CRSP COLLABORATIVE RESEARCH SUPPORT PROGRAMS

CRSP DIGEST

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AquaFish CRSP Strengthens Fish Value Chains for Men and Women Fish Farmers

Declines in the wild fish catches in Kenya's Lake Victoria have spurred the expansion of fish farming in the region. The current AquaFish CRSP has built on work conducted under the former Aquaculture CRSP (1997-2007) to expand fish farming, especially the production of catfish fingerlings that are sold as baitfish for the large Nile Perch fishing industry on the lake. The project started in 2008 with sixty men and women farmers, and by the end of 2009, 100 farmers had been trained resulting in increased fingerling production levels able to support 20 baitfish traders along the lake shores.

VICTOR MOTARI /AQUAFISH CRSP

On the outskirts of Lake Victoria, women typically engage in fish trading and processing. A Purdue University-led AquaFish project is using SMS technology to increase women's participation in the tilapia value chain.

In 2010, the CRSP received an Associate Award to continue related work on the fish value chain in Kenya (as well as two additional Feed the Future countries of Ghana and Tanzania), supplementing its ongoing work under its core award. Activities include conducting workshops with producers, demonstrating "best practice" techniques in fishpond management and providing follow-up extension and advisory services, and also promoting farmer-to-farmer extension.

Kenyan women, who previously engaged in fish trading and processing are now entering the fish value chain as fish farmers. A Purdue University investigation under the AquaFish CRSP teamed with the Women in Fishing Industry Project (WIFIP) (www.wifip.org/wifip/) to increase women's participation into the catfish and tilapia value chains. WIFIP promotes aquaculture as a pathway for

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Peanut CRSP Connects Health and Agriculture Communities through Mycotoxin Research

Staple food crops, particularly those consumed in regions of Sub-Saharan Africa, are often contaminated with mycotoxins which increase people's susceptibility to HIV and subsequent infections, lead to certain types of cancer, and children's malnourishment and stunting.

Peanut CRSP research has established a strong correlation between mycotoxin (aflatoxin and fumonisin) contaminated food and HIV and with poor nutrition. The CRSP is also at the forefront of developing immediate interventions that will reduce the effects of these toxins. These interventions could prevent up to 1 million HIV infections in Africa, reduce rates of cancer, and improve the nutritional status of children. In March 2012, Peanut CRSP Director Tim Williams facilitated a dialogue between the agriculture, health, and nutrition communities on the effects of mycotoxins, highlighting how their mutual goals can be addressed through continued research and Peanut CRSP recommended interventions. Dr. Williams spoke about toxin-binding food additives as an immediate and inexpensive way to protect people against the harmful effects of aflatoxin and fumonisin contaminated food.

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USAID FROM THE AMERICAN PEOPLE

Transforming Grain-Legume Systems to Enhance Nutrition and Livelihoods

In February 2012, the Dry Grain Pulses (Pulse) CRSP cohosted with the Rwanda Agriculture Board a five day global pulse research meeting attended by approximately 100 grain legume scientists from over 25 countries. In addition to Pulse CRSP U.S. and host country scientists representing many diverse disciplines (e.g., genomics, breeding, pathology, IPM, nutrition, food chemistry, economics and marketing), researchers from numerous collaborating institutions also attended including from several international agriculture research centers (CIAT, IITA and ICRISAT), the McKnight Foundation, N2-Africa, and national agriculture research systems from eastern Africa.

At the meeting researchers shared advances in increasing grain legume productivity, reducing vulnerability to biotic and abiotic stresses, transforming multi-functional smallholder legume-based farming systems, improving the nutritional quality of diets and the nutritional status of children, and enhancing the livelihoods of stakeholders of pulse value-chains, especially women. These are priorities aligned with U.S. Government's Feed the Future Global Food Security Research Strategy.

COURTESY OF DRY GRAIN PULSES CRSP

The Pulse meeting highlighted many of the CRSP's research advances that are aligned with FTF strategies.

A highlight of the conference was a visit by Rwanda's Minister of Agriculture and Animal Resources, the Honorable Dr. Agnes Kalibata. She stated that Rwanda leads the world in per capita consumption of common beans. Improved varieties of climbing beans have enabled smallholder farmers to achieve grain yields of over 5,000 kilos per hectare.

For the past five years, the Pulse CRSP has supported fourteen collaborative research projects in nineteen countries in Africa and Central America. Meeting participants learned of important research achievements including gains in genetic resistance to root rots in common bean, use of molecular markers for improving drought tolerance in cowpea, effectiveness of biologicals in controlling pod-sucking insects in cowpeas, and the explanation of the role of bean constituents in improving gut health and nutrient absorption. In the session on seed systems, the sustainability attributes of community based seed multiplication were discussed and the effectiveness of the "community seed banks" model being promoted by a USAID supported project through the Pulse CRSP in Nicaragua, Honduras, and Guatemala.

Four Pulse CRSP scientists were honored with the Technical Management Administrative Council Award for Meritorious Professional Achievement. This award recognizes the lifelong research achievements of scientists which resulted in technologies and policies that benefitted smallholder farmers in developing countries. The award was given to Dr. James Scott Beaver, Universidad de Puerto Rico; Dr. Juan Carlos Rosas Sotomayor, Escuela Agicola Panamericana- Zamorano, Honduras; Dr. Ndiaga Cisse, Institut Senegalais de Recherches Agricoles; and Dr. Richard Bernsten, Michigan State University.

For more information on the meeting including copies of the presentations and poster abstracts visit the Pulse CRSP website at pulsecrsp.msu.edu.

BASIS AMA CRSP Awarded to UC Davis

Dr. Michael Carter and the University of California, Davis have been awarded US$25 million for the five-year BASIS Assets and Market Access CRSP. The CRSP Management Entity, formerly located at the University of Wisconsin-Madison will move to the University of California, Davis where Dr. Carter is now a professor of agricultural and resource economics. The program will cooperate with the I-4 Index Insurance Innovation Initiative also directed by Carter and located at UC Davis.

Peanut CRSP Looks to the Future with Strategic Research Agenda

The Peanut CRSP held a strategic research and planning meeting December 11-15, 2011. Over seventy Peanut CRSP faculty and student researchers and staff members, representing twelve countries outside the U.S., came together in St. Julian's, Malta to discuss CRSP accomplishments and plan future research directions and applications. The CRSP is awaiting a decision from USAID on an opportunity to submit a proposal for a five-year program for 2012-2017.

Tim Williams, Director of the Peanut CRSP, opened the meeting, noting that the CRSP was coming to the end of its first five years, providing an excellent time to take stock of the current state of peanut research and to define new problems to solve. Peanuts are an important crop for many developing countries. The CRSP has supported three critical parts of the peanut value chain: production, processing, and marketing. Women are the predominant actors in these nodes of the chain and benefit significantly from the work of the CRSP.

John Cherry, Team Leader of the Peanut CRSP External Evaluation Panel (EEP) and former Director, USDA/ARS Eastern Regional Research Center, reported that the EEP found the CRSP research to be high quality, tackling important issues for farmers around the world. After conducting a desktop review of eight CRSP projects the EEP found the CRSP had achieved its stated objectives, having important impacts on national programs, e.g., developing a peanut industry incubator model in Asia that has now been replicated in Africa. The CRSP was also found to have an excellent record of scientific publications.

Over the course of the meetings, the participants explored the themes of:

- Health, Socioeconomics, and Development
- Developing Country Perspectives
- Feed the Future, USAID, and Partner Perspectives
- The Global State of Affairs in Mycotoxin Research
- Gender, Technology, and Innovation in Mycotoxin Management

After setting the stage with the reports on these topics, the group divided into working groups to identify research topics and application opportunities in the peanut value chain. In addition to the formal meetings, there were side events for networking and meetings of the evaluation team, the Peanut CRSP Board, and among the CRSP, USAID, and BIFAD.

Also attending the conference were Jennifer Vern Long, CRSP activity manager at USAID, Jo Luck, member of the Board for International Food and Agricultural Development (BIFAD) and former President of Heifer International, Prem Warrior, of the Bill and Melinda Gate Foundation, and Victor Nwosu of M&M Mars. Members of two different CRSP evaluation teams were also present.

For more information see peanutcrsp.org/MALTA2011/

Over 70 participants attended the Peanut CRSP strategic research conference. Pictured, left bottom, Carolyn Fonseca and Greg MacDonald; center, Jo Luck; top, Handy Williamson and Boris Bravo-Ureta and top inset, Tim Williams, Peanut CRSP Director leads a working group discussion. Photos courtesy of the Peanut CRSP.

Committed to Gender Integration:

CRSP Experiences in Working with Men and Women from Lab to Field

In February 2012, USAID announced the launch of the Women's Empowerment in Agriculture Index (WEAI), the first ever measurement intended to capture women's empowerment and inclusion in the agriculture sector. The release of the WEAI, along with renewed commitments from USAID and the Department of State to uphold gender equality, reminds us of the importance of women's contributions to agriculture and food security.

For the CRSPs, attention to gender issues in agricultural research and capacity building has long been a feature of their research programs. They have directed research and interventions towards increasing the equitable participation of men and women in agricultural development at all levels.

The commitment to gender equality is obvious in the increasing number of women in degree training and capacity building programs. Between 1984 and 2008, 36.8 percent of long-term trainees in aquaculture and fisheries CRSPs have been women. More recently, women made up 48 percent of students in degree programs, and between 2008 and 2010, 50 percent of students completing programs were women. From 2007 to 2011, degree programs supported by INTSORMIL increased women's participation from 37.7 percent to 50 percent. Women's participation in IPM degree programs climbed from 35.1 percent to 53.9 percent over the same time frame. For SANREM and Dry Grain Pulses, women's participation averaged roughly 50 percent and 46 percent respectively. Today, an increasing number of women are Principal Investigators of CRSP research and two CRSPs are led by women: the Horticulture CRSP, led by Dr. Elizabeth Mitcham, and the AquaFish CRSP, led by Dr. Hillary Egna.

However the story does not end there. Recognizing women's significant role in the agriculture sector and the negative impacts of gender inequalities on agriculture production and nutrition, CRSP research examines the problems faced by women as producers, processors, and traders. They involve women through participatory research activities and work with women's groups and men's groups to achieve development objectives. In recent years, a number of CRSPs have adopted more systematic approaches to improving the gender analysis capacity of their research programs.

CRSP investments in aquaculture and fisheries have actively sought to ensure the reach of activities extend to women. Both men and women are active in aquaculture and fisheries in different ways. Men generally construct ponds, manage farms, own the boats and do the fishing. Women on the other hand are largely involved in post-harvest and processing activities in both aquaculture and fisheries. To ensure that both men's and women's differentiated roles receive adequate attention, the AquaFish CRSP, led by Dr. Hillary Egna, instituted a gender integration strategy mandating that all core projects have at least one gender-focused intervention. As a result, researchers have examined opportunities for women to improve household welfare through seaweed processing in Indonesia and the Philippines; the potential for women to benefit from an expansion of tilapia and indigenous fish in Guyana; strategies for improving household nutrition and income through diversification of the carp polyculture system in Nepal.

NELSON AGBO /AQUAFISH CRSP

AquaFish CRSP graduate students, Ethel Tetteh (left) and Peter Akpaglo (right), working with the Purdue project in Ghana, preparing feed for indigenous species. The CRSPs have increased participation of women in degree training and capacity building programs, consistently averaging between 46 to 50 percent women.

ARCHILEO KAAYA/PEANUT CRSP

Dr. Maria Elisa Christie meets with women in Uganda in a focus group discussion of peanut food preparation techniques. Under Christie's leadership, Peanut, SANREM and IPM CRSPs use a common gender analysis framework.

Under the leadership of Dr. Maria Elisa Christie, Program Director, Office of International Research, Education, and Development at Virginia Tech, the Peanut, SANREM, and IPM CRSPs are integrating gender into research in ways that are changing both the ways research is being conducted and the outcomes for men and women. The three CRSPs are using a common gender analysis framework, the Gender Dimensions Framework (GDF), developed by Cultural Practice LLC under USAID contracts. The framework offers a structured way of identifying and analyzing gender relations in the household, the community, and other institutions to uncover disparities that limit agricultural outcomes and women's empowerment. Although each of these CRSPs is using the GDF, their experiences in integrating gender into research differ. Some examples are described below:

The Gender Global Theme in the IPM CRSP has three objectives: 1). Increasing the participation of and benefits of research to women; 2). Enhancing the capacity of research teams to integrate gender; and 3). Generating knowledge about gender issues in IPM. As a result, this CRSP has managed to successfully create opportunities for women to assume different roles in the research process. An IPM gender team was created that includes a regional IPM Gender Coordinator and a Country Gender Point Person wherever the CRSP is active. Seven regional workshops have trained a total of 63 men and 90 women on gender methodologies, improving the capacity of Principal Investigators and their research teams to identify and address gender disparities in research.

The SANREM CRSP's approach integrates gender into its participatory Conservation Agricultural Production Systems (CAPS) with a focus on men's and women's knowledge of soil and differences in their access to land and animals. Focus groups, mapping exercises, and participant observation by a student are used to capture differences in how men and women use resources. Household interviews are conducted with both men and women.

Finally, the Peanut CRSP uses a model of working through leading women's organizations to address aflatoxins in peanut production, processing, and marketing. Working with the National Association of Women's Organizations of Uganda (NAWOU), researchers are documenting cooking practices involving peanuts and developing information, education and communication materials to raise awareness on how to reduce the presence of aflatoxins. The research highlighted three key elements of the Feed the Future initiative: agriculture, health, and nutrition. By focusing on gender aspects of production and processing, a greater appreciation of women's role in the prevention of aflatoxin spread emerged. The partnership with NAWOU provided an opportunity to work with a larger network of women's groups and deepen the contact of researchers with women and men in rural areas.

NAWOU Secretary General, Peace Kyamureku sums up the importance of the partnership explaining, "For NAWOU, the Peanut CRSP project was a promotion of grassroots activism as the majority of our membership works in groups. Encouraging and building confidence among such groups can lead to the survival of culture, traditional norms, fighting food insecurity, improving nutritional status, strengthening livelihoods, building capacity and empowerment."

For more information see: aquafishcrsp.oregonstate.edu and Maria Elisa Christie's presentation at the Horticulture CRSP Annual Meeting in Bangkok, Thailand, "Integrating gender and increasing women's participation from the Peanut, SANREM, and IPM CRSPs" (2012).

Researchers Highlight Achievements of IPM for Food Security

The home of the blues became home for the IPM CRSP in March 2012 when its annual technical committee meeting on March 26 prefaced the Seventh International IPM Symposium in Memphis, March 27–29.

The IPM CRSP promotes pest management methods that reduce damage caused by pests without harming the environment. The program, housed at Virginia Tech, works in 17 countries — 13 of which are Feed the Future countries — covering one-third of the world's population, or 2.2 billion people. The work discussed in this small Memphis conference room reaches almost half of the world's poor.

Along with regional and global program leaders, two BIFAD board members, Chairman Brady Deaton and the Honorable Marty McVey, as well as John Bowman (USAID), AOR for the IPM CRSP, were in attendance. The annual meeting provided the group with a glimpse of IPM CRSP activities worldwide through its eleven regional and global theme programs.

Chaired by George Norton (Virginia Tech) principal investigator (PI) of the program's Impact Assessment Global Theme, the meeting showcased program achievements and presenters highlighted the forthcoming year's work.

Paul Backman (Penn State U), co-PI of the Latin America and the Caribbean program, shared the progress made in a plant virus identification project in Guatemala that helps overcome vegetable production constraints due to plant viruses. Maria Elisa Christie (Virginia Tech), PI of the Gender Global Theme,

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MERLE SHEPARD/ IPM CRSP

The IPM CRSP has been helping cocoa farmers in Indonesia protect against the cocoa pod borer moth. By using this biodegradable bag, farmers prevent the borers from affecting their crops. Within four months, the sleeves degrade to carbon dioxide and water, leaving no residue.

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Connecting Health and Agriculture Communities through Mycotoxin Research

While other interventions against mycotoxins carried out during production, postharvest storage, and processing and through enforcement of standards are preferable they are more difficult to implement. In contrast, food additives, like bentonite, are safe for human consumption, cost less than two cents per week for adults, are effective against both aflatoxin and fumonisin, and are easily implemented. Since these toxins are anti-nutritional the application of these food additives effectively increases the nutritional value of the food and improves the immunity and health of the beneficiaries.

Speaking to the health and agriculture communities at USAID, Williams recommended that more research be done on the relationship between mycotoxins and HIV transmission as well as the potential benefits of reducing aflatoxin exposure. In line with the push by the U.S. President's Emergency Plan for AID's Relief (PEPFAR) to focus on preventing HIV/AIDS transmission in addition to existing activities focused on treatment, Williams recommended that PEPFAR promote mycotoxin management in its activities, increase public awareness through campaigns, and based on the Peanut CRSP's intervention recommendation, provide toxin-minimized foods to HIV+ people and those at high risk of contracting the infection to potentially reduce the rate of HIV progression and transmission.

While engaging with health and nutrition experts and USAID's Bureau for Food Security Williams stressed the need for continued research on this topic to address concerns about children's and adult's nutrition and the livelihoods of smallholder farmers and rural communities in Sub-Saharan Africa and other impacted regions. Ultimately, the expansion of current research and collaboration across sectors has the potential to address USAID's goals for food security, HIV, health and nutrition communities by making an impact on agricultural production and the health and livelihoods of people in developing countries.

For more information on the Peanut CRSP, visit peanutcrsp.org.

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IPM Highlights

presented findings from gender workshops held in every IPM CRSP region. The IPM CRSP's inclusion of gender in its research aligns with USAID's commitment to gender equity. Christie also emphasized the importance of capacity building, noting that students work on gender in five of the six IPM CRSP regions. Sally Miller (Ohio State), PI of the International Plant Diagnostic Network Global Theme, explained the importance of diagnostic training from the market to the institutional level. Her program works on standard operating procedures for a website to help scientists in developing countries improve their plant virus diagnostic skills. Attendees also discussed the development of IPM packages (holistically developed linked practices) for crops with an eye towards regionalizing and globalizing technologies.

The IPM CRSP was well-represented during the three-day symposium, the largest international event for specialists in IPM, with eighty-three IPM CRSP-affiliated researchers representing nearly every IPM CRSP country. Six sessions specifically focused on IPM CRSP work. A complete list of IPM CRSP authors, presentations, posters, and sessions can be found on the program's website, www.ow.ly/asTRZ.

Submitted by Melissa Smith, Writer and Editor for the Office of International Research, Education, and Development at Virginia Tech in Blacksburg, VA. For more information on the IPM CRSP, see www.oired.vt.edu/ipmcrsp/.

Harvey J. Hortik Remembered

Dr. Harvey Joseph Hortik, former Division Chief at USAID, died February 17, 2012. Born on May 28, 1935, Harvey grew up on a family farm in Roselle, Illinois. He was graduated from University of Illinois in 1957 (B.S., Horticulture), 1959 (M.S.), and 1962 (Ph.D). He served in the U.S. Army from 1957 to 1962. Dr. Hortik was also the Director of Agricultural Research at Libby, McNeil & Libby/Nestle Enterprises in Janesville, Wisconsin.

He came to USAID in 1984. Harvey believed that science could transform agriculture in developing countries. He worked hard to get the best U.S. scientists from both the public and private sectors involved in USAID's programs, involving them in the Collaborative Research Support Programs (CRSPs). The first transgenic beans were developed by the Bean/Cowpea CRSP. Dr. Doug Maxwell, working with Dr. Russell at Agracetus Inc., produced beans with the gus gene (blue seed). Harvey realized that this new technology would be enormously important to farmers world-wide.

In Senegal, the newly identified drought-tolerant cowpea cultivars coupled with good agronomic practices doubled yields. Despite drought, CRSP technologies generated US$35 million worth of increased cowpea production showing a rate of return of 63% from 1985-87 and also improved household food security.

Dr. Hortik supported adding Purdue University's Dr. Larry Murdock's seed storage project to the Bean/Cowpea CRSP in 1986. The solar heater it developed had potential to dramatically reduce losses from the cowpea weevil. In 2007 Murdock received an US$11.4 million award from the Bill and Melinda Gates Foundation to expand his work on cowpea storage technologies in ten African countries. USAID Administrator Dr. Rajiv Shah, then Director of Agricultural Development for BGMF said this low-cost and environmentally-friendly technology would "reach more than 3 million households with information and tools to prevent postharvest losses" increasing farmer incomes and improve their lives.

Dr. Hortik also insisted that the CRSP programs help U.S. agriculture. New bean and cowpea cultivars that incorporated germplasm from developing countries were released by CRSP scientists in Michigan (beans) and California (cowpeas), increasing yields by 20 percent in Michigan.

Harvey supported degree training in the U.S. as one of USAID's most important contributions to development, especially linking students with the Consultative Group of International Agricultural Research Centers.

In retirement, Harvey was an active gardener, woodworker, and Chicago Cubs fan. He was a devoted grandfather to his son Dale's three daughters and his daughter Marcia's son. He was married to Janet Segesman Hortik for 52 years.

Submitted by Russ Freed, currently Associate Chair and Professor, International Agronomist Crop and Soil Sciences Department at Michigan State University, Russ worked with the Bean/Cowpea CRSP while Harvey was its project officer at USAID. He wrote "I really enjoyed working with Harvey 1986-96 when I was Deputy Director of the Bean/Cowpea CRSP and then in DC while on a sabbatical. Harvey was a colleague and friend and I valued his judgment and his friendship."

Collaborative Research Support Programs (CRSPs)

Aquaculture and Fisheries (AquaFish)
Oregon State University, Management Entity
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aquafishcrsp.oregonstate.edu

BASIS Assets and Market Access (BASIS/AMA)
University of California, Davis, Management Entity
Dr. Michael Carter, Director
basis.ucdavis.edu

Dry Grain Pulses (Pulse)
Michigan State University, Management Office
Dr. Irvin E. Widders, Director
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Global Nutrition
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Horticulture (Hort)
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Integrated Pest Management (IPM)
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Sorghum, Millet and Other Grains (INTSORMIL)
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www.crsps.net

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Strengthening Fish Value Chains

increasing household income among women fish traders, and has assisted in training local women in fish pond construction and catfish breeding. One component of the marketing support activity is to connect farmers to the Farmed Fish Marketing Information System (FFMIS) through mobile technology as part of a larger set of value chain and cost-benefit analyses on the fish value chain. By gaining access to the FFMIS through short message service (SMS) mobile phone technology fish farmers are able to target their supply to live market conditions meeting consumer preferences about freshness, quality, and taste. Better targeting helps fish farmers to increase their incomes.

Drawing on interviews conducted with key stakeholders at workshops for women fish traders and established fish farmers the AquaFish CRSP assessed the key constraints faced by women in the tilapia and catfish value chains. The CRSP found that women comprise a majority of the fish marketers, but have been increasingly displaced from fish processing by men workers. By producing and selling fingerlings either as baitfish for the large Nile perch fishing industry in Lake Victoria or to other fish farmers, women can increase their income and overall food security. Linking women to market information systems is a key component of moving women into fish farming, in addition to increasing their access to credit and savings and capacity through business management and development training.

These mobile-phone based market information systems provide people along the value chain with critical information on species, market prices, producers, and projected harvest dates helping them plan their activities, gain a competitive edge, and ultimately increase their productivity, income, and food security. For women, ICT applications and services bypass some of the time and mobility constraints typical of farm to market links in developing countries.

For more information, see aquafishcrsp.oregonstate.edu. To view an AquaFish CRSP video on the baitfish project, visit the CRSP Digest Vimeo Channel at www.vimeo.com/CRSPDigest/.

The CRSP Digest Project is supported by individual CRSPs as a joint knowledge management activity. Implemented by Cultural Practice LLC, the Digest Project compiles, synthesizes, and disseminates data about CRSP activities and achievements to stakeholders such as development practitioners, USAID staff, students, researchers, and others. It organizes outreach events to circulate research findings among the agricultural research and development community. For more information visit www.crsps.net Check the website for updates or sign up to receive news via the email (crsps@crsps.net), Twitter, and Facebook.