition, whose root cause is poverty. Undernutrition can shorten lives, affect physical and cognitive development, cost countries as much as 3 percent of their annual gross domestic product, and reduce lifetime potential individual earnings by 10 percent.

In July 2009, global leaders at the G8 Summit in L'Aquila, Italy, laid the foundation for a concerted effort to create sustainable global food security. When President Barack Obama committed more than \$3.5 billion for agriculture development and food security over three years, other donors leveraged this pledge with another \$18.5 billion in support of a shared approach.

This approach, endorsed by 193 countries at the November 2009 World Summit on Food Security in Rome, supports the United Nations Millennium Development Goal 1 to halve, by year 2015, the proportion of people living in extreme poverty. Donors pledged to invest in comprehensive, country-owned, strategically coordinated plans that leverage and align multilateral institution efforts that deliver on sustained and accountable commitments.

To meet U.S. obligations, President Obama launched the Feed the Future (FTF) initiative, a whole-of-government approach

“Water is one of the four pillars of agriculture, along with soil, seed, and labor.”

that involves a variety of U.S. agencies, including the U.S. Agency for International Development (USAID), Department of State, Department of Agriculture, Millennium Challenge Corporation, Peace Corps, and Department of the Treasury. In May 2010, USAID Administrator, Dr. Rajiv Shah, announced FTF's pledge to “work in partnership, not patronage” with 16 potential focus countries from Africa, plus Bangladesh, Guatemala, Nepal, and Nicaragua. Selection criteria included poverty dynamics and prevalence, undernutrition, country commitment, and prospects for agriculture-led growth.

And how important is water in all of this?

“Water is one of the four pillars of agriculture, along with soil, seed, and labor,” says USAID staff member and FTF Senior Advisor, Dr. Lawrence Rubey. “We are seeing greater emphasis on water as a resource because of climate change, which is expected to lead to more intense and variable rainfall and drought. Smart water management is vital.” The Feed the Future Guide, May 2010 affirms, “Sound management of natural assets – including land, water, forests, and



fisheries – provides benefits to food production, environmental health, and nutrition.” Also, according to the guide, “Properly managed watersheds, rangelands, forests, and fisheries enhance ecosystem functions that boost agricultural productivity, increase access to clean water, replenish aquifers, mitigate damage from storms and floods, and reduce negative environmental impacts from agriculture.”

In one potential FTF focus country, Rwanda, almost 80% of the nation’s labor force makes its living from agriculture. About 52% of Rwanda’s children are chronically malnourished. Most of the arable land is on hillsides. Soil erosion, lack of access to markets and finance, and inefficiencies of scale contribute to food insecurity. Rwanda’s agriculture is almost entirely rain-fed, making climate change, drought, and landslides major concerns.

The Rwanda/USAID Mission’s FTF implementation plan details a land husbandry, water harvesting, and hillside irrigation (LWH) initiative. The Rwandan government designed LWH several years ago when it recognized the country’s massive soil erosion problem and other vulnerabilities to climate change. LWH is now scheduled to be funded not only by Rwanda’s Ministry of Agriculture and Animal Resources, but by partners that include the governments of Canada and Japan, the World Bank, the World Bank-administered Global Agriculture and Food Security Program, and FTF.

“The opportunity to support a program that is government-led and is built in consultation with multiple stakeholders represents a new partner relationship. “The U.S. government is working to make this happen,” said Brian Frantz, USAID/Rwanda’s general development officer. “This collaboration and leveraging with others gives us a chance to have a real impact on shared objectives.”

Modern agriculture practices are not widespread in Rwanda. Most of the Rwanda project area will benefit from land husbandry, which uses better soil management and rainwater catchment techniques. Fewer crops will be lost because terracing will make Rwanda more resilient to the negative effects of climate change. Water harvesting will allow for year-round irrigation. By 2012, all interventions are expected to increase traditional annual crops produced on rain-fed lands by 20%, perennial crops by 40%, and irrigated crops by 50%.



Photo Credit: USAID/Tanzania

PROUD ACCOMPLISHMENT: Upendo Women Growers Association’s Chairwoman Rose Peter shows off sweet peppers grown in a greenhouse funded through the FTF initiative.

“A goal set by the Rwandan government has been to increase the share of arable land under sustainable management practices. This program already is doing this,” Frantz continued.

In an August 4, 2010 speech, Ambassador William Garvelink, FTF’s Deputy Coordinator for Development, stated: “Feed the Future recognizes that food security is not just about food, but it is closely linked to economic security, environmental security, and human security.”

Recognizing the critical role of water in food security, the Ambassador elaborated, “As we review emerging strategies on how best to implement Feed the Future on the ground, we see that water – from farming to important links between clean water and child nutrition – is a critical component throughout.”

Successfully integrating all components necessary to improve the food security of the global population is clearly the challenge and the hope of this vital initiative. *M. Davis*

For more information, visit:

<http://www.feedthefuture.gov/>

http://www.usaid.gov/our_work/environment/water/response_water_crisis.html

http://www.fao.org/fileadmin/templates/wsfs/Summit/Docs/Final_Declaration/WFSF09_Declaration.pdf

<http://www.un.org/millenniumgoals/>



Real Impact

Global FISH Alliance Reforms Honduran Lobster Fishery



Photo Credit: Toby Jorin/AED

HOMeward BOUND: Fisherman hoists his sail and is headed home after catching spiny lobster off the coast of Honduras.

By 2009, Honduran coastal communities recognized a growing crisis in their spiny lobster fishery. Lobster stocks had declined 35% due to overfishing, habitat degradation from destructive fishing practices and removal of critical fish habitats such as mangrove forests and coral reefs. About 1,500 divers suffered disabilities due to unsafe diving practices and 300 men had already lost their lives pursuing lobsters at greater depths. When US demand for lobsters dropped in the economic recession, prices fell lower than the cost of catching them. After generations of harvesting lobsters for food and export, coastal communities faced the harsh realities of growing poverty and food insecurity resulting from the loss of a productive fishery.

USAID responded to the crisis with an ecosystem-based management approach to restore habitat and rebuild lobster stocks. In partnership with the Academy for Educational Development (AED) and Darden Restaurants, the world's largest

full-service restaurant company, the USAID-sponsored Global Fish Alliance (G-FISH) created the Spiny Lobster Initiative (SLI) to reform the fishery. SLI used the SCALE (System-wide Collaborative Action for Livelihoods and the Environment) methodology to encourage public participation and build collaborative partnerships across the entire fishery value chain.

By working with multiple stakeholders from governmental, private, social, and environmental sectors, SLI made remarkable progress in their first year to improve fishery management. As part of the SCALE process, AED organized a Whole-System-in-the-Room Workshop to define goals to reform the fishery and gain commitments to achieve them. "We created a space for stakeholders across the whole value chain to reach common ground and to determine the changes they wanted to see," said Bette Booth, AED/SLI Project Director.



As a result of a 2009 workshop, stakeholders identified ten goals to reform the fishery and made commitments to work together to achieve them, for example:

- The SLI focused on keeping information flowing among participants via several channels including a monthly bulletin.
- The Merchant Marines, Fisheries Directorate, and Navy began working in closer coordination and communication to ensure compliance with fishing regulations.
- The Roatan Marine Park and the Honduran Hotel and Restaurant Association implemented a campaign to increase responsible serving and consumption of lobsters in restaurants.
- The Roatan private sector initiated the idea of holding a technical symposium to discuss marketing strategies and best management practices and pledged \$10,000 to sponsor the event.

meeting with the fisheries sector. Earlier, in May 2009, the government had signed a Regional Fishery Ordinance on Spiny Lobster that recommended new fishery regulations for Caribbean nations. Among other laws, the Ordinance bans scuba diving for lobster beginning in July 2011. The scuba diving ban will affect about 3,000 active divers and promises to create challenges to find alternative livelihoods, especially among Mosquitia indigenous communities. To address this problem, the SLI helped the government set a vision for fishery reform that keeps fishers working. Also, a recently developed Mosquitia Master Plan outlines guidelines for sustainable development of this region so rich in biodiversity.

By supporting strong demand for a sustainable lobster fishery, Darden Restaurants has served as a critical private partner in the success of the SLI. As a major buyer of spiny lobster, Darden has committed to sustainable fisheries and only purchases lobster caught in traps. In the NGO community, the World Wildlife Fund has served as an important partner to bring good science to the process. Their knowledge of local conditions has been invaluable to the SLI.

In reflecting on the SLI process, Jimmy Andino, SLI Chief of Party attributes the success of the program to an approach that gives everyone a chance to speak out. “At first we worried about losing control,” he said. “But the SLI Working Group took ownership of the process and showed real leadership in their willingness to transform the fishery into a sustainable one based on principles of ecosystem-based management.”

As a result of the SLI, the fisheries sector is poised for major reform. Stakeholders have agreed on the need for good management, best practices, marine zoning, and ecological reserves to restore the stocks and protect the rich biodiversity of the Meso-American reef off Honduran shores. “An upcoming focus will be to help connect the sector to the markets and secure the capital and technical assistance needed to make the shift,” said Ms. Booth. “But to support this process into the implementation stage, we hope to secure additional funding to transform the fishery into a sustainable model for coastal development.” Based on the initial success of the SLI, it seems likely that investors will continue to support the program through the transformation ahead. *S. Nelson*

Photo Credit: Tony Jorin/AMC



CATCH OF THE DAY: Fisherman displays spiny lobster.

SLI then successfully hosted the Technical Symposium on the Sustainable, Profitable, and Safe Management of the Spiny Lobster, in June 2010. This Symposium attracted more than 200 Honduran stakeholders and 15 from Nicaragua. It promoted the ecosystem-based management best practices needed to achieve the ten goals set in the 2009 workshop, including certification, trends and access to new markets, restoration and management of critical habitats, rights-based management, and economic alternatives for displaced lobster divers. Throughout this process, the Honduran government played a growing and important role to support the SLI. A new Honduran government in 2010 made fisheries reform among their top priorities and asked SLI to organize their first

For more information about the Global FISH Alliance, visit:

www.globalfishalliance.org



News from the Field

The Coral Triangle: USAID Supports Ground-Breaking Initiative to Protect the Global Epicenter of Marine Biodiversity

Photo Credit: A. Millard/TNC



PROVINCIAL COASTLINE: Wayag Sayang, a marine protected area in northern Raja Ampat, New Guinea.

“Over 100 million of our citizens depend every day on these critical marine resources for their income, their livelihoods, their food security, and the protection of their coast. These resources are threatened.”

The islands of Southeast Asia and Melanesia are home to over 360 million people, one-third of whom are directly dependent on coastal and marine resources for their livelihoods and food security. In an area known as the Coral Triangle, citizens of Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste live at the global epicenter of marine biodiversity, near waters that are home to over 500 species of reef building corals and 3,000 species of fish. Within the Coral Triangle, fisheries are a principal source of food and livelihood, providing about 70% of protein intake for coastal populations and up to 90% in poor villages. The region hosts critical spawning and juvenile grow-out areas for five commercial tuna species, producing approximately 40% of the world’s tuna. Unfortunately, these resources are in serious peril. Up to 80% of the coral reefs and fisheries in areas of the Coral Triangle are under risk of collapse.

“Over 100 million of our citizens depend every day on these critical marine resources for their income, their livelihoods, their food security and the protection of their coast. These resources are threatened,” warned Susilo B. Yudhoyono, President of Indonesia, at the World Ocean Conference in May 2009 in Manado, Indonesia. The marine and coastal resources of the Coral Triangle face immediate risks from a range of factors,

including over-fishing and unsustainable fishing methods, land-based sources of pollution, and climate change. At the Conference, the heads of government of the six countries of the Coral Triangle, committed to joining forces to use innovative, cutting edge approaches to fisheries and biodiversity conservation with the aim of safeguarding food security, reducing and preventing poverty, and facilitating adaptation to climate change. The launch of the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) is a historic and groundbreaking multi-lateral effort unparalleled in its scope, scale, and ambition.

Regional commitment and cooperation is expected to catalyze, expand, and sustain national and local-level implementation efforts through the CTI Regional Plan of Action endorsed and adopted by the six Coral Triangle countries in 2009. The plan provides a framework of goals, targets, actions and timelines that will address regional priorities over the next decades. Within the broad framework of the plan, the six countries have developed National Plans of Action that address the unique needs and priorities of each Coral Triangle country but enable multi-lateral action as needed.



Recognizing the potential of CTI-CFF to be a truly transformative regional initiative with far reaching environmental and economic benefits, USAID is providing \$42 million of financial and technical support through the five year U.S. Coral Triangle Initiative Support Program (USCTI). The USCTI is designed to facilitate the Coral Triangle countries' implementation of the CTI Regional Plan of Action through assistance from the National Oceanic and Atmospheric Administration, a Program Integrator contract, and the Coral Triangle Support Partnership (CTSP). The majority of the funding supports the CTSP, a consortium of NGOs that includes the World Wildlife Fund, The Nature Conservancy, and Conservation International. The program works with other donors including the Government of Australia and the Asian Development Bank.



Photo Credit: Catherine Plume

PRODUCTIVE DAY AT SEA: Indonesian fishermen take advantage of a low tide in the Bali Sea.

Based on regional and national plans of action, the USCTI focuses on four goals:

1. Strengthening regional and national platforms to catalyze and sustain integrated marine and coastal management
2. Establishing and implementing an ecosystem approach to fisheries management
3. Improving marine protected area management and enforcement; and
4. Building capacity to adapt to climate change.



Photo Credit: S. Mangunhar/TNC

A VIBRANT COMMUNITY: Coral reefs flourish in Kofiau, a marine protected area in Karabas, Raja Ampat, New Guinea.

Entering its third year, the USCTI has seen remarkable progress working with the Coral Triangle nations, despite the challenges posed by an initiative as ambitious as the CTI and the imperative to simultaneously address needs at the regional, national, and local levels. As Honorable Hugua, regent of Wakatobi Indonesia attested, "If it is just government, it will fail; but if you involve the community, it will be successful." Inspired by participation in a USCTI regional exchange, the Hon. Hugua's statement is a testament to the urgency felt and the commitment generated for the CTI down to the community level. Through his ground breaking efforts, coastal leaders in Indonesia are creating a new demand for coastal management as a basic municipal service and working towards creating a Coral Triangle-wide movement. This is just one example of the success of USCTI's approach that addresses issues such as climate change as a regional long term challenge, while supporting the immediate needs for tools and actions in communities experiencing its impacts on the front lines. *S. Nelson*

For more information, visit:

<http://www.cti-secretariat.net>

<http://www.uscti.org>



News from the Field

Tapping Potential

USAID Morocco Project Looks at Reusing Treated Wastewater



Photo Credit: Fouad Rachidi/DAI

TAPPED RESOURCE: Project site for wastewater treatment plant located in the city of Meknès.

For the people of Morocco, economic growth and social development takes place in a water-scarce environment. With water resources showing significant signs of strain in the poorest rural areas where agriculture constitutes the main source of income, pollution and destructive agricultural practices threaten Morocco's limited water supply. The population is expected to double over the next thirty years, which will increase demands on water and cause supply amounts to fall further. Continued drought and soil erosion will further add to the urgency for managing Morocco's water more effectively.

One way USAID plans to increase access to this precious resource is through the Morocco Economic Competiveness (MEC) Program, which will employ a multisectoral approach to reducing barriers to productivity, trade and investment in Morocco. "Improving the business environment, increasing the productivity of irrigation water for agricultural use, and strengthening workforce development among the Moroccan youth are the three core components of the MEC Program," said Andrew Watson, MEC's Chief of Party. The program will work to improve the management of water resources by analyzing

"With water scarcity worsening and competition over water resources increasing, reusing treated wastewater is an increasingly attractive option."

and recommending better policy and institutional reforms, while examining existing water sources and increasing the supply through the expansion of the use of treated wastewater for agriculture. The \$28 million funded initiative will span four years.

MEC's water component will support the implementation of the Government of Morocco Plan, Maroc Vert, whose goal is to promote sustainable agricultural growth, alleviate rural poverty, and optimize the use of water resources. The Meknès Pilot Project for Reuse of Treated Wastewater was developed to achieve its goal by targeting the implementation of water reforms that lead to better use and efficiency of water resources in irrigated zones, thereby increasing agricultural productivity



per unit of consumed water and farmers' incomes. One of the activities will target the city of Meknès.

The Meknès Pilot Project is extremely important for Morocco because treated wastewater for agricultural use is a key resource for improving productivity in the Agri-Business sectors, especially in areas experiencing persistent water deficits. This northern Moroccan city was an ideal location for the pilot program due to preliminary research studies that were conducted by a predecessor USAID project, Advancing the Blue Revolution Initiative (ABRI). "ABRI served to bring together an international alliance of like-minded stakeholders seeking to transform the culture and governance of water resources in the Middle East and Africa, and has been a great plus for the Meknès Pilot Project," said MEC's Program Manager, Jaoud Bahaji of USAID/Morocco.

The response to the Meknès Pilot Project has been positive, but challenging owing to existing institutional constraints. However, it has great potential for demonstrating opportunities to increase agricultural production in other regions and other countries. "The Project will help to enhance agricultural productivity and increase the quality of products offered at market. Its approach is practical, makes sense, and will allow us to link the farmers to the market," said Mr. Bahaji.

Only in its eighth month of implementation, the MEC Program is positioning itself for future success both in Meknès and in other regions. One of the main challenges that lies ahead will be to determine who has the authority over the water once it has been treated. According to Watson, there is uncertainty in the regulatory framework regarding who or what institution has the authority over the treated wastewater. Other important factors to be considered are the costs to the farmers and guidelines to determine the quality of the treated water, which will be addressed further in MEC's overall strategy.



Photo Credit: Said Quattari

CULTIVATING SUCCESS: Intensive vegetable plots that have been cultivated by plastic mulching techniques and drip irrigation.

By working with technical experts and sharing knowledge from other USAID programs in Egypt, Jordan, and Lebanon on best practices and lessons learned, the Meknès Pilot Project is well positioned for success. "The Pilot Project will not use a cut and paste approach, but will utilize new strategies, while sharing information on common issues regarding water treatment methods," said Mr. Bahaji. With water scarcity worsening and competition over water resources increasing, reusing treated wastewater is an increasingly attractive option to other cities in Morocco and other countries looking to maintain or expand existing water allocations for agricultural use. The Meknès Pilot Project will continue to address the challenges facing local government and farming communities regarding the uses of treated wastewater and will serve as a pilot project to be replicated elsewhere. "The Meknès Pilot Project will allow the MEC Program to experiment with various approaches to best determine what will be most successful for current and future applications. Our success is important to the region, as treated wastewater is an increasingly valuable resource," said Watson. *S. Gudnitz*

For more information on the Meknes Pilot Project, visit:

http://pdf.usaid.gov/pdf_docs/PNADPI65.pdf



News from the Field

Innovative Middle East Agriculture Project Seeks Holistic Solutions



Photo Credit: Helen Braddy

WATER FOR LIVESTOCK: A shepherd tends his flock of sheep in the Al Ghab Valley, a rainfed area of Syria.

For centuries, families raising crops and livestock in the water-scarce Middle East have struggled to eke out a living. In recent decades, however, that situation has become even more dire, with rising human populations, increasing water demand for both human and industrial use, drought, climate change, expanding deserts, soil depletion, and deteriorating water quality.

Taking on that broad range of challenges is the focus of a recently launched USAID project, the Middle East Water and Livelihoods Initiative (WLI).

The WLI works in seven territories: Egypt, Iraq, Jordan, Lebanon, Syria, the West Bank and Gaza, and Yemen. The project seeks to improve rural livelihoods through better, sustainable land and water management. Those concerns are closely linked in the Middle East. Of the region's poor, some 60% live in rural areas. About three-quarters of the region's water supply goes for agricultural uses. Nevertheless, in some of the countries the amount of water available per person has fallen to as little as 170 cubic meters per year. That is far below the generally accepted international definition for "scarcity," of 1,000 cubic meters per year.

The WLI project team is being led by the International Center for Agricultural Research in the Dry Areas (ICARDA), a major research institute based in the city of Aleppo, Syria. "ICARDA plays a crucial role in terms of the long-standing relationships it has in the Middle East," said USAID staff member Scott Christiansen, who has worked for ICARDA in the past. Now based in Washington, D.C., Christiansen oversees WLI as part of his duties with the USAID Office of Technical Support of the Asia and Middle East Bureaus.

Also working with ICARDA on WLI are the national agricultural research and extension systems of the participating countries, three leading regional universities in the Middle East, and five U.S. universities that have well-respected degree programs in agriculture.

According to Tareq Bremer, an ICARDA grants management officer for WLI, a key element of the WLI design is its community-based, participatory methodology. For example, project scientists have been working with farmers to identify research topics for the specialists to explore, and WLI staff have been asking the farmers for practical, realistic advice that could



be shared with other Middle East countries. “It’s a bottom-up approach,” comments Fadi Karam, the WLI project coordinator for ICARDA. “It links together scientific research, the extension services, and the farmers.”

Mr. Bremer indicated that WLI also takes a much broader perspective on water scarcity than has been true for previous work in the Middle East. For example, many earlier water projects failed to incorporate the livelihoods issue. WLI considers multiple levels, including the field, farm, watershed, and basin. The project takes into account the linkages and interactions among people, resources, and the environment. WLI also considers integrated approaches to increasing both land productivity and water productivity, a strategy known as “more crop per drop.”

Since the WLI’s launch in the fall of 2009, a key focus has been the project’s education and training components. A June 2010 workshop, for instance, explored ways to improve graduate-level university training in agriculture in the seven participating countries. The new training will focus on agriculture, water, and related areas as well teaching methodologies. Among the various technical concerns that WLI participants have identified are saline soils, improved, water-saving irrigation methods, and reusing waste water. Other training will help Middle East university instructors to broaden their teaching skills, such as by learning to use online distance education technology.

Another concern for the Middle East universities and extension services will be to include more women in the training for farmers. “Often because of cultural concerns,” said Sandra Russo, Director of Program Development of the International Center at the University of Florida, “that hasn’t been done much before in the Middle East. For example, you can call

Photo Credit: ICARDA



IRRIGATION IN EGYPT: Participants in a WLI planning workshop examine a traditional surface irrigation system in the Nile Delta.

a meeting but only men will attend. The men may or may not share the new information they’ve learned with their wives.”

In seeking support for WLI from within USAID, Scott Christiansen emphasized that WLI fits into the major foreign policy initiatives of President Obama and the U.S. Congress, such as the Senator Paul Simon Water for the

Poor Act and Feed the Future. It also aligns with plans that USAID and the U.S. State Department have to establish a new scientific center for excellence on water in the Middle East.

“Over the next 10 years,” said Christiansen, “there is a need to build a new generation of water and land management specialists in the Middle East who can better link new research findings with farmers’ adaptation and utilization of that new knowledge.”

Achieving that vision could go a long way toward resolving the issue of scarce water supplies for agriculture in the Middle East. *B. Black*

For more information, visit:

Middle East Water and Livelihoods Initiative (WLI) website:

<http://www.icarda.org/WLI>

Links to a collection of Web resources on agriculture, the environment, and water:

<http://www.scidev.net/en/agriculture-and-environment/water/>

Book, Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture, published by Earthscan and the International Water Management

Institute: <http://www.iwmi.cgiar.org/assessment/>



Coming Soon

USAID's Safeguarding the World's Water 2010 Report on USAID FY 2009 Water Sector Activities



Globally, almost 900 million people do not have access to improved sources of drinking water, and nearly three times that many, 2.6 billion, do not have access to improved sanitation. These staggering statistics drive USAID's ongoing efforts to assist other countries by providing their populations with safe and affordable water supplies as part of an

integrated approach to water resources management. Global demand for water is doubling every 20 years, and Population Action International estimates that more than an estimated 2.75-3.25 billion people will live in water-scarce or water-stressed regions by 2025.

"Safeguarding the World's Water: 2010 Report on USAID Water Sector Activities" describes the progress USAID has made in all water sector program areas, including water supply, sanitation and hygiene, water resources management, water productivity, and disaster risk reduction. Substantial progress has been made in the global water supply and sanitation access sector during FY 2009 by providing improved or first-time access to improved water supply for 6.4 million people. Beneficiaries that received access to improved or first-time access to improved sanitation reached nearly 3.4 million.

A central theme to all of the U.S. Agency for International Development's water management programs is the promotion of "water security and sustainability with equity". This includes protecting all current sources of water, ensuring that there is enough of a viable supply to meet current and future demands,

and increasing people's access to safe and affordable water for health and well-being.

USAID does this through the design and implementation of programs that address specific programmatic areas, including water supply, sanitation, and hygiene (WSSH); water resources management (WRM); water productivity (WP); global climate change adaptation (CCA); water productivity (WP) and food security (FS); and water-related disaster risk reduction (DRR) in five regions around the world.

FY 2009 USAID investments in water sector programs reached a total of \$619 million in all aspects of the water sector, which experienced a 26 percent increase from FY 2008 investments of \$490 million. Overall, the majority of funding (89 percent) was dispersed fairly evenly among the Sub-Saharan Africa, Asia, and Middle East regions, with the remainder going to Latin America and the Caribbean, Europe and Eurasia, and Central Programs. Three of the largest programs that dominated the rest of water sector portfolio funding, were investments in WSSH (\$482.1 million); WRM (\$41.2 million); and WP (\$45.3 million).

These findings reflect the continuing urgency for USAID and other U.S. government agencies to keep all programs in the WSSH, WRM, and WP portfolio at the forefront of the water sector. Without these significant investments, global development goals in child mortality, primary education, disease reduction, environmental sustainability, and poverty reduction will not be achieved. The report is expected to be issued within the next few weeks.

Source:

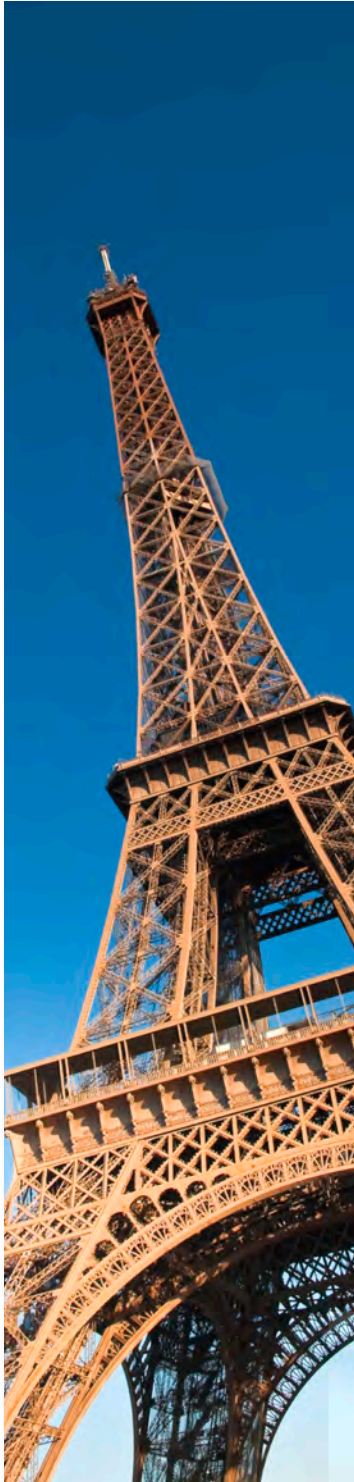
Safeguarding the World's Water:
2010 Report on USAID FY 2009 Water Sector Activities

Link: www.usaid.gov/our_work/cross-cutting_programs/water

Release date: Expected in late calendar year 2010



Recent & Upcoming Events



Transboundary Aquifers: Challenges and New Directions December 6-8, 2010 | UNESCO Headquarters, Paris

The ISARM (Internationally Shared Aquifer Resources Management) Initiative, a UNESCO and IAH (International Association of Hydrogeologists) led multi-agency effort, will bring together world experts in the fields of law and water sciences to discuss scientific, socio-economic, legal, institutional, and environmental issues related to the management of transboundary aquifers, in both developed and developing countries.

<http://www.isarm.net/publications/342>

National Council for Science and the Environment (NCSE) 11th National Conference on Science, Policy and the Environment: Our Changing Oceans January 19-21, 2011 | Washington, DC

The National Council for Science and the Environment (NCSE) 11th National Conference on Science, Policy, and the Environment: Our Changing Oceans will provide a forum to address the crisis facing our oceans, present new knowledge and innovative tools to effectively face this challenge, and discuss the policy and governance needed to restore and protect the oceans.

<http://ncseonline.org/conference/Oceans/>

Climate Change Impacts, Adaptation and Mitigation in the Western Indian Ocean (WIO) Region: Solutions to the Crisis March 21 - 23, 2011 | Grand Baie, Mauritius

The Western Indian Ocean Marine Science Association (WIOMSA), a regional professional, non-governmental, non-profit, membership organization dedicated to promoting the educational, scientific and technological development of all aspects of marine sciences throughout the region of the Western Indian Ocean (Somalia, Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar, Seychelles, Mauritius, Reunion (France)), is holding a conference on climate change impacts, adaptation, and mitigation in the WIO region.

<http://www.wiomsa.org/?id=696&cid=3599>

6th IWA Specialist Conference on Efficient Use and Management of Water with a Focus on Water Demand Management: Challenges & Opportunities March 29 - April 2, 2011 | Dead Sea, Jordan

USAID and the International Water Association (IWA), in cooperation with Jordan's Ministry of Water and Irrigation, will provide a forum that will present global experiences in water demand management and water efficiency. The agenda will include topics such as efficiency technologies, best management practices, policies and regulations, planning, public participation, climate change and drought adaptation, alternative water resources, and the water/energy nexus.

<http://www.efficient2011.com>