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FISCAL YEAR 2008 TITLE XII REPORT TO CONGRESS



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This report is submitted to Congress pursuant to Section 300 of the Foreign Assistance Act of 1961, as amended by the Famine Prevention and Freedom from Hunger Improvement Act of 2000.

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FOREWORD



Dr. Gebisa Ejeta, Professor of Agronomy at Purdue University, is the recipient of the 2009 World Food Prize. This honor is bestowed on him for his concerted effort in the development of drought and parasitic weed resistant varieties of sorghum. These new varieties of sorghum yield three to four times more than local varieties. Since sorghum is a widely grown staple crop in East and West Africa, Dr. Ejeta's effort has made the food supply more secure for hundreds of millions of people in sub-Saharan Africa.

Dr. Ejeta is being honored with this prestigious award principally for work funded by the USAID-supported Sorghum, Millet and Other Grains (SMOG) Collaborative Research Support Program and its predecessor programs that have been implemented by the University of Nebraska. He is a member of the Science Council of the USAID-supported Consultative Group for International Agricultural Research (CGIAR). The achievements of the SMOG Collaborative Research Support Program and the CGIAR—both Title XII programs—are described in this report.

Title XII Report to Congress Fiscal Year 2008

EXECUTIVE SUMMARY

Between March 2007 and March 2008, global food prices increased on average by 43 percent, causing hardship to the world's poorest and pushing millions of people further into poverty. By June of this year, the UN Food and Agriculture Organization (FAO) estimated that a record 1.02 billion people—more than 1 out of every 7 people—are now hungry worldwide. In most developing countries, low agricultural productivity and the inability to produce enough food, along with poverty and the inability to afford food, are the primary causes of food insecurity. Moreover, even where food is available and accessible, undernutrition can erode people's health and productivity. In the case of young children, it can lead to irreversible physical and cognitive losses. Addressing hunger and ensuring long-term food security will require improving agricultural productivity, increasing the poor's ability to purchase food and addressing the silent dimension of hunger—undernutrition.

The United States has renewed its commitment to support a global effort to halve poverty and hunger by 2015. Under the leadership of the Secretary of State, a broad inter-agency team is developing a government-wide strategy to address hunger and poverty in food-insecure countries, using agriculture as the primary driver. The strategy will promote host country ownership and coordination with other donors, multi-lateral organizations, civil society and the private sector in the design and implementation of country-led programs. Areas of focus are expected to include:

1. Increasing agricultural productivity, including sound natural resources management and adaptation to climate change;
2. Linking small producers to markets and encouraging private sector growth;
3. Increasing agricultural trade;
4. Improving nutrition;
5. Ensuring equitable opportunity for women;
6. Engaging underserved populations, particularly the very poor, in rural economic growth.

USAID will work with a variety of stakeholders and partners, including US universities, to mobilize the knowledge, efforts and resources necessary to pull millions of people out of poverty and hunger. University-based programming under Title XII provides USAID with analytical resources for sound policy recommendations and evidence-based programming in support of the food security strategy looking forward.

Title XII programs will also build human and institutional capacity to equip countries with the knowledge and tools to drive their own development. In 2008, university partners made valuable contributions to agricultural research generating appropriate technologies and agronomic practices to improve the productivity of small farmers in developing countries and help improve their access to markets. Such innovations resulted in increased farmer incomes, reduced vulnerability, and improved resource conservation. Agricultural research by Title XII universities expanded the development community's understanding of the constraints to agricultural markets and trade, and has led to the piloting of innovative interventions to facilitate farmers' access to market information,

finance and risk management. Title XII university activities have made important contributions in improving women's access to land and other productive assets, their participation in food production systems, and their access to markets and market information.

University-based programs were used to strengthen the capacity of host country institutions to conduct analysis and research on a wide range of issues relevant to agricultural development and food security including the causes of chronic poverty, food-based nutrition, input market development, natural resource management, food safety and trade. University partners have also worked with government officials in host countries to enable them to better utilize such analysis in the formation of policies and programs.

Capacity was further enhanced at all levels by the short- and long-term training that is central to Title XII. This included a range of efforts from field training for farmer associations and extension agents in best agronomic practices, to long-term degree programs for promising young researchers from developing countries. Title XII activities promote equitable access to and participation of women in training.

Looking forward, the Administration has made clear that agriculture and food security are priority areas for foreign assistance. Within the 2010 budget presented to Congress, the President requested a doubling of the budget for agricultural development, to a total of more than \$1 billion, which will provide the foundation for the new strategy and expanded efforts to re-establish U.S. leadership in agricultural development. Title XII activities will play an important role in delivering on the ambitious goals of reducing hunger and poverty.

Over the next five years, USAID will expand agricultural research and capacity building programming under Title XII to meet the challenges of the food security agenda. Three new collaborative research support programs (CRSPs) are being planned for 2010 to support research and dissemination of adaptive technologies and innovative programming approaches in the areas of nutrition, horticulture and livestock. The latter will include addressing the impact that climate change has on livestock production systems and food security. An assessment of development constraints related to water management will be conducted in 2010, for possible program development in 2011. Expanded programming in Afghanistan and Pakistan will include applied research to improve crop productivity, reduce post-harvest losses, and control diseases. Accountability will be an important cornerstone of the emergent food security strategy. USAID will harness its university partners' capacity for rigorous impact evaluation in order to inform programming priorities and refine approaches. While some country-level evaluation efforts are already being established with university partners in 2009, USAID will seek to advance a broader impact evaluation effort to allow learning across regions, agencies and implementation partners.

Section I. INTRODUCTION

The food price crisis of last year served as a wake-up call to donors and developing countries of the need to re-invest in agriculture. Protests against high prices broke out in more than 30 countries and, in some countries, the protests turned violent. While global commodity prices have since declined, they remain high in some developing countries, and even where prices have come down, an erosion of purchasing power constrains the poor's ability to obtain food. The result is an increasing number of hungry people that is estimated at 1.02 billion (more than 1 out of every 7 people) as announced by the UN Food and Agriculture Organization (FAO) in June, 2009. Absent a substantial and sustained commitment of both public and private investment to modernize agriculture in developing countries, global malnutrition, hunger, and poverty will continue to rise.

Title XII of the Foreign Assistance Act of 1961, as amended, calls upon the United States to mobilize the capacities of U.S. land-grant and other eligible universities and their public and private sector partners to achieve the mutual goals of ensuring food security, human health, agricultural growth, trade expansion, and the wise and sustainable use of natural resources. U.S. universities are an essential partner in a comprehensive strategy to increase global food security. They have a comparative advantage in global research on problems affecting food, agriculture, forestry, fisheries, and nutrition; increasing human and institutional capacity to apply advances in agricultural and related environment sciences; agricultural and trade policy research; and extension services to support increases in productivity and market access by producers. Title XII also established the Board for International Food and Agricultural Development (BIFAD) to advise the Administrator of the U.S. Agency for International Development on any and all issues as requested.

Section 300 of the Act calls for the President to transmit an annual report to Congress that:

- (I) details the activities carried out pursuant to Title XII during the preceding fiscal year;
- (II) contains a projection of programs and activities to be conducted during the subsequent five fiscal years;
- (III) contains a summary of the activities of BIFAD established pursuant to Section 298 of Title XII; and
- (IV) may include the separate views of BIFAD with respect to any aspect of the programs conducted or proposed to be conducted under Title XII.

This report addresses each of these topics and was prepared in consultation with BIFAD as stipulated in Section 298(e) of the Act.

Fiscal Year 2008 Agriculture Funding

Title XII programs contribute to agricultural-led economic growth as well as the sustainable use of natural resources and improved nutrition. Title XII provides a broad definition of agriculture, encompassing a wide range of elements including food, feed and fiber production, forestry, wildlife, fisheries, aquaculture and floriculture. USAID interventions build agricultural productivity through research and technology development and dissemination, resource

management, agribusiness and association development, access to finance, inputs, markets and trade, and mitigating emerging threats. Programming interventions may also be directed at improving the enabling environment that facilitates private sector growth and reducing rural poverty and through community development and linkages to safety nets for the very poor.

In FY 2008, \$473.3 million was programmed in agriculture through four accounts: Development Assistance; Economic Support Fund; Assistance for Europe, Eurasia and Central Asia; and Public Law 480 Development (Table 1). Eighty-seven percent of USAID agriculture program funds were allocated to the regional bureaus and missions, with the Africa Bureau and missions receiving 45 percent of the grand total. Title XII activities are programmed primarily through USAID's Bureau for Economic Growth, Agriculture and Trade (EGAT) with additional funding from the Bureau for Democracy, Conflict and Humanitarian Assistance (DCHA), regional bureaus and missions.

Table 1. CBJ Appropriation by Account for Agriculture FY 2008 Total					
Bureau	Account				TOTAL (\$)
	Development Assistance (\$)	Economic Support Funds (\$)	Assistance for Europe, Eurasia and Central Asia (\$)	PL480 Development (\$)	
Africa	86,436	13,670	-	112,724	212,830
Asia and Near East	15,589	99,845	-	5,000	120,434
Economic Growth, Agriculture and Trade	49,830	-	-	10,000	59,830
Europe & Eurasia	-	-	29,724	-	29,724
Latin America & the Caribbean	7,434	11,191	-	28,558	47,183
Other	2,930	210	-	-	3,140
TOTAL	162,219	125,116	29,724	156,282	473,341

Source: Foreign Assistance Coordination and Tracking System (FACTS), October 1, 2009

Section II. TITLE XII ACTIVITIES AND ACHIEVEMENTS

Agricultural research contributes throughout the sector from production through processing, marketing and trade. Research and its application address the needs of stakeholders all along the agricultural value chain, including informing decisions by policy makers. Research findings can improve the effectiveness of development efforts themselves. A comprehensive effort to address the underlying causes of food security and promote sustainable solutions requires targeting the research agenda and ensuring impact across this spectrum.

Increasing Productivity

As land and water in developing countries become increasingly scarce, productivity gains will be the main source of growth in agriculture and will contribute to meeting increased demand for food and agricultural products. Significant gaps between potential and actual yields in Africa and Asia persist due to poor investment in and application of improved technologies and management practices. As Title XII research has shown, managing risk is also critical to increasing productivity of small-scale producers.

- Declining fish stocks in Mali mean demand far exceeds supply in the local markets. Two ways to increase the overall supply of aquatic products are increasing aquaculture production and managing capture fisheries sustainably. Since October 2007, the **AquaFish CRSP** has partnered with the Government of Mali to improve the productivity and income of producers in targeted areas of Mali. The collaboration will facilitate access to technologies, and build the capacity of stakeholders involved in freshwater fish farming and capture fisheries management. FY 2008 marked collaborative program planning and start-up including the selection and training of government staff.
- In Uganda, the **Fisheries Investment for Sustainable Harvest (FISH)** project has facilitated development of a commercial aquaculture industry. The project has provided investors with valuable information on production costs, quality feed, seed, and markets. As a result of project demonstration farms and support for industry collaboration, Uganda now has one of the more competitive aquaculture sectors when compared to many other African countries. FY 2008 was the final year of the FISH project. In its last year, FISH functioned very much as a national fish farmers' association and extension service. It liaised with feed mills, net manufacturers, government authorities, non-governmental organizations, and prospective donors. It greatly increased free access to reliable aquaculture information based upon proven technologies, thus removing a major bottleneck. FISH engendered trust among participating farmers who, in return, reported their fish sales and inventory to FISH. The data were then summarized and the information used to benefit the farmers by identifying markets for those with inventory ready for sale and by suggesting suppliers for those seeking to purchase seed or fish to process. Farmers often sought qualified farm managers and hatchery workers for their farms from FISH. In 2008, 30 fish farmers produced a total of 55 tons of fish with a market value of 160 million Uganda Shillings (\$80,000 USD); representing an increase of 30 tons from 2007.

- In FY 2008, USAID continued funding improvements in freshwater fisheries in Bangladesh that provide vital food and income for millions of households. Working with national and non-governmental partners, the **WorldFish Center** developed and promoted the adoption of sustainable management practices involving community management of the 12,000 open water bodies in the country. By the end of 2008, more than 90 percent of the community groups remained active and three-fourths of them reported fish catch increases averaging 30 percent.
- The **Food Security III** program evaluated empirical evidence from the Common Market for Eastern and Southern Africa (COMESA) Region on fertilizer use in Africa. Addressing the question of why farmers do not use more fertilizer, research found 1) lack of profitability, usually due to weak physical infrastructure, downward crop price risks, unavailability of improved seed, and inefficient farm management practices; 2) lack of credit to buy fertilizer; and 3) missing fertilizer markets. Yet, maize-fertilizer response rates in Zambia demonstrate that poor farmers with small landholdings receive greater returns than large farms on their fertilizer investments. Increasing fertilizer use will require increasing expenditures on market-supporting infrastructure; crop science (hybrid seed research and agronomic trials); extension services; crop marketing and regional trade; addressing the credit constraints of the poor; and targeting input subsidy programs to the poor to support continued development of the private input sector. The study is being used to inform dialogue on fertilizer policy with governments throughout the region.
- In Mozambique, the **Food Security III** program seeks to enhance national-level impact of public sector investment on agricultural productivity, rural incomes, poverty reduction, and food security. In 2008, the program worked with staff from the Mozambique national market information system (SIMA) to analyze price movements and market dynamics during the rapid increase in international food prices. This analysis informed the Mozambique Ministry of Agriculture, as well as multilateral and bilateral donors assisting Mozambique, about how best to respond to the crisis. Ground-breaking work on the first national Agriculture Public Expenditure Review provided a good opportunity to build linkages with the Ministry of Planning and the Ministry of Finance, while demonstrating how the government's resources are being used. The review provides the baseline for monitoring Mozambique's implementation and achievement of the Comprehensive African Agricultural Development Program (CAADP) targets.
- In 2008, the **Agricultural Biotechnology Support Project II (ABSPII)** completed field trials on bioengineered, insect-resistant eggplant for India. The program is now working to clear these new varieties through regulatory processes. When approved, eggplant will be the first bioengineered food crop in India. Release of the new variety is expected at the end of 2009 or early 2010. The annual benefit of Bt eggplants to farmers and consumers is predicted to be \$107.5 million. An ex-ante analysis of potential health benefits for open pollinated varieties of Bt eggplant in India are estimated to be \$4 million per year; these savings are only a fraction of the overall potential environmental and health benefits of Bt eggplant technology. Varieties for Bangladesh and the Philippines are also under development.

- **ABSPII** researchers also completed field trials on potatoes resistant to late blight fungus for India and Bangladesh. Once adopted, yields of transgenic late blight fungus potato are projected to be 25 percent higher than existing varieties. The projected value of the net benefits of adopting this potato variety over 17 years ranges from \$485 million to \$1,769 million, with additional health and environmental benefits due to reduced fungicide use. Fungus-resistant East Africa Highland Banana is being field tested in Uganda—the first confined field trial of a bioengineered crop in that country.
- Since 2007, the **Dry Grain Pulses CRSP** has successfully released 14 improved bean varieties in Latin America. These varieties combine both multiple resistance traits (for example, drought and adaptation to low fertility soils) with desired grain quality traits (large seed size and color) and yield stability. By planting these improved varieties, farmers are able to achieve good yields year after year while climatic, pest and disease stresses reduce yields by up to 90 percent in local varieties. Through concerted public sector efforts to disseminate these improved technologies, over 200,000 farmers in El Salvador, Honduras, Nicaragua, Costa Rica and Haiti now cultivate these varieties both for home consumption and for cash.
- The global breeding program of **Sorghum, Millet and Other Grains (SMOG) CRSP** developed over 30 stress-tolerant and high-yielding sorghum varieties and soil management practices that increased sorghum yield by 20 to 50 percent. The economic benefit of some of the technologies was as high as \$9.90 for every \$1.00 spent on research and development. The introduction of these technologies, a new and innovative marketing strategy, and farmer training significantly increased yields in Senegal, Mali, Niger and Burkina Faso. The combined effect of the yield and price gains on farmers' income was dramatic – as high as 278 percent in Senegal. Hybrid forage sorghum varieties developed for the Central America dairy industry increased green forage by seven metric tons per hectare and raised milk production by 21 percent over the traditional sorghum used by farmers in El Salvador.
- In 2008, the **Farmer-to-Farmer (FtF) Program** provided 589 volunteer assignments in 37 countries. Many of the volunteers are faculty from Title XII universities. One volunteer, from University of North Carolina, worked with 207 vegetable growers in the Sano Harre village in Nepal to improve tomato farming technology. Six months after the assignment, the gross value of tomato sales increased from US\$53,428 to US\$213,057 because of improved production and pest management techniques adopted by the farmers as well as increased area under tomato production - from 7.5 hectare to 12.5 hectares. As a result, growers' combined net income increased almost 54 percent, from US\$40,071 to US\$74,560, representing an increase of US\$166 per beneficiary grower. In Guatemala, improved Chinese and sweet pea production offered opportunity to farmers. Another FtF volunteer, an extension seed certification specialist from Oregon State University, established a production and seed quality control system that met exporters' requirements for timeliness and quality. One year after the assignment, farmers were cultivating more than 3,500 hectares of these crops. The industry employs approximately 30,000 people. The farmers reported a seven percent increase in production from 12,857 to 13,714 pounds/hectare and a three percent reduction in rejected peas in the packing

facility. This new production channel, made possible in part by the improved seed quality control, has resulted in more than US\$1 million in new sales.

- The Asia-Pacific Forum for Environment and Development (APFED) awarded its 2008 silver medal to the **Integrated Pest Management (IPM) CRSP** for research that greatly increased crop yields for farmers in Bangladesh. In conferring the award, APFED Chair Yoriko Kawaguchi cited the IPM CRSP's role in "improving rural livelihoods, and promoting sustainable and safer vegetable production in Bangladesh." One of the program's most successful developments has been a technique in which farmers place an insect sex pheromone mixture in melon and gourd fields. The pheromone attracts fruit flies, which drown in the sticky mixture used in the traps. This practice has resulted in much greater crop yields. The technique has been adopted by non-governmental organizations such as CARE and Mennonite Central Committee, which in turn have trained other farmers in the techniques, multiplying the impact.
- In FY 2008, USAID support to the CGIAR centers included collaboration between the **International Maize and Wheat Improvement Center (CIMMYT)**, the **International Center for Agricultural Research in the Dry Areas (ICARDA)**, and the USDA Agricultural Research Service, to develop new wheat varieties that are resistant to stem rust. In the event of an epidemic, these resistant wheat varieties could ensure the food security of entire regions, especially South and Southwest Asia, and the Horn of Africa. Economists estimate that a full-blown global epidemic of stem rust, the first since the Green Revolution research led by Norman Borlaug, could cost up to \$10 billion per year, triggering large price spikes and widespread hunger and instability.
- In FY 2008, USAID also supported **CIMMYT** research to adapt new lines of maize with more tolerance to both drought and low-levels of soil nitrogen. Under the type of drought stress frequently encountered by farmers in Africa, these new maize lines provide a 50-100 percent yield advantage over the local varieties they are replacing.
- In Ethiopia, **CIMMYT**-derived wheat varieties reached over 80 percent of the wheat acreage in 2008 (roughly 1.2 million hectares), leading to nearly a tripling of yields (2.4 tons/hectare) over the levels of ten years earlier. In 2008, the added value of the additional wheat produced by Ethiopia's smallholders reached nearly \$1 billion, providing vital income and greater access to food, while at the same time saving foreign exchange and reducing the need for food assistance.
- In FY 2008, USAID's support to the **International Rice Research Institute (IRRI)**, a CGIAR center, and its collaborative work with UC Davis and Asian partners led to the release in South Asia of breakthrough new varieties tolerant to flooding. In some of that region's poorest areas, the new IRRI rices will help smallholder, food-insecure farm families withstand the impact of flooding early in the season, which can lead to losses of over 50 percent. USAID also continues to support IRRI's work on drought, heat and salt-tolerant rice in partnership with the Bill and Melinda Gates Foundation.

- In FY 2008, USAID supported the work of the **International Institute of Tropical Agriculture (IITA)** to develop and disseminate resistant varieties of cassava, the most important food crop in tropical Africa. Cassava is threatened by two major diseases, African mosaic virus and brown streak virus. New advances were made in identifying brown streak resistant lines for rapid advancement and adoption in Eastern and Southern Africa. USAID Missions in the southern Africa region (Malawi, Democratic Republic of Congo, Mozambique and Africa Regional) supported regional partnerships to deliver resistant varieties reaching hundreds of thousands of farmers. Working in partnership with IITA on a Mission-supported project, the U.S. University South-East Consortium for International Development provided disease-resistant cassava planting material to farmers in the Democratic Republic of Congo.

Sustaining productivity growth will require greater attention to the impact of production practices and policies on the natural resource base. Resource depletion from existing practices and growing competition for water and energy resources increase the imperative to mitigate negative impacts on the environment, at the same time as capitalizing on the role of agriculture in providing positive environmental services.

- In Ecuador, the **IPM CRSP** conducted biodiversity monitoring, beginning with an assessment of the impacts of the cacao, plantain and *naranjilla* mixed cropping system on biodiversity. This cropping system can provide reliable income to local producers at the same time that it reduces soil erosion, decreases the need for pesticide, and enhances avian migratory corridors and rainforest buffer zones. The crops in the system, however, can be severely affected by pests and diseases, threatening environmental and livelihood benefits. Researchers made progress identifying disease-resistant cacao germplasm and pheromone lures that farmers could use to control insect pests of the *naranjilla* and plantain. Farmers were encouraged to use a biological control agent and pruning to control witches' broom, a persistent plant pest in cacao, and to plant plantain as a barrier to the spread of cocoa diseases in the mixed cropping system. This IPM package has stabilized this mixed-cropping system and reduced the need for frequent use of chemical herbicides and pesticides, benefitting the environment and producer livelihoods.
- **IPM CRSP** researchers also worked to develop an approach to manage a non-native, highly invasive weed species (Parthenium) in Eastern and Southern Africa. This weed reduces the yield of all major crops, and out-competes preferred pasture species and other native plants, reducing biodiversity. When it is consumed by domestic animals, it taints their milk and meat, reducing their value. It also causes respiratory and dermatitis problems in humans. The IPM CRSP used a model to predict the potential distribution of Parthenium in eastern and southern Africa, and two natural enemies are being tested at a quarantine facility in South Africa. In pasture management studies, two plant species proved to suppress Parthenium. Combined, these components of invasive species management will be an effective and sustainable solution to curbing the biological, health and financial impacts of Parthenium.
- In Uganda, tomato farmers participating in an **IPM CRSP** program that promotes the use of a tomato variety resistant to bacterial wilt, combined with the use of local organic

mulch, cut their pesticide use in half and received 2.5 times more income for their produce.

- The **Sustainable Agriculture and Natural Resources Management (SANREM) CRSP** partners Cornell University and Wildlife Conservation Society (WCS) continued developing a participatory and market driven model for food security and biodiversity conservation in Zambia via “Community Markets for Conservation” (COMACO). COMACO improves returns on agricultural investment by helping farmers receive competitive prices for their products, by marketing products as ‘wildlife friendly’ and by selling when demand is highest. In FY 2008, 4,000 women and over 3,000 men were trained in conservation farming practices to improve production while reducing impacts on wildlife. In addition, 14 village hunting representatives and former poachers were trained to become safari hunting monitoring scouts. COMACO market incentives foster sustainable agricultural practices and reduce bushmeat hunting, making game-based economic opportunities possible. Researchers are studying how to scale-up COMACO within Zambia and across southern Africa.
- The **International Center for Agroforestry Research (ICRAF)** developed and promoted the dissemination of a soil resource management system that integrates perennial leguminous trees (primarily *Faidherbia albida*) in Africa. Without using additional fertilizer, use of the nitrogen-fixing trees increased yields by 50-300 percent, adding roughly 130 kg of nitrogen to each hectare. In 2008, farmers unions in both countries reported that this sustainable system has been adopted by 120,000 farm families in Zambia and 100,000 in Malawi. In the Sahel, ICRAF partnered with World Vision, other CGIAR centers, and universities to promote introduction of nitrogen-fixing fertilizer trees and farmer managed regeneration of native trees, expanding to 5 million hectares in Niger alone.
- In FY 2008, IITA’s **Sustainable Tree Crops Program** conducted research on the biodiversity of smallholder cocoa production systems in the main cocoa growing regions of West Africa (Cameroon, Nigeria, Ghana, and Cote d’Ivoire). By adopting sustainable shade cocoa production, along with appropriate policies and activities that add value, a target yield of 1000 kg/ha of cocoa can be achieved, taking tremendous pressure off existing forests.
- In Rwanda, the USAID program assisted a farmer-owned coffee export company to put into place a network of cooperative extension leaders who work directly with hundreds of farmers in the production zones. These leaders educate the small farmer groups on quality interventions in the field and assist with efficient coordination of picking, transport and processing of harvests at the processing center. The interventions led to a 3 percent price increase in 2008 compared to 2007, and increased earnings accrued to the 30,000 farm families that own the export company. The program also continued to support quality control laboratories in Rwanda’s four major coffee production zones. These labs test each cooperative’s daily harvest in order to differentiate the coffees into three quality categories. This optimizes profit and better promotes the Rwandan brand in specialty coffee markets in the US, Japan, and Europe.

Understanding risk and its effects on farmers is crucial to development in the agricultural sector. Earlier research has shown that many farmers engage in lower risk, lower return production strategies in order to avoid potentially devastating loss—they don't take out loans, adopt new practices, or invest in improved seeds or fertilizer. Farmers need better tools to help them manage their risk so that they can improve their production strategies and incomes. There is growing interest among host governments, development practitioners, civil society and the private sector in improving risk management. With outreach to this broader community, research and pilot efforts on innovations in risk management have the potential to revolutionize development practices not only in the countries where these activities are being carried out, but around the world.

- The **Assets and Market Access (AMA) CRSP** has a number of research and pilot activities on risk and insurance. In India, researchers are testing the impact of indexed-based rainfall insurance and futures market information on small-holder farmer production decisions. The researchers have worked closely with the Self-Employed Women's Association (SEWA), an Indian NGO, to develop and employ effective financial literacy training tools to improve understanding of these risk management mechanisms among farmers in 3000 households. Another AMA CRSP research activity in Ghana, Ethiopia and Bangladesh is investigating the coping strategies used by households to manage idiosyncratic risk, such as health shocks, and the impact that those shocks have on farm productivity and household asset building and protection. The research activity identified country specific trends in household vulnerability to shocks, as well as households' access to social insurance mechanisms to cope with such shocks. In each of the three countries, research findings were presented at stakeholder workshops to policy makers (including, in Ethiopia, the Minister of Finance and Economic Development), donor representatives and civil society. These findings can help inform the design of more effective risk management interventions and tools, including social safety nets.
- In Peru, **AMA CRSP** researchers teamed with private insurance companies to bring new indexed insurance products to market. In 2008, the local private insurance partner made an initial offering of an area-yield insurance product to 1500 cotton farmers in Pisco, Peru. The researchers designed the insurance product and an innovative insurance literacy game that helps farmers understand how the product works and what benefit it can be to them. Insurance literacy training was provided to 410 producers. The researchers will stay involved with this pilot activity to measure the impact of this risk management product on farmers' access to finance, production strategies, and income levels, as well as the impact of the insurance literacy tool and discount coupons on insurance purchase.
- The **Global Livestock CRSP** has designed and employed two early warning tools in Mongolia, Afghanistan, Mali, and the Eastern Africa region. These tools offer substantial lead time for warnings of potential droughts that allow herders, officials, and assistance agencies time to make rational decisions on how to respond and minimize livestock deaths. When coupled with market indicators from livestock marketing information systems, the early warning system provides local and regional pictures of normal and distress periods over time, improving livestock management and crisis response.

Linking Small Producers to Markets

Improving smallholders' access to markets is critical to raising incomes. This includes access to markets for inputs such as fertilizer and seeds, access to credit and other financial services, and improved integration with output markets. Market information keeps farmers and traders attuned to the demands and changing preferences of consumers and guides farming, marketing, and investing decisions. To increase their market power, small holders benefit from development of producer organizations and adherence to international quality, food safety and labor standards.

- Research shows that lack of access to credit has a marked impact on smallholder productivity and income. Improved access to financial markets can dramatically improve farmer welfare. Research by **AMA CRSP** that identified constraints to participation in financial markets and the impact of those constraints has led to innovations in financial products, policies that improve loan up-take and farmer productivity, and increased willingness of financial institutions to lend to agricultural producers. In Malawi, where defaults on loans present a significant constraint to agricultural lending, a 2008 pilot activity monitored repayment of agricultural loans using smart cards with biometric information (fingerprints) on borrowers. Findings of the pilot showed positive impacts on both lending and repayment practices. For example, improved monitoring methods resulted in better initial screening by loan officers. Moreover, in cases where biometric loan monitoring was used, farmers shifted to higher value crops, including paprika and leafy greens, and used more fertilizer to increase profits and ensure their ability to repay loans. These improvements in both lending and borrowing behavior can improve the risk profile of agricultural lending and thereby increase lending to agricultural producers.
- The information communication technologies developed by the **Global Livestock CRSP's** project were adopted for a National Livestock Marketing Information System (NLMIS) for Kenya. The system will make information accessible through various media to all players in livestock marketing; establish a livestock marketing database for reference in planning, research and monitoring of marketing trends; and provide early warning information for disaster preparedness. The system provides timely information to enhance transparency and efficiency in livestock marketing, offering better returns for both producers and traders. The implementation and expansion of the NLMIS has been possible as a result of solid support from an array of collaborators including the Kenya Livestock Marketing Council (KLMC), Ministry of Livestock Development (MOLD), Vétérinaires Sans Frontières (VSF) – Belgium, Food and Agriculture Organization (FAO), Food and Agriculture Research Management-Africa (FARM-Africa), and Pastoralist Area Development Program (PADO), among other collaborators. The system is helping to close the gender divide between men and women in accessing information and has created more trust in business due to transparency. It is now possible to use the system to track trends in market prices and their implications on food security of pastoral households. Livestock purchasers can obtain information on maintaining better breeds of livestock, and the system provides a model for improved partnerships for funding, quality guarantee, and checks.
- The **Dry Grain Pulses CRSP** project *Biological Foundations for Management of Field Insect Pests of Cowpea in Africa* is developing tools to teach farmers about alternative approaches to reduce pesticide use for insect pest control on cowpeas. The challenge is to make this information available to farmers in countries where national extension

programs are weak due to limited financial resources. To overcome this constraint, this CRSP team has partnered with T4Global to develop MP3 messages for use in farmer field schools being planned for Burkina Faso, Niger, and Nigeria in 2009 and 2010. The MP3 players, containing the messages recorded in the local languages, will be given out at the farmer field schools. The messages will reinforce the information received through the farmer field schools and allow participants to share what they have learned in their home villages.

- **The Partnerships for Food Industry Development – Natural Products Program (PFID-NP)** facilitated the commercialization of herbal teas in Southern Africa by linking farmers, who were previously wild-harvesters, to world markets. This was accomplished by improving cultivation practices and post harvest technologies in processing and packaging. The PFID-NP team focused on two indigenous herbal teas. In both cases, PFID-NP's NGO partner, Agribusiness in Sustainable Natural African Plant Products (ASNAPP), served as a bridge between the communities, researchers, and the herbal tea market. Working with several communities, ASNAPP assisted collectors to organize themselves into growers' groups, creating new entrepreneurs in agribusiness. Through these interventions, farmer communities produced 900 tons of Rooibos and Honeybush teas with a value of \$400,000 per year.
- **PFID-NP** has been improving on quality standards with its NGO partner, ASNAPP, in Senegal. Products include hibiscus, kinkeliba, and neem, as strategic crops for sustainable economic development. The quality of hibiscus produced by trained communities exceeded international standards. Hibiscus was declared the “crop of the year” by the Senegalese government. PFID-NP introduced a system to increase production and quality of hibiscus. This system included setting up procedures to assess the quality of hibiscus calyces; providing lab equipment for a quality control lab in Senegal; and training of farmers, technicians, and a researcher. As a result, the price for hibiscus received by targeted communities increased 90 percent. In addition, Senegal hibiscus received organic certification from Europe and the United States. This was the first time West African hibiscus received organic certification, which, coupled with increased product quality, led to a 125 percent price increase. At the beginning of 2008, three targeted women's communities also achieved Fair Trade certification, which provided a further premium price of 1225 CFA (a 200 percent premium compared to the standard quality). In the production chain, PFID-NP helped increase the value of hibiscus through a multi-layer value addition process and assisted in its commercialization. The net production of hibiscus in Senegal has increased to more than 50 tons per year.
- The board of directors of the Global Food Safety Initiative launched a partnership with the **PFID – Fruits and Vegetables (F&V)** to develop the Food Safety Knowledge Network (FSKN), a collaboration between public and private sectors to increase the food safety skills of individuals throughout the food value chain in emerging markets. A pilot group of industry, government, and university leaders was established. Activities included completing a series of briefing papers and beginning development of business and implementation plans for the network. The Hewlett Foundation provided additional

funding to create knowledge infrastructure and expand engagement of appropriate industry, developing country governments, and donors. Similarly, the United Nation's Industrial Development Organization (UNIDO) and FAO are seeking to partner on the implementation of the FSKN training and capacity development components in emerging and developing countries.

Ensuring Vulnerable Groups Benefit from Rural Economic Growth

To ensure that economic growth does not bypass the poorest households, it is imperative to include transitional support for vulnerable groups such as women and the very poor. Women in developing countries play a critical role in agricultural production, yet many development policies continue to assume that farmers are men. In many cultures, women's access to assets, and therefore to livelihoods, is restricted. The important roles that women play in agriculture and translating growth into improved nutrition call for urgent attention to gender-specific constraints in production and marketing. Among the very poor, research shows that households falling below a particular level of asset holdings are likely to become stuck in a poverty trap from which it is difficult to escape. In such cases, donor organizations and host country governments often find themselves facing an ever-increasing and persistent drain on assistance originally intended for emergency relief. In order to close the gap between humanitarian and development assistance, we must find ways to help the poor protect the assets they already possess and build that base to a level that allows them to participate in growth.

- The **AMA CRSP** is assessing access to land, particularly for rural women, in post-conflict Liberia and Uganda. The project has been working to identify the current state of land tenure through community surveys and interviews, as well as through consultation with policymakers and other stakeholders. This policy research will inform land reforms in both countries resulting in better and more secure access to land assets. The comparison of the two countries in different phases of the land reform process also offers particularly useful insights to Liberian collaborators in the Land Commission (operational in 2009) as they formulate their post-conflict land policy. There is a wide variety of tenure structures in Sub-Saharan Africa, and the research has shown that landholders themselves are often not sure of their status. The researchers demonstrated the particular vulnerability that women experience regarding landholdings. Tenure is frequently dependent on marital status, and women's rights are in question in the case of death or divorce. **AMA CRSP** researchers are in an excellent position to inform ongoing policy decisions regarding asset programs.
- A special gender initiative was included in the FY2008 **IPM CRSP** activities. The program served to share tools and educate researchers on the differences between assuring and documenting women's participation on one hand, and gathering sex-disaggregated data and undertaking gender analysis on the other. The **CRSP** made resources available to integrate gender considerations through research, training and extension activities. A set of research questions was developed and funding dedicated for gender and participative research.
- In Nicaragua, **AMA CRSP** researchers are analyzing a government conditional cash transfer (CCT) program to determine impact on household well-being, risk management,

and asset accumulation. The transfers were found to have a positive impact on the cognitive development of young children in participant households. Additionally, expenditures on preventive health care and nutrient-rich foods, both of which improve development outcomes for children, increased by more than the amount of the cash transfer, indicating a change in parental behavior brought on by participation in the program. The research was able to show that CCT programs can have even greater impact by involving female leaders, since their participation in program implementation expanded investment and asset accumulation by recipient households. The researchers used initial findings to identify and design complementary interventions to improve the effectiveness of the cash transfer. The project hopes to understand the long-term impacts of the transfers in order to inform the design of future CCT programs in Nicaragua and elsewhere.

Improving Health and Nutrition

Malnutrition contributes to half of all child deaths in developing countries. Poor women and children are the first to become malnourished and the most likely to suffer severe consequences. In the case of children under two, there are long term ramifications, including physical and cognitive losses that can never be corrected. Agricultural and food-based approaches are remarkably underutilized as strategies for improving nutrition among the world's poor and undernourished. Poor sanitation and water borne diseases can undermine health and the utilization of food that people do consume, further contributing to undernutrition.

- A **Global Livestock CRSP** project aimed at improving children's consumption of animal source foods in rural Ghanaian communities through interventions that included community-level microcredit with entrepreneurial skill development. The project achieved 100 percent repayment on four loan cycles; women in participating households also experienced higher levels of savings. Frequency of children's animal source food consumption, knowledge of child nutrition, and household food security were all improved among households in intervention communities compared to those in control communities. After four loan cycles (of 16 weeks each), children had greater improvement in weight-for-age scores from baseline levels. Two training manuals on nutrition and entrepreneurial skills and an undergraduate course were also developed by the project. The latter was adopted by the Department of Nutrition and Food Science of the University of Ghana.
- The **Peanut CRSP** responded to a request for support by Medicines and Foods for Kids in Haiti to develop its capacity to manufacture peanut-based rehabilitation foods for children. These foods have proven effective in Africa. Development of the factory and Hazard Analysis & Critical Control Points (HACCP) methods of processing to meet the international standards were put in place.
- Under the **Global Livestock CRSP**, the Sustainable Management of Rural Watersheds (SUMAWA) project developed an enterprise-based program centered on the local construction and marketing of bio-sand water filtration systems in Kenya. The program, currently in the second year, provides a vehicle for community empowerment along with the delivery of sanitary drinking water to over 60 rural households in the upper catchment

area of the River Njoro watershed. In addition, the project installed a network of rain gauges and runoff stations in the Njoro watershed in western Kenya contributing significantly to the understanding of water quality, watershed health, and land use. A bio-sand filter was evaluated and introduced in households. In the final trial of the adapted Kenyan filter design, with 30 rural and peri-urban mothers, average filter performance reduced child diarrhea rates by 54 percent.

- **IRRI** made substantial strides in 2008, advancing its new rice lines, called Golden Rice, which will provide adequate levels of Vitamin A intake at normal levels of consumption. Bioavailability research in partnership with Tufts University and USDA's Agricultural Research Service demonstrated that the conversion factor for beta-carotene (the precursor of Vitamin A) to the vitamin is just over three to one, which makes Golden Rice a highly efficient means of alleviating Vitamin A deficiency. IRRI is now partnering with Helen Keller International and other national and local organizations in the Philippines in planning a launch campaign accompanied by an extensive nutrition education effort.

Rebuilding Afghanistan

Title XII universities play a vital role in the USG agriculture strategy, through which USAID, USDA and the National Guard Agriculture Development Teams work as an integrated team to support the Ministry of Agriculture, Irrigation and Livestock as it leads the reconstruction and development of the sector and returns it to its former level of prominence in the region. The universities provide technical capacity, expertise and leadership through the following activities:

- **Afghanistan Water, Agriculture and Technology Transfer Project (AWATT):** This program with New Mexico State University links U.S. universities with Afghan universities and ministries to extend information and knowledge on appropriate technology, enhance the management of water resources, and develop a policy framework for land tenure in rural areas.
- **Advancing Afghan Agriculture Alliance (A-4):** This alliance with Purdue University is building an agriculture knowledge system to improve agriculture education, research and extension, including several dozen Afghans studying for MS degrees in the U.S. and India prior to becoming core faculty for the expanding agriculture universities..
- **Private Community Forestry for Natural Resource Management:** This program with the Global Partnership for Afghanistan and Cornell University is increasing tree cover and enhancing natural resource management in Kabul, Logar, Wardak, Paktya, Parwan, Kapisa and Panjshir Provinces.
- Livestock is the main source of household income in rural areas of Afghanistan, with 82 percent of all Afghan families owning livestock. The **Global Livestock-CRSP** has formed partnerships to improve the situation of Afghan livestock holders via research, market access, and policy recommendations. Facilitating those partnerships is the **Afghan PEACE (Pastoral Engagement, Adaptation, and Capacity Enhancement) project**. By providing more timely information on emerging forage conditions and market prices and

by increasing the number of cash-generating livestock enterprises for pastoralists, the project aims to reduce the social and economic risks associated with livestock production. Afghan PEACE utilizes the Global Livestock-CRSP's **Livestock Early Warning System (LEWS)** and the **Livestock Information Network and Knowledge System (LINKS)** to provide herders with improved information regarding the nutritional content of grazing lands, both present and into the near future. The PEACE project also facilitates conflict resolution processes within pastoral communities across Afghanistan.

CGIAR Famine Fund Activities

With special authorities from the Office of Management and Budget, USAID received resources known as “famine funds,” which are targeted to areas of highest food insecurity and to innovative approaches to preventing famine and reducing hunger. In 2008, almost \$20 million in FY 2008 famine funds were allocated to the rapid scale-up of CGIAR technologies capable of meeting local and regional needs for staple foods. Each technology was selected based on readiness for deployment, the ability to deliver results quickly in vulnerable areas affected by high staple food prices, as well as market demand and relevance to objectives relating to value chains, trade corridors and agricultural productivity. Activities undertaken with “famine funds” included:

- **Averting a Wheat Stem Rust Epidemic:** Wheat varieties resistant to a new race of wheat stem rust, Ug99, are being multiplied and deployed in South and Southwest Asia, Egypt and Ethiopia. These new varieties were produced by CIMMYT and ICARDA, in collaboration with USDA/ARS, with USAID funding over the past three years, and are ready for scale-up and dissemination. Efforts to expand the seed supply of these resistant varieties must outpace the spread of the virulent pathogen, which reached Iran earlier this year.
- **Emergency Initiative to Boost Rice Productivity in West Africa:** A comprehensive plan deploys new, higher-yielding rice varieties in four West African countries, Ghana, Mali, Nigeria and Senegal, in tandem with the use of highly efficient, deep placement of urea fertilizer. USAID, together with other partners, launched a major effort to help West Africa respond to both the threat (for consumers and stability) and opportunity (for farmers) of record high global rice prices. The CGIAR's West Africa Rice Development Association, the International Fertilizer Development Center, and Catholic Relief Services are working with many local and national partners in this effort.
- **Increased Cassava Productivity:** USAID-supported research has led to cassava varieties that boost productivity by 30 percent over current types. Moreover, these same varieties are more responsive to fertilizer and other farmer efforts than existing widely-grown types. The activity deploys improved materials so that farmers can take advantage of expanding value chains. Through public and private sector partners, the project, led by IITA, rapidly multiplies and disseminates planting material of these new and improved varieties. Production increases will be complemented by farmgate processing to increase storage life and value.

- **Increased Potato Productivity:** Potato is the second crop in importance in highland East Africa after maize. Even so, it is continually threatened by late blight fungus, the same disease that led to the Irish potato famines in the 19th century. New, higher yielding varieties developed by the CGIAR's International Potato Center that are resistant to late blight are being delivered to farmers based on a new, rapidly deployed technology; the technology is implemented via locally owned small- and medium-enterprises, offering an economically sustainable means of supplying low-cost, clean planting materials that boost productivity and profits.
- **Food Security in South Asia:** Building on previous USAID investments in the South Asia Rice-Wheat Consortium, this project will ensure the rapid adoption of new management practices and cropping systems in the breadbasket/rice bowl of South Asia that feeds more than one billion people. Adoption of low-till or no-till techniques are reducing water and energy requirements by up to 30 percent and boosting productivity and income levels among low-income farm families in areas with relatively poorer soils and water control. This activity is designed to link with a new three-year, \$30 million partnership between USAID and the Gates Foundation to help ensure the region's food security in the face of climate change.

Section III. LOOKING FORWARD: TITLE XII –THE NEXT FIVE YEARS

The Administration has made it clear that agriculture and food security are priority areas for foreign assistance. This momentum provides the opportunity to build on the success of Title XII, by expanding the engagement of U.S. universities through new models and addressing new challenges and opportunities to agricultural development. The award of three new CRSPs in the near term and the development of a new set of high impact priorities for research, training, and extension for the long term respond to the elevation of agriculture's priority as a U.S. assistance objective.

Agricultural Research

The **Horticulture CRSP** will commence in FY 2009. This new program identifies the production, post-harvest, food safety, marketing, and enabling environment constraints to small and medium-sized enterprise participation in horticulture markets. Research will develop and apply solutions to address these constraints, disseminate technical knowledge and appropriate technology, and develop policy recommendations to link producers to markets. The CRSP also partners to build host country scientific and technical capacity, strengthen academic and technical training, and apply research to improve smallholder production and competitiveness in high-valued horticultural products.

A new second CRSP's, **Adapting Livestock Systems to Climate Change (ALS-CC) CRSP**, will research the impacts of climate change on livestock production systems and target its direct and indirect challenges to livestock, human and environmental health. The association of humans and animals often creates conditions that affect the health of both and changes their environment. ALS-CC CRSP research will help strengthen the adaptive capacity of vulnerable, livestock-dependent households to cope with climate change. The objectives of this program are to:

- research and disseminate its results on the impact of climate change on livestock management systems;
- build sustainable capacity of collaborating host country livestock research institutions that can respond to the impacts of climate change on livestock issues of national and regional importance; and
- identify and resolve critical livestock value chain issues, including animal-based diseases, related to the impact of climate change on production systems.

In 2009, USAID launches the development of a **Nutrition CRSP** in selected South Asian and sub-Saharan Africa countries for award in 2010. The Nutrition CRSP supports a long-term research agenda that evaluates agriculture-based approaches to improving the nutritional status of vulnerable children and women. Efforts to reduce maternal and child under-nutrition through agriculture and food based strategies will include: 1) establishing a nutrition survey system; 2) building individual and institutional capacities at the country level to address key nutrition challenges and advance the nutrition agenda; 3) improving maternal, infant and young child nutrition by scaling up proven strategies to reduce macronutrient and micronutrient deficiencies; and 4) focusing on the role of women throughout the agriculture value chain to improve household access to and availability of food. The Nutrition CRSP will bring about collaboration among public and private nutrition and agriculture organizations in designated countries to

design and conduct integrated public health research for the diagnosis, prevention and/or treatment of malnutrition. It is intended to examine the gaps in knowledge and expertise in best practices related to malnutrition interventions and plan how best to provide research to fill these gaps.

Impact Evaluation

Accountability is an important cornerstone of the emergent food security strategy. USAID will harness its university partners' capacity for rigorous impact evaluation in order to inform policy recommendations, as well as determine programming priorities and refine approaches. While some country-level evaluation efforts are already being established with university partners in 2009, USAID will seek to establish a broader impact evaluation effort to allow learning across regions, agencies and implementation partners. Among assessments of different models for long-term training, and agribusiness programs scheduled for 2009 are the outcomes for women from the Initiative to End Hunger in Africa of different models for long-term training, and agribusiness programs

Emerging Priorities

USAID recognizes that the food security strategy will require further development of our capacity for analysis and programming in several key areas. In the coming year, USAID will explore a number of priority issues, many of which may engage the expertise of U.S. land grant universities, as well as develop a longer-term research strategy for addressing food security. These priority issues include:

- Effective gender equity approaches;
- Engaging youth in agriculture;
- Reaching the poorest and problems of persistent poverty;
- Adapting and mitigating the effects of climate change; and
- Sustainable water resources management

In addition to these topical areas, USAID will partner with U.S. university partners to expand programming efforts in several areas. These include:

Human and Institutional Development

The emerging food security strategy calls for host country leadership in the planning, donor coordination and programming processes. Further, enhanced food security will require, in most cases, significant policy reforms that create incentives for private sector investment, reform public investments, and create effective social protections. USAID will redouble its efforts in partnership with U.S. universities through the Title XII program to help develop the human and institutional capacity in host countries to meet these challenges. While USAID will continue to support expanding capacity within the private sector and civil society organizations, we recognize the need to re-invest in public institutions to sustain the development process.

Modernizing Extension and Agricultural Services

In the past, extension was seen as a simple mechanism for technology transfer, part of a "pipeline" delivering new technologies from research programs to passive farmer adopters. Today extension programs include several competing or complementary strategic approaches including technology transfer, human capacity development, facilitation of local capacity to

provide services and institutional development, and advisory services responding to specific requests for assistance. It also includes a greater diversity of approaches – formal public extension, private input dealers, community-based models, and others. Looking forward, USAID will survey best practices and innovative ideas to better serve our country field missions, host country governments, private sector, and NGO partners in designing and implementing effective extension systems.

Afghanistan and Pakistan

Following the visit of the Presidents of Afghanistan and Pakistan to Washington in May 2009, the three countries set up trilateral talks about agriculture. The trilateral talks embody three working groups built around 1) agriculture trade corridors to facilitate regional and global markets for Afghan and Pakistani products; 2) food security through applied research to improve crop productivity, reduce post-harvest losses, control diseases; and 3) water management and watershed rehabilitation to improve irrigation methods and create jobs.

Afghanistan

Top U.S. civilian and military planners in May 2009 joined with the Ministry of Agriculture, Irrigation and Livestock (MAIL) to frame a whole of U.S.G. strategy for supporting MAIL as it revitalizes the agricultural economy and increases jobs and incomes. The guiding principles of the strategy include counterinsurgency and investments for sustainable growth; government regulations that enable private sector development; linking projects to key value chains; and demand-driven assistance with technical support from provincial working groups.

The first goal of the agricultural strategy is to expand jobs and incomes by increasing productivity through improved access to inputs and effective extension services; invigorating agribusiness through better linkages among farmers, markets, credit, and trade corridors; and rehabilitating watersheds and improving irrigation infrastructure. The second goal aims to build Afghans' confidence in their government's ability to provide services. Direct budget support and technical assistance will be provided. Emphasis will be placed on building capacity, increasing the impact of counterinsurgency, and development of a significant irrigation project in a location to be determined.

Pakistan

As of August 2009, a major funding increase is planned for agriculture in Pakistan for FY 2010. It is expected that programming will be developed around an "Empower Pakistan: Agriculture (EPAG)" suite of activities for food (integrated farm systems and horticulture), dairy (milk, livestock), management (training and agricultural research), and policy (food security, agriculture and economic policy research and analysis). Planning is now in a preliminary stage.

Section IV. SUMMARY OF BIFAD'S ACTIVITIES

BIFAD participates in the planning, development, implementation and monitoring of Title XII activities as described in Section 297 of the Famine Prevention and Freedom From Hunger Improvement Act of 2000 (P.L. 106-373) of the Foreign Assistance Act of 1961, as amended. BIFAD's primary role is to assist in the implementation of Title XII and to advise the USAID Administrator on issues as requested.

BIFAD Members and Secretariat in FY 2008 included:

BIFAD Members

1. Robert Easter, Chair, University of Illinois
2. Catherine Bertini, Syracuse University
3. Allen Christensen, Brigham Young University
4. William DeLauder, Delaware State University
5. H.H. Barlow, III, Burkmann Feeds and Dairyman
6. Tim Rabon, Mesa Verde Enterprises
7. Keith W. Eckel, Eckel Farms, Inc.

The USAID Designated Federal Officer for this advisory board is Dr. Ronald Senykoff.

Title XII legislation authorizes BIFAD to create subordinate units as may be necessary for the performance of its duties. To that end, BIFAD has established the Strategic Partnership for Agricultural Research and Education (SPARE). SPARE membership is drawn from the U.S. university community, the private sector, and USAID.

SPARE Members and Secretariat for FY 2008 include:

SPARE Members

1. Sandra Russo, Chair, University of Florida
2. Sue Schramm, ACIDI/VOCA
3. Dawn Thomas, U.S. Agency for International Development
4. Ray Miller, University of Maryland
5. Robert Paarlberg, Wellesley College, Harvard University
6. Harriett Paul, Florida A&M University
7. Josette Lewis, U.S. Agency for International Development

SPARE Observers

1. William DeLauder, Delaware State University
2. Chris Pannkuk, Washington State University

SPARE Secretariat

Ronald Senykoff, U.S. Agency for International Development

BIFAD Activity Highlights

The 152nd meeting of the Board for International Food and Agriculture Development (BIFAD) was held on October 16, 2007, in Des Moines, Iowa, in conjunction with the World Food Prize Symposium. Over 30 representatives from Title XII universities, U.S. Government agencies, and non-government organizations attended the meeting.

At the meeting the Board discussed its responsibilities to advise and assist the Administrator on matters concerning agricultural development and ways to improve BIFAD access to, and communication with, the Administrator. The Board discussed in depth the FY 2006 Title XII Report to Congress, and recommendations for improved reporting of Title XII activities in the future. The USAID ADS 216 revisions as related to systematic application of Title XII across the Agency were deliberated and comments were presented to USAID. A BIFAD Conference of Deans was proposed to generate new thinking and commitment on leveraging the capacity, know-how, and creativity of Title XII universities to assist USAID in transformational development. Fostering closer engagement between the universities and USAID would be a fundamental purpose of the conference.

Also at the meeting Dr. Ronald Senykoff, at the request of the Board Chairman, presented a proposal to create Centers of Excellence for Technology Adaptation in Africa and the Middle East. Dr. Nina Fedoroff, the Department of State Science Advisor, discussed the importance of science in development and responded to several questions from the audience on biotechnology. The Board's business meeting concluded with two graduate students from the Syracuse University Maxwell School of Public Administration presenting reports on "Increasing Funding for Higher Education in Sub-Saharan Africa." In the afternoon session, BIFAD hosted two open forum discussions: Environmental Issues on Biofuels Development and Economics of Biofuels for Africa Development.

The 153rd meeting of BIFAD was held in Washington, DC on February 27, 2008. The morning session featured program and initiative updates. USAID briefed BIFAD on its Global Development Commons program, provided an update report on the Global Summit on Higher Education and Development, and presented an overview of the President's FY 2009 budget for agricultural development. As a follow up to BIFAD initiatives, reports were presented on a BIFAD Title XII Study and the Planning Status of the BIFAD Conference of Deans. A discussion was also held regarding the Bissell Report Recommendations and resolutions for 2008 actions.

The afternoon session considered operational and management issues related to the CRSP, including universities as subcontractors, new CRSP programs, and new CRSP management approaches. The meeting closed with a report from the BIFAD SPARE committee.

Based on the discussions presented at the spring meeting, BIFAD sent a letter to then- USAID Administrator Fore with BIFAD's recommendations and plans regarding mutual goals. The recommendations and plans were related to the following topics: global food prices, USAID's budget, position of BIFAD in the Agency, Title XII, CRSPs and the Conference of Deans. The overall theme of the letter was that the U.S. university community represents an important

partnership to enhance USAID's program effectiveness and efficiency by leveraging both program and staff resources, but organizational changes are required.

On April 29-30, 2008, BIFAD hosted a Conference of Deans in Arlington, Virginia. Forty-four leaders in international agriculture from higher education across the United States attended the conference. Its theme was Higher Education on a New Stage in Global Agricultural Development. An overview of global food security and agricultural development was provided by the International Food Policy Research Institute (IFPRI), followed by a series of work sessions. The conference produced six key outcomes that formed the basis for a white paper entitled, "Higher Education: A Critical Partner in Global Agricultural Development," that was drafted by the participants and presented to the Administrator on September 9, 2008.

On May 15, 2008, the SPARE committee met in Washington, DC. The meeting discussed various actions of support for BIFAD including: review of the draft BIFAD Title XII Study – Status Report, revision of USAID policy on Higher Education (ADS 216), review of the SPARE charter, review and comment on the proceedings of the Conference of Deans, review of the Leader with Associates Awards, review and status on the CRSP Guidelines, and review of CRSP extensions. Follow-up actions were assigned and the SPARE Chair reported to the BIFAD at its next meeting.

The 154th meeting of BIFAD was held in Washington, DC on June 17, 2008, and the theme was Global Food Prices and Policy Actions. The morning session featured program and initiative updates. The BIFAD Title XII Study – Status Report was submitted and discussed. The report reviewed Title XII history, provided key findings on issues and made several recommendations to BIFAD on ways to better support USAID programs. An additional report summarizing the results of the Conference of Deans was presented, and the status of the white paper was discussed. Finally in the morning, IFPRI provided an update on the global food crisis and the policy actions that were being advanced in various fora.

The afternoon session reviewed operational and management issues and included discussions on CRSP funding, CRSP guidelines, review and revision of USAID policy on Title XII implementation guidance, and design progress on the new Horticulture CRSP.

On September 11, 2008 the SPARE committee met in Washington, DC. The committee members discussed various actions of support for BIFAD including; the evolving USAID food security strategy and involvement of Title XII institutions, the USAID Development Leadership Initiative, review and comment on the implementation of the Conference of Deans White Paper, review of and recommendations on a proposal for a document on the CRSP philosophy, review of and recommendations on the SPARE Charter revision, development of a 2008-2009 work plan as requested by BIFAD, and SPARE actions and assignments in preparation for the BIFAD meeting to be held in Iowa in conjunction with the 2008 World Food Prize Symposium.

V. BIFAD's Views On The FY 2008 Title XII Report To Congress

Overview

The period covered by the USAID Title XII FY 2008 Report to Congress, October 2007 – October 2008, was one in which the world experienced food shortages not seen in 30 years. In fact, it was the last major global food crisis that led to the enactment of Title XII, appropriately named the Famine Prevention and Freedom from Hunger Act of 1975. Title XII was passed to avert exactly the type of food insecurities that exist today and we maintain that underinvestment in Title XII programs was a factor in agricultural productivity and output not keeping pace with demand.

BIFAD was very pleased by USAID's renewed commitment to international agriculture. USAID's Title XII Report to Congress discusses the important contributions Title XII programs are making to the Agency's efforts to address global food challenges. Colleges and universities are central to Title XII's mandate of "ensuring food security, human health, agricultural growth, trade expansion, and the wise and sustainable use of natural resources". We agree with the report's assessment that Title XII programs build human and institutional capacity, and provide USAID with "analytical resources for sound policy recommendations, and evidence-based programming in support of the food security strategy..."

A major focus for U.S. global food strategy and USAID must be to increase agricultural productivity in developing countries. We think the Title XII report recognizes this fact, but whether that will be translated to a more robust policy remains to be seen. Research, and its applications all along the value chain, is at the core of increasing agricultural productivity. The university community is best positioned to be the key partners in this area.

We continue to be impressed that only 16% of USAID's agriculture investments were in EGAT and we don't have a clear idea of how much of the remaining 84% actually involved Title XII University work. The report overwhelmingly is focused on the 16%.

We were interested in the statement in the executive summary that USAID intends to add capacity in agriculture – but there is no indication or statement to indicate that USAID understands the capacity available to it through the Title XII community.

Year in Review

BIFAD's role under Title XII to "advise and assist" the USAID Administrator was greatly enhanced by its re-positioning within USAID from EGAT to the Office of Development Partners. While BIFAD has worked closely and collaboratively with EGAT staff over the years, ODP has provided greater opportunities for BIFAD to work with other Bureaus for creating effective partnerships. ODP has also responded positively to BIFAD's entreaties for additional staff resources. EGAT's uncertain budget climate left the bureau unable to do so. The activity level for BIFAD in FY08 increased significantly as a result of these new developments. This benefitted both the higher education community and USAID.

Higher Education Summit

In tandem with the heightened attention to global food security, was USAID's renewed focus on the role of higher education in development. Administrator Henrietta Fore convened a "Higher Education Summit for Global Development" where higher education, corporate, and foundation leaders from around the world came to the State Department to forge new partnerships to address current and emerging development challenges. While this event did not involve BIFAD directly, it clearly created an atmosphere throughout USAID Washington and the missions where leveraging the resources of colleges and universities would be a higher priority. The Summit led to regional meetings – Latin America, Middle East, East Asia, and Africa – where higher education partnerships were advanced.

Conference of Deans

The Board believes that it was this new positive appreciation for universities that enabled BIFAD to sponsor perhaps its most important activity of the year, a "Conference of Deans", April 30, 2008. The purpose of the COD was to: 1) identify the global agricultural development needs on which the USAID should focus over next five to ten years; 2) identify ways universities can be leveraged to assist USG in implementing its agricultural development strategy; and, 3) create a model and process for how universities and colleges can cooperate as an ongoing "thinking collaborative" to advise the USG on global agricultural development strategy.

The COD produced a white paper that presented three priority areas for international agriculture. First, building human and institutional capacity is fundamental to any advancement in productivity and growth and the U.S. should work to create in-country capacity to solve future agriculture problems and foster national development. Second, to address food demand, it is critical to make improvements all along the food chain via generating new technologies and management approaches to boost productive output as well as minimize post-harvest losses. Third, an integrated approach to a food-secure future also includes an emphasis on rural entrepreneurship development and youth education and workforce training.

The white paper made a number of specific recommendations, including: the establishment of a Global Development Alliance for Agriculture (GDAA) to generate partnerships with the business community; a more robust CRSP program for research and training; the creation of Regional Clusters for Food, Agriculture, and Nutrition; re-establishment of USAID's Strengthening Grants Program, modeled after the USAID effort launched over 30 years ago, to strengthen U.S. academic institutions and their technical capabilities through cooperative assistance programs; and creation of a network of Centers of Excellence for Technology Adaptation as platforms for institution to institution development.

The Board presented the white paper to Administrator Fore, who committed herself to advocating for elements of it in the development of U.S. global food security strategy. The white paper also served as the basis for BIFAD's participation at the U.N. global food meeting, in September of 2008. The Board believed that the COD was an valuable exercise and energized both USAID and the Land-Grant community to re-engage and strengthen partnerships.

Collaborative Research Support Program

BIFAD generally supports the creation of new CRSPs in the areas of nutrition, horticulture and livestock/global change, although additional resources need to be identified so that available dollars are not spread too thin among all CRSPs. We have also received input regarding the appropriateness of linking climate change to livestock as opposed to a climate change CRSP exclusively. The former may be too limited in scope to undertake the type of research, training, analysis, and capacity building necessary for comprehensive problem-solving. BIFAD has also repeatedly urged the creation of a water CRSP. The report indicates that USAID is undertaking an assessment and hope that they will be able to move forward. Water remains one of the most compelling development issues, and the Board continues to believe that a water CRSP is needed and warranted.

BIFAD established an ad hoc task force to address a number of CRSP technical issues, including CRSP forward funding and extensions, timelines for the horticulture and livestock CRSP, and CRSP spending limits. The task force prepared recommendations which BIFAD adopted and passed along to the Administrator for consideration.

Biotechnology

On broader research issues, the Board was encouraged by the increasing attention by the Agency to increasing support for biotechnology. The report lists a number of biotechnology-related activities. We support these and continue to urge the Agency to make greater use of universities as partners in expanding biotechnology research.

EGAT Budget

The Board also expressed its view to the Administrator that the EGAT budget situation for FY08 remained untenable, and has gone on record as urging the Agency and Congress to provide additional resources. At a time when EGAT is asked to take on more responsibilities for dealing with the global food crisis and respond effectively to Congressional directives, an increase in EGAT funding is more than justified. EGAT has historically received approximately 10% of Development Assistance, and that should be the minimum. The Board also made the point that leveraging the university community through BIFAD's leadership, can harness powerful advocates for agriculture and economic growth funding across the Agency. Universities have access to substantial private sector resources and partnerships, as well as innovative, strategic leadership embedded within their campus structure.

Wider Recognition of Title XII

The Board asked the Administrator to urge the Mission Directors to identify a person responsible for Title XII. Having someone at each mission responsible for Title XII activities would not only help universities, but it would also serve to ensure that there is a better understanding of Title XII in the Missions, and lead to improved accuracy in identifying Title XII activities.

Kenya Site Visit

There is nothing more valuable to BIFAD's understanding of USAID's agricultural development work and the university role than actual site visits. Three members of the Board went to Kenya to see Title XII projects first hand, what is happening on the ground, and how the work of USAID and universities improved the lives of people in that country. But, infrastructure

challenges remain daunting, and roads are much in need. The BIFAD members visited small dairy operations in Eldoret. One member of the BIFAD delegation is involved in the dairy industry and was much impressed, as was the rest of the delegation, by the technology of using methane gas to propel the dairy farm equipment. The BIFAD delegation saw truly outstanding projects undertaken by the Global Livestock CRSP with Egerton University. There were also impressive livestock/range management, commercial beef, value chain and wildlife tourism operation projects in Liakipia. Several water projects where simple technologies were used to develop potable water systems were included in the visit. In the Sumawa region the delegation saw a unique seedling- reforestation project that was producing results. The BIFAD delegation visited two CGIAR centers --ICRISAT and CYMMYT – and learned of their activities with respect to private sector investment, increased credit, expanding business knowledge. The delegation also visited the Kenya Agricultural Research Institute. While space does not allow for further detail on these or the other experiences during the visit, all BIFAD members are encouraged to have at least one host-country visit to truly understand what U.S. foreign assistance dollars are doing. It brings a degree of appreciation that can not really be felt any other way.

Africa-U.S. Higher education Initiative

The Africa-U.S. Higher Education Initiative is a very important undertaking to build higher education capacity in Sub-Saharan Africa. The primary goals of the Africa-U.S. Higher Education Initiative are to enhance and empower higher education institutions in Africa and the U.S. to contribute more effectively to African development and transformation and to increase the competence of U.S. higher education institutions in global affairs related to Africa. Although BIFAD is not directly involved in the Initiative, it is consistent with what BIFAD believes must happen for sustainable economic growth to occur in developing countries. No country can be truly prosperous without a vibrant higher education system that educates the engineers, doctors, chemists, teachers, agronomists, plant scientists, etc., so critical to economic growth. The demand for higher education in Sub-Saharan Africa has exploded in recent years. The Initiative proposes to develop a competitive grants program to fund a significant number of partnerships linking African and U.S. higher education institutions and their strategic partners. Through this grants program the Initiative will encourage the development of projects that show promise for fundamental institutional change and that allow for long-term collaboration. The Initiative is a unique partnership among U.S. higher education, foundations, USAID, and African institutions and organizations, and BIFAD urges USAID to continue to support the Initiative with sufficient funding to support a healthy competitive grants program.

Concluding Thoughts

The world is in a new era where the contribution of agriculture to economic growth in developing countries is being re-assessed. It is too bad that a global food crisis complete with food riots was necessary to refocus the attention of donors and policymakers. Colleges and universities remain central to any successful food security strategy because they build the human and institutional capacity necessary for long-term agricultural productivity. We are encouraged that USAID's Title XII report for Fiscal Year 2008 shows a commitment to expanding partnerships with universities and restoring the traditional priority of agriculture. The Board, in its new "home" in ODP, looks forward to working across the agency to expand opportunities for leveraging university resources.

ANNEX I: USAID Title XII Programs

Title XII research activities are supported through the CRSPs, the CGIAR, and other research programs implemented by Title XII universities. While the CRSPs account for the highest percentage of Title XII program efforts in the Office of Agriculture, other U.S. Title XII university partnership programs, funded by other Agency operating units, also contribute to USAID's mission.

Collaborative Research Support Programs (CRSPs)

The CRSPs are consortiums of U.S. universities that mobilize scientific and academic expertise through long-term collaboration with institutions in developing countries. In FY 2008, there were 10 CRSPs, each led by a U.S. Title XII university that engaged other U.S. and international research and educational institutions through sub-grants. In FY2008, 60 U.S. universities participated in the CRSPs (Annex II), together with partner institutions in 61 countries (Annex III).

1. Aquaculture

<http://pdacrsp.oregonstate.edu/>

Lead: Oregon State University

The Aquaculture CRSP's goal is to enhance the development and sustainability of aquaculture production systems for improving food supplies and human nutrition on a long-term basis. FY 2008 was the final year of this CRSP and activities implemented during the year under a no-cost extension involved completing student degree programs. During 2008, 29 students (13 women and 16 men) completed their degrees.

2. Aquaculture & Fisheries (AquaFish)

<http://aquafishcrsp.oregonstate.edu>

Lead: Oregon State University

The AquaFish CRSP conducts applied research on critical aquaculture production constraints, disseminates best practices, and builds local capacity. This CRSP is developing more comprehensive, sustainable, ecologically and socially compatible, and economically viable aquaculture systems. FY 2008 was the first full year of activities under this new CRSP. One hundred and nineteen students (60 women and 59 men) received support from the CRSP. In addition, 649 individuals (217 women and 432 men) participated in various CRSP-sponsored workshops.

3. Assets and Market Access (AMA)

http://www.basis.wisc.edu/ama_crsp

Lead: University of Wisconsin

The AMA CRSP conducts research to improve agricultural competitiveness and to increase resilience of the rural poor. Current research includes smallholder participation in agricultural value chains (Peru, Nicaragua, Indonesia and Guatemala); idiosyncratic risk and coping mechanisms (Ghana, Ethiopia and Bangladesh); weather insurance and price information

(India); natural resource use as a pathway from poverty (Uganda and Malawi); and women's access to land (Liberia and Uganda). The CRSP is also undertaking pilot activities on area yield insurance for smallholders in Peru and a productive safety net using indexed insurance for pastoralists in northern Kenya.

4. Dry Grain Pulses

<http://pulsecrsp.msu.edu/>

Lead: Michigan State University

The Pulse CRSP (formerly the Bean/Cowpea CRSP) contributes to economic growth and food and nutrition security through knowledge and technology generation that strengthens pulse (*e.g.*, bean, cowpea, and pigeon pea) value chains and enhances the capacity and sustainability of agriculture research institutions which serve pulse sectors in the developing countries of Africa and Latin America.

5. Global Livestock

<http://glcrsp.ucdavis.edu/>

Lead: University of California, Davis

The Global Livestock CRSP undertakes research to strengthen the risk management skills of livestock producers and related institutions, increase employment and incomes among livestock producers, and enhance the nutritional status of targeted populations. The program has helped reduce conflict among pastoral communities, and developed and disseminated methods to diversify producer assets and to link producers to markets, rural finance, and public service delivery.

6. Integrated Pest Management (IPM)

http://www.oired.vt.edu/ipmcrsp/IPM_2008/draft_home.htm

Lead: Virginia Polytechnic Institute and State University

The IPM CRSP supports regional research programs in Africa, Asia, Eastern Europe, and Latin America to develop and promote the adoption of integrated pest management approaches that enhance food quality and quantity and protect the environment. The IPM CRSP also supports research on global themes including invasive species, insect-transmitted diseases, impact assessment, knowledge management, plant disease and insect pest diagnostics.

Currently the IPM CRSP is also implementing a three-year, EGAT-funded, associate award entitled, "Africa Food Security Initiative: Quality Food Production, Availability, and Marketing," that will run through 2011. The primary geographic focuses of this project are Mali and Senegal in West Africa and Uganda in East Africa, with research to enhance productivity of rice, maize and tomato. Insect and disease diagnostics, including disease problems of plantain, and trade standard harmonization will involve a broader set of countries across trade corridors in West and East Africa. About 65 percent of the effort will be on increasing crop productivity and 35 percent on alleviating trade bottlenecks.

7. Peanut

<http://168.29.148.65/home.cfm>

Lead: University of Georgia

The Peanut CRSP is centered on three major areas of the peanut value chain 1) producer values, 2) processor values and market expansion, and 3) consumer and social values. The primary goal is to make peanuts a better support food and tool for promoting economic development. In addition, benefits to the U.S. peanut industry are anticipated. A new five-year award for the Peanut CRSP began in 2008.

8. Soil Management

<http://tpss.hawaii.edu/sm-crsp/>

Lead: University of Hawaii at Manoa

The Soil Management CRSP ended on September 20, 2008. The program provided technical and administrative leadership in Africa, Asia and Latin America. Its research programs included the Carbon Sequestration Project, which assessed the potential of soil management technology for soil carbon sequestration and carbon trading in Mali, Senegal, and The Gambia.

9. Sorghum, Millet, and Other Grains (SMOG)

<http://intsormil.org/>

Lead: University of Nebraska

The SMOG CRSP undertakes research in 20 countries on critical production constraints associated with sorghum, millet, and other grains, disseminates best practices, and builds local capacity. Research focuses on food and feed processing and marketing; improved, adapted cultivar development; crop protection management improvements; sustainable agronomic management practices for different agro-ecologic zones; and improving the policy environment to support increased participation of the private sector in the entire value chain.

10. Sustainable Agriculture and Natural Resources Management (SANREM)

<http://www.oired.vt.edu/sanremcrsp/>

Lead: Virginia Polytechnic Institute and State University

The SANREM CRSP supports sustainable agriculture and natural resource management in developing countries by providing decision makers with appropriate data, knowledge, tools, and methods of analysis and by enhancing their capacity to make better decisions to improve livelihoods and the sustainability of natural resources. Program research uses a nested landscape systems approach that begins with field-level systems and builds through farm, enterprise, and watershed systems nested in broader ecological, governance and policy systems. Program activities develop, catalog and transfer technologies that generate income; enhance resource management; strengthen local institutions; and improve market access.

Other University Programs

The Advancing Afghan Agriculture Alliance (A-4)

<http://afghanistan.usaid.gov/en/Activity.4.aspx>

Lead: Purdue University

The A-4 program provides technical assistance to Afghanistan's Ministry of Agriculture and Kabul University. The technical assistance supports curriculum reform at Kabul University, builds linkages between the University and related ministries, expands the skills of professors, and strengthens agriculture extension and research activities of the Ministry of Agriculture.

The Agricultural Biotechnology Support Program (ABSP) II

<http://www.absp2.cornell.edu>

Lead: Cornell University

ABSP is a consortium of public- and private-sector institutions that supports scientists, regulators, extension workers, farmers and the general public in developing countries to make informed decisions about agricultural biotechnology. ABSP II focuses on the safe and effective development and commercialization of bio-engineered crops as a complement to traditional and organic agricultural approaches. The project helps boost food security, economic growth, nutrition and environmental quality in East and West Africa, Indonesia, India, Bangladesh and the Philippines. The consortium works collaboratively with the Program for Biosafety System and the South Asia Biosafety Program.

The Farmer-to-Farmer (FtF) Program

FtF program activities support the Global Food Security Response through volunteer work with host organizations to increase farming system productivity through higher yields, agricultural market chain efficiency (including reduction in post-harvest losses in processing and marketing), and employment generation in new agricultural enterprises. The program facilitates the integration of U.S. voluntary technical assistance into other USAID-funded agricultural programs, providing a people-to-people element of public diplomacy in our assistance programs. In FY 2008, the FtF program provided 589 volunteer assignments in 37 countries. Many of the volunteers come from Title XII universities.

The 589 volunteer assignments provided technical assistance services to 460 new host organizations, including: 181 farmer cooperatives and associations (40 percent); 101 individual private farmers (22 percent); 107 other private enterprises (23 percent); 25 NGOs (five percent); 19 educational institutions (four percent); eight rural financial institutions (two percent) and 19 public sector agencies (four percent). Volunteers provided direct formal training to 22,822 beneficiaries, 45 percent of whom were women.

The Food Security III Cooperative Agreement

<http://aec.msu.edu/fs2/fs2obj.htm>

Lead: Michigan State University

During 2008, this Leader Award was supported by \$300,000 in core funding from USAID's Bureau of Economic Growth, Agriculture and Trade. Thematic areas addressed during 2008 included agricultural technology and natural resource management; growth-enhancing food system and output market development; strategies to strengthen foundations of rural growth, poverty alleviation and structural transformation; understanding vulnerability and managing food aid for long-term development; and strengthening policy research, outreach, capacity building, and access to training materials. In 2008, associate awards were supported by USAID missions in Malawi, Mali, Mozambique and Zambia, and by the Africa Bureau.

The Higher Education for Development (HED) Program

<http://www.hedprogram.org>

HED supports the worldwide development goals of USAID primarily by coordinating the engagement of U.S. universities and colleges to address development challenges. HED does this by funding innovative partnerships that link the colleges and universities with institutions of higher learning in developing nations to design and implement solutions to development issues. It also holds roundtable discussions to engage the development community on development issues and publishes reports that highlight development news. Current active partnerships in the Agriculture/Agribusiness/Animal Science program area include the following:

- Title: *Building a Consortium of African-United States Educators (CAUSE)*
U.S. University: Oklahoma State University
Country: Ethiopia
- Title: *Strengthening Rural Agriculture Development*
U.S. University: South Carolina State University
Country: Burundi
- Title: *Strengthening the Capacity of East African Faculties of Agriculture to Improve Smallholder Productivity*
U.S. Universities: Ohio State University, Michigan State University
Country: Regional East Africa
- Title: *Delivering High Quality Academic Programming in Agribusiness*
U.S. University: University of Florida
Country: Haiti
- Title: *Increasing Institutional Capacity in Agricultural Economics*
U.S. University: University of Hawaii
Country: Albania
- An untitled partnership between Florida International University and Mexico's Centro de Investigaciones Interdisciplinarias para el Desarrollo Integral Regional focused on biodiversity and economic growth

The Partnership for Food Industry Development Programs

The Partnership for Food Industry Development is a set of joint university and technical assistance programs designed to strengthen food industries in host countries. These programs collaborate with public and private partners to increase the competitiveness of small and medium-scale producers in local, regional, and international markets in order to promote competitive participation in the global trading system and enhance economic growth in the host countries. There are three Partnership for Food Industry Development programs:

- Michigan State University's **Partnership for Food Industry Development - Fruits and Vegetables (PFID-F&V)** activities provide market-led strategies to increase competitiveness of small- and medium-scale producers of fruits and vegetables. PFID-F&V activities also expand the knowledge of trade practices, regulations, and standards around the world; encourage the identification of locations for processing and manufacturing operations in developing countries; and assist in opening markets for American products. (Program website: <http://www.pfid.msu.edu/>)
- Louisiana State University's **Partnership for Food Industry Development - Meat, Seafood and Poultry (PFID-MS&P)** provides market-led strategies to increase competitiveness of small and medium-scale producers of meat, seafood, and poultry. Through this activity, the PFID also expands knowledge of trade practices, regulations, and standards around the world; encourages the identification of locations for processing and manufacturing operations in developing countries; and assists in opening markets for American products. The partnership, which is now in Phase II, works in three target regions: Central America, Southern Africa and Eurasia/CIS, building on the Phase I accomplishments in post-harvest handling of animal-origin products. Phase II partners are the Cooperative League of the United States of America (CLUSA) in Nicaragua, University of Stellenbosch in South Africa, and International Institute for Food Safety and Quality in Ukraine. (Program website: www.lsuagcenter.com/en/administration/about_us/chancellors_office/International+Programs/Projects/partnership+for+food+industry+development/phase_2/)
- Rutgers University's **PFID-Natural Products (PFID-NP)** supports the creation of economically and environmentally sustainable growth in sub-Saharan African communities through the development of markets for natural products and natural foods. Program objective is to diversify the economy and raise rural incomes through development and market expansion of natural plant products for domestic and international markets. The program uses science-based methods for developing new, sustainable products, promotes local industry capacity for product development and marketing, and establishes or improves regulation systems for natural products. Core geographic areas include West Africa (Ghana and Senegal) and southern Africa (South Africa, Rwanda and Zambia). (Program website: <http://www.pfidnp.org>)

The Pastoral Engagement, Adaptation, and Capacity Enhancement (PEACE) Project

<http://afghanistan.usaid.gov/en/Activity.3.aspx>

Lead: University of California (UC-Davis)

PEACE enhances the capability of Afghans to develop the livestock sector and manage rangeland. Project components include a satellite-based early warning system that provides information on forage conditions for herders and rangeland decision makers; a livestock nutritional profiling system; a livestock information network and knowledge concerning the availability of market information; and pastoral conflict resolution and rural land tenure policy.

The Private and Community Forestry for Natural Resource Management Project

<http://afghanistan.usaid.gov/en/Activity.68.aspx>

Lead: Cornell University

Working with the Global Partnership for Afghanistan (GPFA), this program establishes private agro-forestry businesses and promotes community-based natural resource and watershed management. Activities include market research, developing farmers' business skills regarding the range of marketable tree and wood products they can produce, and studying the associated profit margin for marketable tree and wood products.

The Sustaining Partnerships to Enhance Rural Enterprise and Agribusiness Development (SPREAD) Program

www.iaa.msu.edu/project_spread.html

Lead: Michigan State University, Texas A&M University and National University of Rwanda

This program strengthens value-chain development in Rwanda to improve the lives of rural producers and their families. Its primary value-chain focus is on specialty coffee for export to the United States, Europe, Japan and other major markets. An additional value-chain focus of the program is horticulture exports.

Consultative Group on International Agricultural Research

The Consultative Group on International Agricultural Research (CGIAR) is a key multilateral partnership supporting agricultural and natural resources research to benefit low-income producers and consumers in the developing world. It is a global alliance of some 60 countries, international organizations and foundations that supports 15 international research centers generating technology, resource management practices and policies to serve the needs of smallholder farm, pastoral, forest-dwelling and fishing families in the developing world. The CGIAR brings the best agricultural and environmental science to bear on solving problems relating to food security, environmental conservation and climate change. Poor consumers are also targeted beneficiaries through increased food availability, nutritional quality and affordability and through improved environmental services such as access to clean water.

The United States helped found the CGIAR and has been supporting its programs and centers for over 35 years. USAID contributes to the CGIAR through funding for longer-term research from EGAT, as well as bilateral and regional project support from USAID missions and bureaus. In addition, hundreds of U.S. citizens occupy leadership, governance and research positions in the CGIAR system, contributing valuable knowledge and expertise to the search for solutions to problems faced by smallholders engaged in livelihoods related to farming, pastoral systems, fishing, and forest management.

From the earliest days of the Green Revolution, the CGIAR Centers have maintained close ties with U.S. universities, and these relationships have been critical to the success of CGIAR research. Currently, each center allocates eight percent of its annual USAID institutional core funding for collaboration with the U.S. research community.

ANNEX II:

Table: U.S. Universities Participating in Collaborative Research Support Programs during FY 2008.

	Collaborative Research Support Programs FY 2008									
	AMA	Aqua	AquaFish	DGP	GL	IPM	Peanut	SANREM	SM	SMOG
Auburn		○					○			
Clemson						○				
Columbia					○					
Cornell	○			○	○		○	○	○	
Florida A&M						○		○		
Fort Valley State						○				
Georgia Institute of Technology	○									
Georgia State	○									
Harvard University	○									
Idaho State					○					
Indiana University					○			○		
Iowa State				○	○			○		
Johns Hopkins	○									
Kansas State					○	○		○		○
Louisiana State			○							
Michigan State	○			●		○				
Montana State									○	
North Carolina A&T								○		
North Carolina State		○	○			○	○		○	
Ohio State		○				○				○
Oregon State		●	●							
Penn State				○	○	○		○		
Purdue	○	○	○		○	○	○			○
South Dakota State					○					
Syracuse	○				○					
Texas A&M					○		○	○	○	○
Texas Tech			○							
U. Alabama Birmingham							○			
U. Arizona		○	○			○				
U. Ark. Pine Bluff			○							
UC Berkeley	○				○			○		
UC Davis	○				●	○		○		
UC Los Angeles					○					

Collaborative Research Support Programs FY 2008										
	AMA	Aqua	AquaFish	DGP	GL	IPM	Peanut	SANREM	SM	SMOG
UC Riverside				○		○				
UC San Diego	○									
U. Colorado								○		
U. Connecticut							○	○		
U. Connecticut Avery Point			○							
U. Denver						○		○		
U. Florida						○	○		○	
U. Georgia		○				○	●			○
U. Hawaii – Hilo			○							
U. Hawaii – Manoa									●	
U. of Illinois at Urbana-Champaign				○						
U. Kentucky					○					
U. Michigan	○	○	○							
U. Missouri								○		
U. Minnesota						○				
U. Nebraska										●
U. Puerto Rico				○						
U. Rhode Island			○							
U. Vermont					○					
U. Wisconsin-Madison	●									
U. Wyoming					○					
Utah State					○					
Virginia State						○				
Virginia Tech			○			●	○	●	○	
Washington State						○				
West Texas A & M										○
Yale	○				○					
TOTAL	14	8	12	7	18	19	10	15	7	7
● Denotes lead university.										
List of abbreviations – AMA: Assets and Market Access; Aqua: Aquaculture; AquaFish: Aquaculture & Fisheries; DGP: Dry Grain Pulses; GL: Global Livestock; IPM: Integrated Pest Management; SANREM: Sustainable Agriculture and Natural Resource Management; SM: Soil Management; SMOG: Sorghum Millet and Other Grains.										

ANNEX III. Table: Countries in Title XII FY 2008 centrally funded programs

	Collaborative Research Support Programs										Partnerships for Food Industry Development			ABSP II	HED	
	AMA	Aq	A-F	DGP	GL	IPM	Peanut	SANREM	SM	SMOG	F&V	MSP	NP			
Afghanistan					•											
Albania						•										•
Angola				•												
Armenia												•				
Azerbaijan												•				
Bangladesh	•	•				•			•						•	
Bolivia							•	•	•							
Botswana						•				•						
Brazil							•		•							
Burkina Faso				•		•	•			•						
Burundi																•
Cambodia	•		•													
Cameroon																
China		•	•						•							
Colombia									•							
Costa Rica									•							
Dominican Rep						•										
Djibouti					•											
Ecuador				•		•		•	•							
El Salvador										•						
Eritrea										•						
Ethiopia	•				•	•				•						
The Gambia						•			•							
Ghana	•		•		•	•	•		•	•					•	
Guatemala	•					•										
Guinea						•										
Guyana			•				•									
Haiti				•			•									•
Honduras				•		•			•	•						
India	•					•					•				•	
Indonesia	•		•			•		•							•	
Jamaica						•										
Kenya	•	•	•	•	•	•	•	•	•	•						
Kyrgyzstan						•										
Laos									•							

	Collaborative Research Support Programs										Partnerships for Food Industry Development			ABSP II	HED
	AMA	Aq	A-F	DGP	GL	IPM	Peanut	SANREM	SM	SMOG	F&V	MSP	NP		
Liberia	•														
Malawi	•												•		
Mali				•	•	•	•		•	•				•	
Mexico		•	•					•	•						•
Moldova						•									
Mongolia					•										
Mozambique				•					•	•					
Nepal			•			•			•						
Nicaragua	•		•						•	•		•			
Niger				•						•					
Nigeria				•						•					
Panama									•						
Peru	•							•							
Philippines		•	•			•		•	•					•	
Rwanda				•										•	
Senegal				•		•	•		•	•				•	
South Africa						•				•		•	•		
Tajikistan						•									
Tanzania			•		•	•				•					
Thailand									•						
Timor-Leste									•						
Uganda	•			•	•	•	•	•	•	•				•	
Ukraine						•						•			
Uzbekistan						•									
Vietnam			•					•							
Zambia								•		•				•	

List of abbreviations – ABSP II: Agricultural Biotechnology Support Program II; AMA: Assets and Market Access; Aq: Aquaculture; A-F: Aquaculture & Fisheries; B/C: Bean/Cowpea; DGP: Dry Grain Pulses; F&V: Fruits and Vegetables; HED: Higher Education for Development; IPM: Integrated Pest Management; MSP: Meat, Seafood and Poultry; NP: Natural Products; SANREM: Sustainable Agriculture and Natural Resource Management; SM: Soil Management; SMOG: Sorghum Millet and Other Grains.