USAID
FROM THE AMERICAN PEOPLE

TITLE XII • REPORT TO CONGRESS • FISCAL YEAR 2004

STRENGTHENING AGRICULTURAL CAPABILITIES

APRIL 2006

AGRICULTURE encompasses the science and practice of activities related to the production, processing, marketing, distribution, utilization, and trade of food, feed, and fiber. It includes family and consumer sciences, nutrition, food science and engineering, agricultural economics and other social sciences, forestry, wildlife, fisheries, aquaculture, floriculture, veterinary medicine, and other environmental and natural resource sciences.

— Title XII of the Foreign Assistance Act of 1961 as amended

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EXECUTIVE SUMMARY

The U.S. Agency for International Development's (USAID) agricultural activities are guided by the priorities outlined in the Title XII legislation; the Agency's *Foreign Aid in the National Interest,* USAID's White Paper, *U.S. Foreign Aid: Meeting the Challenges of the Twenty-first Century;* the U.S. Action Plan on Food Security; respective bureaus' strategic frameworks; missions' strategy statements; and the Agency's Agriculture Strategy, *Linking Producers to Markets*. This report summarizes the implementation of Title XII of the Foreign Assistance Act, the Famine Prevention and Freedom from Hunger Improvement Act of 2000, by the Agency in FY 2004. It highlights activities of USAID and its Title XII partners as well as related agriculture and natural resource management activities that contribute to the implementation of Agency priorities.

In January 2004, USAID's White Paper, *U.S. Foreign Aid: Meeting the Challenges of the Twenty-first Century,* was released. The paper is about strategically reforming U.S. bilateral foreign aid, particularly the substantial portion administered by USAID. It clarifies the evolving role of U.S. foreign assistance in a rapidly changing global context and suggests ways to increase aid effectiveness and policy coherence through greater clarity of purpose, alignment of resources with objectives, and strategic management. Five core operational goals are identified: promoting transformational development, strengthening fragile states, providing humanitarian relief, supporting U.S. geostrategic interests, and mitigating global and transnational ills.

In July 2004, USAID launched its Agriculture Strategy, Linking Producers to Markets, which focuses on increasing agricultural sector productivity and smallholder participation in markets through four strategic themes—expanding trade opportunities and improving trade capacity; improving the social, economic, and environmental sustainability of agriculture; mobilizing science and technology and fostering capacity for innovation; and strengthening agricultural training, education, outreach, and adaptive research. The strategy renews the Agency's commitment to agricultural development and implements the White Paper goals in the technical areas of agriculture and natural resources management. In transformational development countries, programs will aim to help these countries become better partners by providing technical assistance and limited amounts of financial support. In fragile states, determinations of agricultural development programs will be based on their contributions to stabilization, recovery, and reform. For strategic states, agriculture programs will be consistent with foreign policy objectives and concerns, with resources programmed to either promote transformational development or contribute to overcoming fragility. In cases of chronic emergencies, humanitarian assistance will be structured to address systemic failures, while certain global or transnational issues that link to agricultural development, such as World Trade Organization negotiations or global climate change, will receive selective support.

This year's Title XII Report focuses on the role of USAID in strengthening agricultural capabilities to promote rural-led economic growth in developing countries. It summarizes the history of the Agency's engagement in education and training; identifies the accomplishments and lessons learned; sets out a new agenda; describes how the Agency's Agriculture Strategy builds on these lessons learned in its fourth strategic theme – Strengthening Agricultural Training and Education, Outreach, and Adaptive Research; and establishes the Agency's core program for strategic theme four over the next five years.

During FY 2004, USAID supported agricultural activities in over 50

countries and ten sub-regions to address global and regional strategic priorities. The Agency invested approximately $908 million in agriculture and related environmental activities that address Agency priorities. Agricultural programs were funded by the four regional bureaus (Africa, Asia and the Near East, Europe and Eurasia, and Latin America and the Caribbean) as well as two pillar bureaus, Economic Growth, Agriculture, and Trade (EGAT) and Democracy, Conflict, and Humanitarian Assistance (DCHA). Major implementing partners include the eight U.S. universities leading the Collaborative Research Support Programs (CRSPs), which mobilized the resources and expertise of more than 60 U.S. universities and their counterparts in developing countries; the International Fertilizer Development Center (IFDC); the sixteen members of the Consultative Group on International Agricultural Research (CGIAR); the members of the Collaborative Agricultural Biotechnology Initiative (CABIO); and the non-government organization partners implementing P.L. 480, Title II programs.

In FY 2004, the Economic Growth, Agriculture and Trade (EGAT) Bureau launched several new centrally funded programs, including the Africa Seeds Initiative; the Borlaug Leadership Enhancement in Agriculture Program (LEAP); and the Borlaug Women in Science Program. The BIFAD Long-Term Training Initiative identified three innovative long-term training pilots in East Africa (Tanzania, Uganda, and Kenya), Mali, and Zambia; and the management entities of two Collaborative Research Support Programs (CRSPs) were competitively bid (the Ecologically Based Participatory Integrated Pest Management CRSP and the Sustainable Agriculture and Natural Resources Management CRSP). Finally, the Agency commissioned a Horticulture Sector Development Assessment to identify researchable constraints to increasing production, reducing post-harvest losses, linking producers to markets, expanding local availability, improving environmental quality, and increasing farm household income and welfare in the horticulture sector.

Among the regional bureaus, the Asia and the Near East (ANE) Bureau manages one of USAID's largest agricultural programs. In 2004, most of ANE's resources were devoted to Iraq and Afghanistan. Programs in other ANE countries were designed to promote economic growth, help governments to strengthen governance, and increase agricultural activity and participation in markets. The Europe and Eurasia (E&E) Bureau focused on supporting reforms in transitional countries as well as providing assistance on small and medium enterprises, water sector reform, and such cross-cutting programs as conflict mitigation, job creation, and transboundary data sharing.

In the Latin America and the Caribbean (LAC) region, USAID's programs continued to focus on preparing for the implementation of bilateral free trade agreements, providing legal, policy, and administrative assistance and helping to develop products that LAC countries could export under the agreements. In Africa, the chief focus of the programs was implementation of the President's Initiative to End Hunger in Africa. The Democracy, Conflict and Humanitarian Assistance (DCHA) Bureau provided funding for agricultural initiatives through its Office of Foreign Disaster Assistance (OFDA) and its Office of Food for Peace (FFP), which administers the P.L. 480, Title II Food for Peace Development Program.

Over the next year, USAID will partner with transformational development countries committed to implementing policies that encourage greater agricultural productivity and sound natural resource management; investing in infrastructure that enables markets to work efficiently; building research institutions that ensure a flow of new and adapted technologies to producers and post-harvest enterprises; and supporting the expansion of effective training, education, and communication systems that provide producers and those in agribusiness—women and men—with information they need to be effective market participants. Over the next five years, USAID will continue to strengthen agricultural capabilities through long-term education and training, outreach, and adaptive research.

MARK ERBAUGH, IPM CRSP, OHIO STATE

Welcome to the Omatikipi Village, Uganda Farmers' Field Shool (FFS) study site! The IPM CRSP under contract with Ohio State University collaborates with Marekere University, Kampala and other institutions in Uganda trains farmers to be IPM experts in their own fields through FFSs.

STRENGTHENING AGRICULTURE CAPABILITIES

A fundamental lesson learned from over fifty years of USAID investments[1] in agriculture capacity building is that advances in the science and technology sectors benefiting agricultural growth[2] require ***transfer, application, and sustainability.*** This is largely achieved by changing the way people work, which impacts economic sectors, communities, regions, and beyond. To do this, USAID relies primarily on transferring ***knowledge, skills, and attitudes*** to individuals working in agricultural organizations – be they government ministries, local, regional and international agricultural research centers, universities, non-government organizations, producer associations, cooperatives, or private firms. The goal is to induce ***performance changes*** that will bring about long-lasting improvements in people's lives.

To better ***strengthen training and education***, the key mechanism for transferring science and technology, the ***tools*** available to induce positive change in target communities (such as the rural poor) must be sharpened. The typical tools used include the provision of U.S. technical assistance to projects and organizations overseas, counterpart training between U.S. specialists and developing-country colleagues, graduate degree programs in the U.S. and abroad ("long-term training") for young professionals, short-term training to upgrade skills and change attitudes, conference attendance, study-tours, and field days. The goal of the training is to promote sustainable ***performance improvements*** in institutions and organizations that in turn will make a measurable impact locally.

In some instances where USAID and its partners in developing countries succeeded in building viable and performing agricultural universities and research centers, advances vanished after a decade or two. Today USAID recognizes that ***good governance*** is a determining variable as to whether institutions and organizations continue to be effective over time, a factor largely overlooked in the past. Failed states brought down with them the precious institutions that many partners had worked diligently to build. Deficiencies internal to an organization led to its implosion even when the external environment was propitious. In these instances, the development interventions (training and education) may have been well designed, appropriate and results-oriented; but the internal and external political, economic, or social context in which these institutions and organizations functioned deteriorated. Without a minimum of ***good governance,*** no amount of capacity building could have conserved and sustained the assets.

Even with these setbacks, investments in education and training continue to be identified as one of the longest-lasting and highest-valued contributions of the United States to agricultural growth in developing countries since the 1950s. USAID built human capital in critical fields at government ministries, on farms, and in education and research organizations in both partner countries and the United States. USAID has spawned scientific and technological innovations that, when adopted, resulted in dramatic changes in agricultural production, vastly improving the lives of millions. Superior seed varieties adapted to agro-ecosystems often unknown in the United States led to a ***green revolution*** that enabled Asia to emerge from the plague of persistent famines. Innovative solutions discovered by U.S.-educated agricultural researchers, working in collaboration with

1 USAID was established in 1961. Prior to its creation, U.S. economic and technical assistance, including education, training, and institutional capacity building, was provided by its predecessor, the International Cooperation Agency.

2 Includes production, processing, marketing, distribution, utilization, and trade of food, feed, and fiber, family and consumer sciences, nutrition, food science and engineering, agricultural economics and other social sciences, forestry, wildlife, fisheries, aquaculture, floriculture, veterinary medicine, and other environmental and natural resource sciences.

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their U.S. counterparts, reduced the threats to crop yeilds including diseases, insects, and weeds; introduced new varietals with the potential for increasing yields; and improved tolerance to climatic shocks, resulting in increased production and improved quality. By investing in ***people*** working in vital public and private agricultural organizations and on the farm, USAID will continue to contribute directly to reducing food insecurity and improving economic growth in many parts of the world.

The primary focus of USAID's agricultural capacity building through the 1980s was investments in universities and research centers. A principal lesson learned by USAID is that investments to strengthen key agriculture-related institutions and organizations must reach ***beyond capacity building*** to ensure that ***improved performance*** transforms the lives of the rural poor, in particular, women and small producers. The most effective programs of the past, which also continue to yield changes today, went beyond building the capacity of agricultural scientists, researchers, and government officials. They carefully analyzed the ***environment*** of the target institutions and organizations and designed ***long-term linkages and support*** that leveraged USAID's investments to ensure sustainable impact.

BUILDING THE FOUNDATION

A pressing need after independence was to create viable, effective, and locally controlled national institutions capable of developing a strong agricultural sector upon which post colonial economies could grow. In many cases, significant segments of the agricultural sector required fundamental reform, resulting in shifts from investments in agriculture which favored export cash crops that benefited former colonists to food crops to meet rising internal demand. The focus of most of these early development efforts was clearly to jump-start these new nations with public institutions and organizations staffed with qualified scientists, teachers, and government officials who could take the lead and to motivate existing institutions and organizations to develop a culture of change and service.

USAID called on U.S. universities to manage the process of implementing activities to achieve the dual goals of building local capacity and of applying scientific methods to increase food production. These universities were leaders in agricultural education and research. Joint agreements between USAID and the U.S. universities and USAID and recipient countries outlined levels and types of assistance.

The first focus was on building local, site-sensitive agricultural capac-

ity through physical infrastructure development, graduate education ("participant training" or "long-term degree training"), and the provision of short- and long-term technical assistance. Linkage programs emerged between U.S. universities and nascent national agricultural research and education institutions. Sustained, long-term institution building ensued, with many of these linkages continuing to the present.

Building university capacity required assistance in designing curricula to support the burgeoning public organizations supporting agriculture (extension, veterinary science, engineering, policy, planning, etc.) with knowledgeable personnel. Entire undergraduate and graduate courses had to be developed for new universities and, for existing ones, old ways had to yield to new. Organizational structures needed to be designed and policies implemented for new institutes of higher education.

The transfer and application of scientific and technological methods and discoveries from the United States was the second focus. The United States harnessed the power of technology to advance as a major agricultural producer in only a few decades. Nothing appeared to prevent emerging countries from following a similar path to food self-sufficiency and export-led economic growth.

A third focus was increasing agricultural production. Daily reports in the mid-1950s of mass starvation in India and Pakistan led to redoubled efforts to increase food production. Farmers needed to learn about soil quality, pest eradication, and how to acquire and use fertilizers – no small task with weak to non-existent extension services, experimental farms, and local government agencies.

A key to early successes, as measured by increases in agricultural production, was the rapid development of government agencies, agricultural universities, and research centers. Ministries were expanded and staffed and local government service centers were established in states (provinces) and districts. Graduates from new universities moved directly into key positions where they applied their knowledge and skills. During this period, USAID also supported the development of National Agricultural Research Systems (NARS) in each country following the U.S. model of

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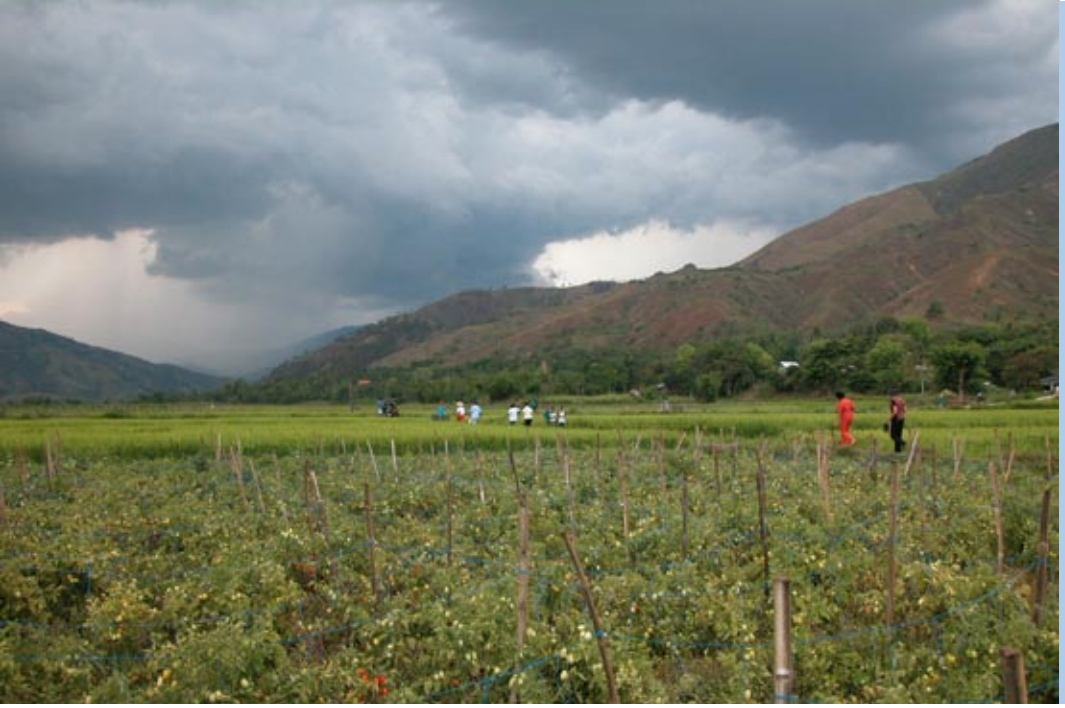


E. A. "SHORT" HEINRICHS, IPM CRSP

Tomato harvest time in Aritao Town, Nueva Vizcaya, Philippines. Tomatoes are grown in rice land and the field is surrounded by rice fields (light green). Viruses are a problem in this area and the farmers receive IPM training from the IPM CRSP/PhilRice-Philippines in collaboration with the Local Government Unit (LGU).

agricultural research and extension. The program was logical: support new nations as they took control of their agricultural sectors and education systems. Building indigenous capacity was the first step.

India illustrates what occurred in many of the countries assisted in the early years. In 1948 there were only 17 agricultural colleges in India and post-graduate research facilities were available to only 160 students. Following the recommendation of the University Education Commission in 1949 that the U.S. land grant model be adopted, the first Indo-American agreement set as a target the creation of an agricultural university for each state in India.

From 1955 to 1972, USAID helped India establish no fewer than eight agricultural universities, each led by a U.S. agricultural university. A total of 26 agricultural universities were established during this period, with funding from USAID, the Ford and Rockefeller Foundations, and other sources. The India agricultural university program borrowed heavily on the U.S. land grant university model that brought to one site the triple functions of agricultural research, teaching and extension – a novelty at the time in developing countries. Government agencies were encouraged to spin off responsibilities for research and extension to the new universities, although in many cases extension remained within the ministry.

The goal of these new state agricultural universities was ***to provide the well-trained manpower needed to give a sound scientific and technological base to India's agriculture in order to accelerate the pace of agricultural development and social transformation.*** The Indian model, following the U.S. land grant system model, embraced a broad view of "agriculture" that included veterinary science, home

Farmer graduates of the training workshop on "IPM in Rice-Vegetable Cropping Systems" in Aritao Town, Nueva Vizcaya Province, Philippines. Tomatoes are a major crop in this area.

E. A. "SHORT" HEINRICHS, IPM CRSP

economics, and engineering, in addition to such traditional fields as soil science, animal science, and agronomy. Universities adopted flexible grading and school-year systems, sought budgetary autonomy and diversification (state and national funding), and established "experiment stations" in different agro-climatic zones. Linkages were built with national agricultural research institutes, such as the Indian Council of Agricultural Research (ICAR) and U.S. universities.

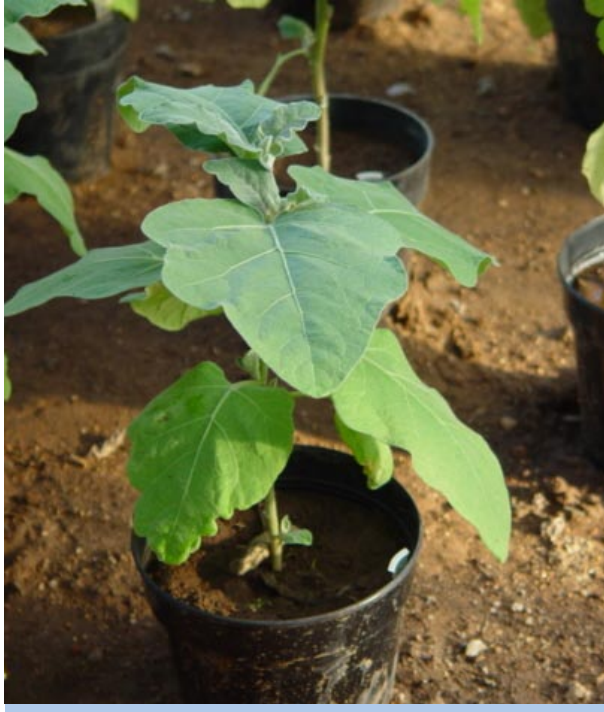
So much needed to be accomplished so quickly. Thousands of Indians received Masters of Science (M.S.) and Doctor of Philosophy (PhD) degrees at U.S. universities in order to staff these agricultural universities and to take charge of their country's rural development. It would take only two decades before India was producing a significant percentage of its own PhDs in agricultural sciences—a critical benchmark for self-reliance. Graduates found employment not only in government and the universities, but also in the expanding agricultural sector.

The U.S. land grant model laid the crucial foundation for India's extensive agricultural university and research infrastructure that has evolved over the last half century. Taking the lead from this highly decentralized approach where each state independently established agricultural facilities to support the development of the local economy, India adopted early on the radical principle that each state would have its own agricultural universities and research centers, an idea that ran counter to the centralized model of capacity building found in most developing countries.

USAID would apply the model by and large wherever it provided assistance for agriculture. Each country's circumstances—running the gamut from arid to rainforest, from island-nation (Indonesia) to mountainous republic (Ecuador)—dictated the particular mix of interventions.

EXPANDING THE FOUNDATION

By 1970 the results of two decades of capacity building were impressive. With the exception of food shortages due to external events (climate, war, migration), mass starvation of the kind witnessed in the 1950s had virtually disappeared. The agricultural universities and research cen-



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ters assisted during this early period played a critical role in generating significant increases in agricultural production in key countries to reverse the downward trend of food availability.

The "middle years" of USAID's investments in education and training saw the rise of new challenges largely unanticipated by the pioneers who helped jump-start agricultural education and training in the 1950s. No sooner had the successes of the early years been recognized than a new set of challenges appeared. These challenges were addressed with new development programs that significantly changed the scope of ***education and training*** assistance between 1970 and 1990:

- ***Moving from a focus on food production to health improvements and rural economic development***
  Rural poverty and nutrition gaps continued despite increases in food production. The many scientific advances epitomized by the "Green Revolution" were alone not sufficient to reduce poverty in rural areas or to improve health. Increasing the nutritional content of agricultural products required technical know-how far different from that needed to eradicate starvation. Economic growth emerged in the later years as the anticipated result of an improved agricultural sector. Multidisciplinary approaches to addressing these new challenges were instituted. Sociology, anthropology, political science, economics, nutrition, and ecology, to name a few, became part of agricultural curricula at universities as the pace of food production increases slowed and economic growth stagnated.

- ***Connecting the experts to the constraints in the field***
  Resource degradation emerged as a key challenge, and development practitioners sought to ensure a broader agricultural development

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perspective than yield enhancement. Natural resources management recognized that agriculture draws on the natural resource base and that the efficient management of resources on the farm and in the larger agro-ecosystem was essential to sustaining agricultural production.

- *Creating regional and international linkages with national agricultural universities and research centers*
  Although a number of effective international and regional agricultural organizations blossomed in the early years, they came of age during this period. Groups such as the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and the Consultative Group for International Agricultural Research (CGIAR) were either created or greatly expanded to assist the more isolated national agricultural universities and national agricultural research system (NARS) that now flourished in many countries.

- *Aligning site-specific technical constraints to innovative research programs*
  The Collaborative Research Support Program (CRSP) began in the mid-1970s and expanded from three programs in 1980 to nine by 1996. The program was established with the goal of building and strengthening the institutional capacity and human resource skills of agriculturally developing countries. Whereas in the early years science and technology were ***adapted and transferred*** to developing countries resulting in impressive yield increases, the CRSP worked with agricultural researchers in partner countries to provide technical solutions to identified in-country constraints.

Cowpea breeders in Burkina Faso.jpg

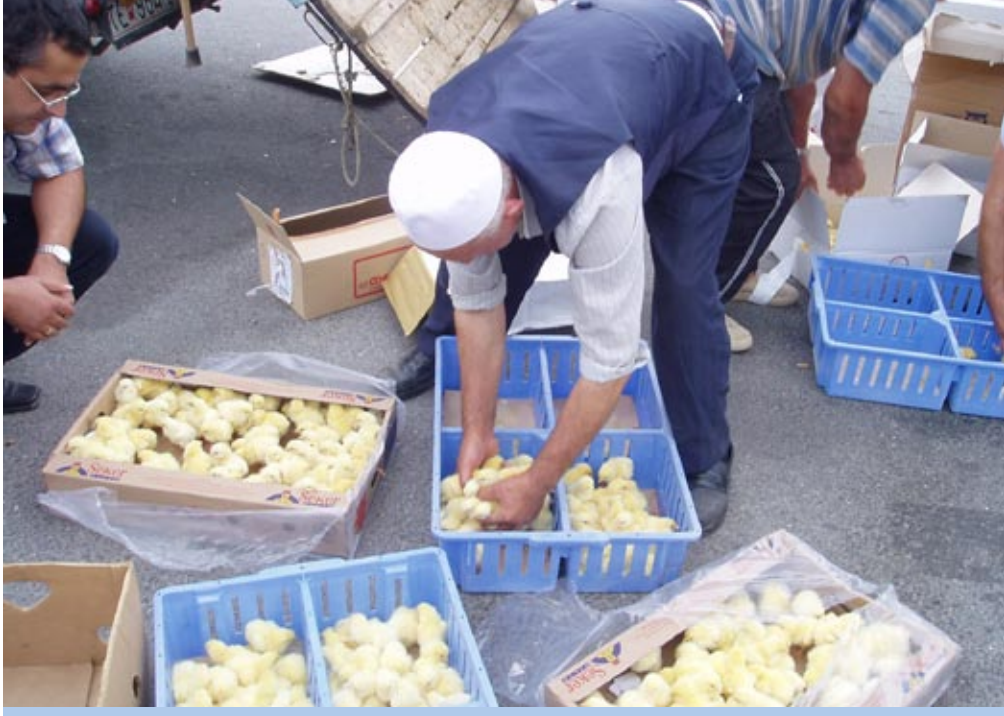
- *From increasing yields to ensuring sustainability*
  Achieving major increases in yields through the application of new inputs and the development of new seed varieties in the early years was praiseworthy, and many lives were saved. Introducing farming systems research responded to the recognition of the multiple factors affecting agricultural growth. There was also a question of how agricultural advances would or could be sustained when local conditions were altered. Sustainability became a critical challenge when some major agricultural advances encountered obstacles due to unforeseen events. Political and economic shocks such as Dutch disease (oil in Nigeria, Venezuela), political instability (Lebanon), and regime change (Afghanistan), all had a deleterious effect on agricultural production.

The new challenges resulted in a dramatic shift in education and training needs during this period. No longer did USAID invest in capital assets to build agricultural universities and research centers to the extent it had earlier. Instead, education and training programs switched to consolidating the gains and improving the impact of agriculture beyond food security to rural development, economic growth, and enhanced quality of life for all rural residents.

THE NEW AGENDA

Political and economic turbulence ***increased*** and took new forms during the 1990s. Agricultural universities and research centers assisted by USAID were barely keeping abreast of the broadening of "agriculture" and their role in the development of the agricultural sector. They became increasingly hard-pressed to navigate through many of the changes that structured the new development agenda, including:

- *The disappearance of the "Soviet" agricultural model* and the appearance of new nations without any experience in modern, market-led, farm-centered agricultural development.
- *The end of the Cold War* with the rise of democratic movements and a shift in development interest away from formerly "favored states" (Zaire, Somalia, Indonesia, Pakistan) to new regions (Eastern Europe, "Newly Independent States").
- *Failed states*, however caused (political upheaval to dislodge dictatorships, wars and invasions, new forms of genocide, incubators of terrorism), and a decline in agricultural production.
- *HIV/AIDS, tuberculosis, and malaria* and their soaring impact on agricultural production, institutional capacity and sustainability, and quality of rural life.
- *More scientific and technical changes* to grasp and integrate into agricultural education and training, outreach, and research (biodiversity, biotechnology, global warming, competition for scarce water resources, pressures on rural carrying capacities, soil depletion, disappearance of forest covers, emergence of organic farming, changing diets).
- *New stakeholders* playing major roles in agriculture (women, producers organizations, global trade advocacy groups, environmental non-government organizations, human rights groups, and decentralized local governments).
- *Alterations in global trade patterns*, with China, South Korea, Taiwan, Malaysia, Thailand, Brazil, Mexico, Chile and India becoming major producers and/or players in agricultural trade, competing with countries that had previously dominated agricultural trade.
- *The adoption of Millennium Development Goals (MDG)*, which set donor targets for results.
- *The significant decline in USAID funding for agriculture* from $625 million in 1992 to $244 million in 1997, which significantly reduced investments in education and training in the 1990s.



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LESSONS LEARNED

After five decades during which USAID and its predecessor, working primarily with university partners both in the United States and overseas, have been ***strengthening agriculture capabilities***, what are the lessons that can help guide future efforts to build institutional capacity and improve performance?

Before answering this question, it is important to ask what a ***model university*** would look like in an agricultural setting. A useful perspective to apply is to consider three "types" of agricultural universities:

- *Self-contained*, fulfilling an internal mission, such as to graduate qualified agricultural scientists for the nation (whether or not employable).
- *Responsive* to external pressures and the surrounding environment (whether friendly or hostile), which *force* it to change.
- *Actively shaping* the external (and internal) environment to achieve impact and improve performance.

According to some evaluations conducted between 1970 and 1990, most of the USAID-assisted universities fell into the first, least effective "self-contained" category. Despite U.S.-trained staff and resources (buildings, laboratories, research stations, budgets, vehicles, etc. – however plentiful or insufficient), the universities performed poorly in terms of ***results*** and impact on target populations. Some migrated to category two as they learned to ***respond*** to inexorable forces around them, willingly or not, in order to survive. Rarely did any university reach the ideal level where its performance was an integral part of the community it served, and its organizational direction and decision-making was ***derived from that stakeholder community***.

Any organization, be it a university or a corporation, that strives to move from category one to three, in any field, must spend time and resources on management and strategic planning. Its mission must be clear, its employees valued, and its customers at the center of the organization's mandate. These organizational concerns have largely escaped the attention of agricultural scientists and administrators, since a well performing organization is not the meat of science and technology. Yet more than any other factor, the lack of attention to organizational development in these universities has impeded their impact on rural communities.

The major lesson derived from this overarching finding is that the impact from investments in university capacity building has been lessened by inadequate attention to issues affecting an organization's performance. This does not take away from the major feats achieved by USAID and its university partners, especially during the early years, in building the foundation for expanding vital agricultural organizations, but it does point to how the Agency should proceed as it continues to work on strengthening agriculture capabilities.

The principal lessons learned are:

- Poor governance and "failed states" impeded the sustainability

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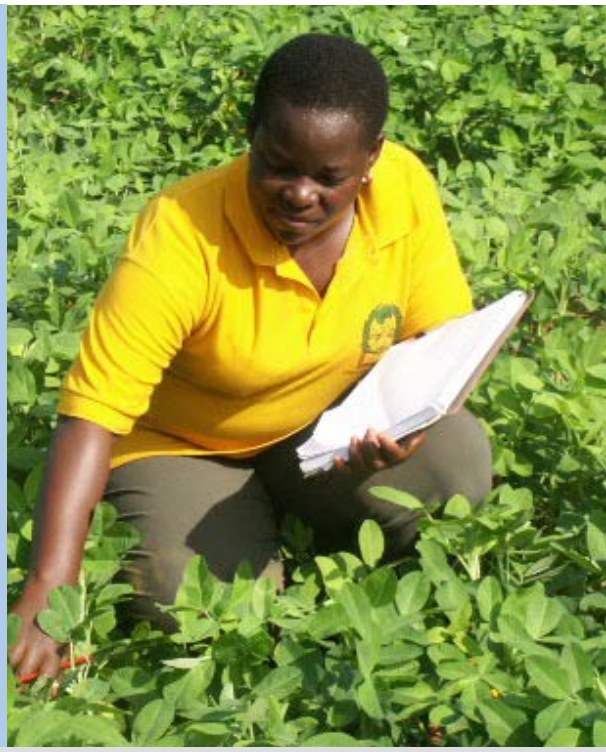

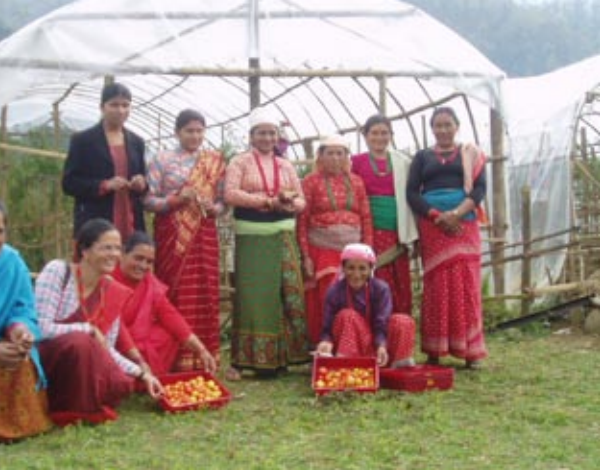

of agricultural organizations assisted by USAID. The political economy of a country was underestimated in resource allocation decisions.

- The working environment ***inside*** the organizations significantly hampered the growth, effectiveness, and sustainability of the organization. For example, lack of employee incentives was a major factor in reducing the likelihood of impact on rural communities by researchers and extension agents.
- The life cycle of the early projects to build national agricultural universities and other organizations was ten or twenty years. Since 1990, USAID views activity cycles in terms of five years. Building effective, performing organizations takes far longer than five years to produce viable and sustainable results.
- Once organizations were staffed up, they became inbred. In some instances this was due to isolation and lack of international opportunities; in others, the vagaries of political winds cut off donor funding.
- The shift in donor interest from public-sector to private-sector investments has had negative effects on public organizations that USAID had helped develop. These organizations were not sustainable because they had not created dynamic internal management systems that could mobilize alternative investments to sustain the work during years of deprivation or international isolation. The lack of attention to ***organizational development*** hampered the sustainability of universities and research institutes.
- The impact of U.S. degree training on developing countries was less complex in the early years (1950–1970) since most graduates returned to take up responsible positions in their home country. In the middle years (1970–1990)and later, U.S. trained specialists had to find employment outside their home countries to earn a livelihood because the demand for agricultural specialists dried up once the public-sector jobs were filled.
- The increased complexity of scientific and technological advances in agriculture over the last few decades makes it more difficult to ***transfer and apply*** these advances in developing country contexts because of the declining number of highly-trained scientists and technicians employed in local agricultural universities, research centers, and the private sector.

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STRENGTHENING AGRICULTURAL TRAINING AND EDUCATION, OUTREACH, AND ADAPTIVE RESEARCH

Over the past few years, there has been a renewed interest in investing in education, training, and building institutional capabilities for agricultural development. The World Bank recently began a new tertiary education initiative and calls attention to the important public goods (new knowledge and technology) that are produced by universities and made available to all members of society.

In 2000, the Rockefeller, Ford, Carnegie and MacArthur Foundations launched The Partnership for Higher Education in Africa. The foundations agreed to a ten-year time frame and to spending $100 million over the first five years to support universities pursuing reforms in Uganda, Tanzania, Mozambique, South Africa, Ghana, and Nigeria. That same year, USAID's Title XII Report to Congress, *Agriculture in the New Century,* introduced the Agency's Interim Agriculture Strategy, which included among its four themes "bridging the rural knowledge divide through training, outreach, and adaptive research at the local level".

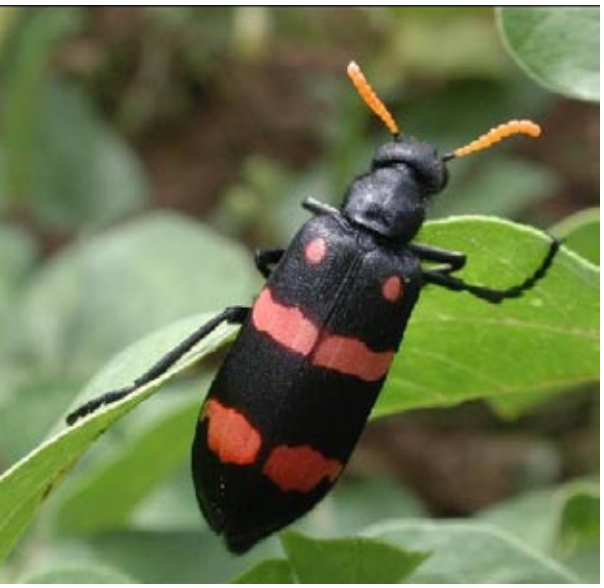
In 2003, the Board for International Food and Agricultural Development (BIFAD) released its report, *Renewing USAID Investment in Global Long-Term Training and Capacity Building in Agriculture and Rural Development.* The report, noting the retrenchment in education, training, and capacity building during the 1990s and the sharp decline of donor investments in higher education, particularly in agricultural training, recommended that USAID should re-engage and lead U.S. efforts to help developing countries increase their capabilities in agriculture and agribusiness. Specifically, BIFAD recommended the launching of a global training and capacity building program that builds on new models of education, training and capacity building in three African countries—Mali, Uganda, and Mozambique—and in several regional training centers in Africa and then scaling up the national and regional programs in future years.

In FY 2004, the Agency's Agriculture Strategy, *Linking Producers to Markets*, was launched (http://www.usaid.gov/our_work/agriculture). Of the four strategic themes, the fourth – to strengthen organizations and institutions affecting agriculture – is by and large the essential condition to inducing the changes sought in the other strategic themes. For instance, how can USAID expand trade opportunities, improve the sustainability of agriculture, and mobilize science and technology ***without*** collaborating closely with local, national and regional organizations and institutions? Likewise, ***outreach*** and ***adaptive research*** are essential for each of the themes in ensuring that advances made can be ***applied*** in the field ***and sustained*** over time.

The strategy states that ***good governance is an essential element of the enabling environment for science-based, market-led, sustainable agriculture***. As is illustrated by the experi-

ence of USAID to improve people's performance over the years, agricultural organizations and institutions function in dynamic environments deeply affected by governance, human rights, politics, national policies, and global economics. Today USAID is called to take into account this larger external environment in order to leverage results from its investments in agricultural institutions and organizations.

Including ***outreach*** in USAID's fourth theme recognizes the critical role, often overlooked, of ***dissemination and application*** of the fruits of scientific and technological discovery. Outreach programs, when effectively implemented, build in the essential ***two-way transfer*** of knowledge between researcher and end-user, without which the results of USAID investments can be compromised. Farmer-to-Farmer, farm field days, and community-based activities add new dimensions to the relationship between stakeholders.



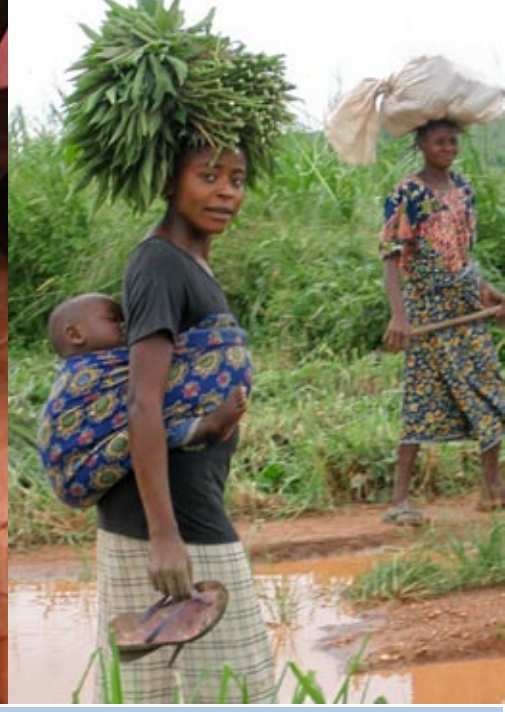
Closely allied with outreach, ***adaptive research*** defines a ***learning dynamic*** whereby research is driven, defined, and delivered from the outset with the intention that site-level agricultural change can occur with few encumbrances. USAID generally avoids funding research that principally benefits science, preferring to support research that produces outcomes which improve the lives of the poor, in particular, small producers, women, and rural dwellers. Both outreach and adaptive research depend on active communication and will rely on innovative applications of rural-based information technology, such as village radio and text-messaging via cell phones.

AN EXPANDED VISION OF EDUCATION AND TRAINING

In the early years, USAID paid scant attention to supporting agriculture in any venue outside universities, government ministries, and specialized research centers. With the focus on increasing food production through the application of scientific methods and capacity building at the graduate level, USAID did not target a country's school children in implementing its agricultural objectives.

In fact, the agriculture sector was viewed at the time as an economic sector separate from the social sectors of ***education*** and ***health***. The broader U.S. land grant extension model of 4-H and Homemakers Clubs targeting rural primary and secondary school children and women was not a component of USAID capacity building. Little cross-over was considered in designing programs or even imagined in development circles. What appears obvious in hindsight, such as the links between quality food production and nutrition (agriculture and health), were viewed as distinct development turfs. As agriculture broadened between 1970 and 1990 to include disciplines such as sociology, anthropology, information sciences, and biotechnology, and as stakeholders multiplied, how agriculture was introduced in a country's school system took on a new importance. A number of USAID agricultural programs have since been designed and implemented with the involvement of primary and secondary education specialists.

Vocational and technical education received some attention in the early years if the linkages to agricultural production were established. Other donors, in particular the World Bank and German development agencies, invested heavily in building capacity in vocational and technical training throughout the world. The results from the massive investments in this area have been disappointing, according to evaluations over the years. Vocational centers tended to become inward-looking, with the sole goal of providing young people with traditional "skills" unneeded in the evolving labor market. Beset by myopia and rigidity, the vocational-technical centers declined rapidly in many countries as soon as donor dollars dried up. In contrast to the rigidity of the public sector's voca-

Three different cowpea stories.

tional centers, the private sector responded quickly to market demands for skilled workers (whether in agriculture, health or the trades), establishing viable and sustainable technical training organizations whose graduates found employment in growing economies.

OUTREACH

Although the term ***outreach*** was not in vogue before the current period, today USAID uses it to embrace the more traditional concept of ***extension*** plus less formal activities such as "Farmer Field Days" and civil society organizations' awareness-raising activities. This broader conceptualization of extension allows for activities that create a ***conducive environment*** in which technology and ideas can be disseminated, considered, understood, and applied by a variety of actors working in and for agriculture and rural development.

Outreach focuses on the rural environment within which improvements can be tried, altered, rejected, disseminated to others, and evaluated. Outreach is concerned with livelihoods of rural residents, farm families as well as the farmers themselves. Outreach programs use networks of volunteers (both from the U.S. and developing countries) to ***transfer knowledge*** to individuals working in non-governmental organizations, community-based organizations, cooperatives, government agencies, and businesses. In essence, outreach programs fill a gap often left by more traditional ***training and education*** programs such as extension. They rely on non-formal structures within communities to induce change, strengthen organizations often beyond the reach of more formal agricultural organizations such as extension, and build networks that can sustain the information flow between rural residents and others.

This is not to suggest that extension services have not evolved. Traditional extension is often characterized as institutionally monolithic, centrally directed, "top-down" in approach and hierarchical. While most extension services have become "people centered", with an increasingly diverse array of partners, this characterization continues. Extension services have overwhelmingly been the domain of the public sector, one of the few components of education and training in many countries that the early agricultural universities were unable to wrest away from the government. Some have since been privatized and func-

tion with less or no public monies. Others have evolved to provide a broad array of services in contrast to the production focus of earlier years. A diverse range of rural residents, from producers to women who work in the market to microenterprises, are now able to access information from extension services. Extension specialists work in close proximity with these stakeholders to learn from them as well.

The Farmer-to-Farmer Program (FtF) is an example of USAID's commitment to outreach. When the current FtF program was authorized by Congress in 1985, its objective was to transfer knowledge and expertise to developing countries ***on a people-to-people basis*** in order to reduce poverty and hunger and promote peace and prosperity in developing and transitioning countries. The concept and program of "farmer-to-farmer" began in 1966 and has long been associated with what today are called "outreach" activities.

As the definition of agriculture has broadened to include ***rural development*** and subsequently ***food, feed, and fiber***, and further to embrace the livelihoods of rural smallholders and women, the non-formal approaches to ***strengthening capacity*** have taken on new meaning and urgency. Today, extension and outreach are virtually synonymous.

ADAPTIVE RESEARCH

The third component of USAID's fourth Strategic Theme, adaptive research, refers to following a line of investigation that is driven entirely by the needs of the end user. Adaptive research requires agricultural specialists to employ ***active listening*** and work in close proximity with producers and other agricultural stakeholders (women, business, water managers, government officials, etc.) to discern the local specificity of a constraint. Researchers then seek to identify solutions. In some cases, an existing technology can be adapted, such as a tractor attachment re-tooled to be pulled by oxen; in other cases, a new technology is invented, such as bicycle-powered well pumps, to resolve a locally-identified constraint to improving agricultural production in a sustainable and appropriate way.

Research conducted under USAID auspices by agricultural universities in the early years would today be characterized as "traditional." At the time the U.S. land grant universities began institution building with USAID, few developing country universities had ***research stations*** and fewer local authorities understood their utility. Nonetheless, many of the newly emerging agricultural universities adopted the concept, innovative at the time, building the bridge between scientific and technological research and application on farms. The notion that research ***had to be applied*** took root, and research stations became part and parcel of a functioning, effective agricultural university.

The earlier investments raised questions about the utility of the research being conducted, particularly if it was primarily intended to increase yields through the transfer of technology from abroad. These years saw a marked increase in interest and fund-

ing for the Collaborative Research Support Programs (CRSPs), which were intended to undertake research that was appropriate and applicable. Research became linked to end users in a new way, through direct engagement of host country researchers on in-country agricultural constraints. The CRSP network also strengthened agricultural research centers by providing U.S. education and training to researchers.

Despite the evolution of the role of research in the transfer and application of technology in the middle years, evaluations conducted in 1989 bemoaned the continued support to research linked to increasing agricultural production. Some national universities had become rigid to external changes, ingrown in their management style, and immune to the needs of the surrounding rural communities. Changing the ***raison d'etre*** that had driven research and researchers for decades proved too burdensome for many. By 1990, complaints were mounting that traditional research was ignoring vital, new cross-disciplinary fields, such as anthropology, nutrition, gender, and the environment.

With the Agency's new Agriculture Strategy, USAID is favoring ***adaptive research*** that promotes the use of technology to improve the quality of life for the rural poor. This broader objective forces upstream decisions that fundamentally alter the way research is conducted. Simply being located at a research station does not ensure that technological solutions are being applied locally.

FUTURE DIRECTIONS

The new strategy commits to working with countries who are committed to building research institutes that ensure a flow of new and adapted technologies to producers and post-harvest enterprises and to supporting the expansion of effective training, education, and communication systems that provide producers and those in agribusiness—women and men—with information they need to be effective market participants. In particular, USAID will support education and training tailored to reach women and girls; develop and extend innovative rural information and communication technology systems; and improve problem-based, site-specific learning approaches. The Agency will also work to ensure that the small producers receive training and support services necessary to fully participate in the agricultural sector.

Over the next five years the Agency will renew its leadership in strengthening agriculture capabilities through:

- Education and training
- Outreach
- Adaptive research

EDUCATION AND TRAINING

- Implement the Initiative on Long-Term Training and Capacity Building which in FY 2004 piloted two projects to develop and test new approaches to long-term training and institutional capacity strengthening.

  The first project, Long-Term Training for Regional Agricultural Development in East Africa, administered by Ohio State University in collaboration with Michigan State University, is designed to strengthen faculties of agriculture to improve smallholder productivity (that is, increase smallholders' returns to production) through a combination of long-term degree training and short-term staff development activities. The project has partnered with the Regional Universities Forum for Capacity Building in Agriculture (FORUM), a member of the Higher Education Partnerships for African Development (HEPAD). Scholarships for graduate work in U.S. universities will be made available to staff at faculties of agriculture or currently enrolled students who have been identified as potential future staff members by the Dean. Those identified for scholarships will train under one of two programs. The first

caption

group will take courses and develop their research proposal at U.S. universities before returning to do home-country research and thesis preparation. Students in this program will receive their degrees from their home institution. Students in the second program will be enrolled and receive degrees from a U.S. university with research and thesis preparation being completed in home country. This project is being piloted in East Africa at Makerere University, Uganda; Egerton University, Kenya; and Sokoine University, Tanzania.

The second project, Linking Biotechnology/Bioengineering with Agribusiness: Quality Control for Health, Safety, and Exports, is an institutional capacity building project administered by Montana State University. This project uses a "sandwich" approach to long-term training of mid-career scientists. The first year develops a customized training program for each participant, followed by training at U.S. universities in year two, and, in year three, participants return to their home organizations to undertake expanded laboratory projects and dissemination programs to integrate farmer-to-farmer technologies with ongoing research and teaching. This project is being piloted in Mali.

A third project, administered by Michigan State University, is designed to (1) provide opportunities for host country organizations (public and private) to build their capacity in research, production, trade policy, training, management, and outreach to promote greater agriculture-led economic growth and natural resources management;

(2) lead to Master of Science degrees (trainees) from U.S. universities for candidates from selected organizations, and (3) include in-country short-term group training activities in areas that are aligned with USAID missions' strategic objectives for trainees and their home institutions' organizational leaders and staff who work with the trainee. Types of academic programs under which a student will be trained include agribusiness management, food system management, food science and technology, agriculture related policy, marketing, and international trade. This model will be piloted in Zambia and Ghana in FY 2005.

- Collaborate with USDA on the Norman E. Borlaug International Agriculture Science and Technology Fellows Program, launched in FY 2004. The Program offers training and collaborative research opportunities through exchanges in any field related to agriculture production, processing and marketing that supports global food security and trade. The Program also addresses policy and infrastructure obstacles to the adoption of technology. The fellowships provide promising scientists, policymakers, researchers and university faculty in the early stages of their careers with an opportunity to work closely with a U.S. or international mentor at a host institution in their field of agricultural science or policy.

USAID supports the Borlaug Program through two activities:

The Borlaug Leadership Enhancement in Agriculture Program (LEAP) is a fellowship program to enhance the quality of thesis research of graduate students from developing countries who show strong promise as leaders in the field of agriculture and related disciplines. The LEAP program supports engaging a mentor at a Consultative Group on International Agricultural Research (CGIAR) system center to support and enhance the thesis research and mentoring experience. Emphasis is placed on work that has relevance to the national development of the student's home country. The objectives of this program are to train young scientists to address current and emerging technology issues, to target topics relevant to development priorities, to help strengthen national agricultural research centers and universities, and to enable students from developing countries to access the vast knowledge and expertise of the CGIAR system. The LEAP Fellowship Program is to be launched in FY 2005.

Borlaug Women in Science Program (WIS) is a fellowship program to develop women leaders in agricultural science and develop technology to increase the productivity of women subsistence producers. The objective of the program is to (1) provide female scientists with an opportunity to work one-on-one with U.S. experts in fields of agricultural and natural resources at a U.S. research center, (2) to enable these scientists to apply the knowledge gained from this experience in their own research programs and to further their country's agricultural and natural resources development, (3) provide leadership skills training to empower women in higher learning and government positions related to the agricultural sciences to become advocates for policies and programs that benefit women producers; and (4) to promote increased collaboration and networking between women scientists in developing countries and U.S. scientists. The WIS program will be launched in West Africa in FY 2005.

Training of Genesis group loan clients on how credit reporting system works. This training session was part of the BASIS project "Credit-reporting Bureaus and the Deepening of Financial Services for the Rural Poor in Latin America". The goal of this session was to help borrowers understand how information is used by a credit reporting system to help them build a reputation which would allow them access to more funds, and different lenders. These women are all part of a group lending program run by Genesis Empresarial. Guatemala, February 2004.

- Increase the impact of the capacity building and institutional strengthening component of the Collaborative Research Support Programs. USAID anticipates renewed emphasis in this area of the CRSP programs' portfolios. It is expected that the programs will incorporate a variety of approaches for building capacity including sandwich training (training split between U.S. university and home institution) for host country graduate students, distance learning, web-boards or other communications technologies and communities of practice that link researchers with development practitioners struggling with similar topics. It is also anticipated that these programs will identify other innovative applications that enhance the skills of local scientists, universities, and research institutes.

OUTREACH

- Provide voluntary technical assistance to producers, producers groups, and agribusinesses in developing and transitional countries to promote sustainable improvements in food processing, production, and marketing through the John Ogonowski Farmer-to-Farmer Program. The program relies on the expertise of volunteers from U.S. farms, land grant universities, cooperatives, private agribusinesses, and nonprofit farm organizations to respond to the local needs of host-country farmers and organizations.

- Continue support to the International Fertilizer Development Center including its work on agribusiness development using the Competitive Agricultural Systems and Enterprises (CASE) approach. This approach is based on empowerment and competitiveness – an approach that strengthens the capacities of rural populations (farmers and local entrepreneurs) to innovate technically and to lobby and network for their own future and works to integrate farmers and local entrepreneurs in supply value chains.

ADAPTIVE RESEARCH

- Continue support to the Consultative Group on International Agricultural Research (CGIAR) centers and to U.S. university research programs including the Collaborative Research Support Program (CRSP) and the Agriculture Biotechnology Support Project (ABSP) to work on adopting technologies to locational agricultural development constraints. It is expected that research programs will target collaborative arrangements that strengthen systems for adoption of tools and practices. To be effective, these collaborative arrangements need to be initiated as individual research activities that are conceptualized to include stakeholder perspectives as the research agenda is developed. Collaborating partners will provide on-going feedback on the research while connecting scientists to end users.

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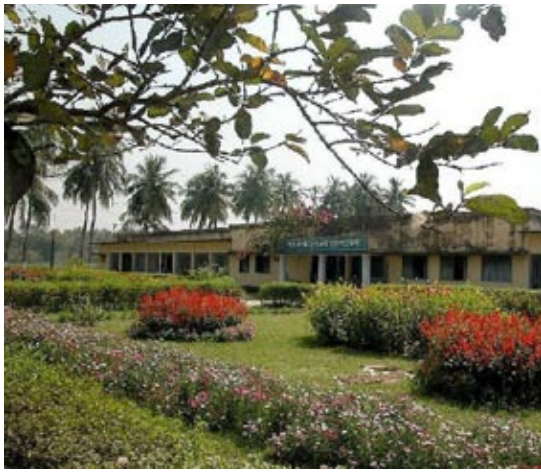
Bangladesh Site Coordinator, A.N.M.R. Karim seen in a farmers' field in Gaidghat Village, is standing next to pheromone trap which attracts and traps the fruit fly, Bactrocera cucurbitae, a serious pest of brinjal (eggplant). The pheromone trap is a safe and effective algternative to the use of insecticides to control the fruit fly.

BARI regional station, Jessore



ANNEX ONE

BIFAD REPORT: ACTIVITIES AND RECOMMENDATIONS

BIFAD was created in 1975 under Title XII—"Famine Prevention and Freedom from Hunger"—of the Foreign Assistance Act, as amended (most recently in 2000). Its primary role is to advise the USAID Administrator on global agricultural development priorities and issues, help implement the official U.S. foreign assistance program, and monitor Title XII activities. BIFAD works to strengthen the relationship between USAID, U.S. universities, and the private sector in order to mobilize the resources needed for developing and applying agricultural science to sustainably improve agricultural sector productivity and to link producers to markets.

- *www.usaid.gov/our_work/agriculture/bifad*

The seven members of BIFAD are appointed by the President to advise and assist USAID's Administrator. At least four members must be from the U.S. university community, to help build and maintain communication between university researchers and the development community.

To carry out its mandate, in past years BIFAD has drawn on the efforts of its working subcommittee, the Strategic Partnership for Agricultural Research and Education (SPARE). SPARE brings together leaders from the university community and highly experienced USAID professionals. FY 2004 was a transition period for SPARE, and the subcommittee did not meet. BIFAD approved the revision of the SPARE Charter, expanding its membership, broadening its purview, and aligning the Charter with the 2000 Title XII amendment.

During FY 2004 BIFAD held three meetings (the 139th through the 141st), in October 2003 (139th), February 2004 (140th) and May 2004 (141st). The main issues that BIFAD addressed in FY 2004 were:

- *CRSP recompetition.* One of the results of SPARE's subsector reviews in FY 2003[1] was BIFAD's recommendation that the university management entity for each Collaborative Research Support Program (CRSP) be openly competed every 10 years. The open competition will give USAID's U.S. university partners the chance to offer new approaches and different visions for addressing agricultural development constraints through the CRSP mechanism. Two CRSPs—Sustainable Agriculture and Natural Resources Management (SANREM) and Integrated Pest Management (IPM) —were the first to be recompeted.[2]
- *A new channel for USAID mission buy-in.* The CRSP recompetition also pilots the use of USAID's Leader with Associate (LWA) procurement mechanism. The mechanism allows the leader (CRSP management entity) to craft subcontracts (associate awards) with USAID bureaus and field missions who want to access the technical expertise and research capacity of the CRSP with minimal paperwork. BIFAD and the CRSP Management Entities also engaged in intense discussions of the merits of using cooperative agreements rather than grants as the Leader Award; the two mechanisms offer different degrees of CRSP flexibility and USAID engagement. The LWA cooperative agreement mechanism is being pilot-tested to assess its effectiveness in attracting mission and bureau buy-ins.

1. For further information on the SPARE subsector reviews of sustainable agriculture, aquaculture and fisheries, and integrated pest management, see the FY 2003 Title XII Report to Congress, *Mobilizing Science and Technology for Smallholders.*

2. For more information about the new CRSP programs, see Annex Four of this Report, *"New Centrally Funded Agriculture Activities".*

- *Assessments for the BIFAD Long-Term Training Initiative.* After a number of years of declining support for master's and doctoral degree training and short-term professional training in agriculture, USAID's Bureau for Economic Growth, Agriculture, and Trade (EGAT), Office of Agriculture (AG) has lead responsibility for implementing BIFAD's recommendations to reinvest in this critical area of capacity building for development. With funding from the Africa Bureau's Initiative to End Hunger in Africa (IEHA) and EGAT, the Office worked with BIFAD to organize and send assessment teams to the East Africa region, Mali, and Mozambique to identify higher education deficiencies in the agriculture sector.

The East Africa Region (Kenya, Tanzania, Uganda) Assessment: The BIFAD assessment team, composed of two consultants from World Learning, visited university schools of agriculture to identify training and capacity-building deficiencies. Faculty who earned PhDs under USAID training programs in the 1970s and 1980s are now retiring, often to be replaced by holders of master's degrees who have few connections with U.S. universities. HIV/AIDS is a grave concern. Not only are faculty and staff themselves dying, but so have 20 percent of the schools' graduates, depleting the region's technical expertise in the agricultural sector. Courses are taught using outdated curricula, and low budgets for information technology constrain both faculty and student access to current knowledge.

The Mali Assessment: The BIFAD assessment team, composed of one BIFAD member, two American consultants from the Academy for Educational Development, and two high-level Malians, was able to interview a variety of stakeholders, including many Malian government officials; staff from the major Malian units involved in teaching, research, and extension; and representatives from the private sector. The team also held a stakeholders forum with about 50 people from the same groups. The team identified biotechnology and irrigation/water resources as critical gaps that should be high on the list of training priorities.

The Mozambique Assessment: This four-person assessment team, which included one BIFAD member and two American consultants from Development Associates, sought to align its assessment with the USAID mission strategy and the outcomes of local stakeholder consultations. The stakeholder group urged that special attention be given to making sure the team's recommendations apply to the realities of Mozambique, where scarcely any agricultural inputs are supplied by the private sector and very few people have pursued advanced studies in agriculture. In the government research agency, for example, only four to five percent of the staff has master's or PhD degrees. Communication among technical personnel in farm extension, agricultural research, and nongovernmental organizations (NGOs) is limited; a more formal mechanism for sharing research results is needed.

General Recommendations from the BIFAD Assessments

- Programs should consider "sandwich"-style training options, where students alternate between study in the United States and field research in Africa, supplemented by summer school courses given by U.S. professors in Africa.
- Distance learning is a possibility but Internet access is not good enough at most African universities to make it practical at present. CD-ROM-based classes might help.
- USAID should leverage its funds by coordinating its efforts with training programs funded by the Rockefeller Foundation and other initiatives.
- EGAT, the Agency Bureau implementing the BIFAD Long-Term Training Initiative, should seek additional funding via mission buy-ins, non-government

organizations (NGOs), the National Science Foundation, and the Millennium Challenge Account.

– With the older generation of Africanists retiring, young U.S. faculty members should be encouraged to get involved in Africa.

Following the submission of the assessment team reports, EGAT/AG, working with the Association Liaison Office for University Cooperation and Development (ALO), issued Requests for Assistance (RFAs) for the design and implementation of pilot programs for Mali and the East Africa region (the Mozambique mission decided not to participate in the pilot program). Ohio State University, in partnership with Michigan State University, is piloting the Long-Term Training for Regional Agricultural Development Project in East Africa. Montana State University is piloting the Linking Biotechnology/Bioengineering with Mali-based Agribusiness and Quality Control for Health, Safety, and Exports Project in Mali.[3]

3. Further information about BIFAD's Long-Term Training Initiative pilot projects can be found in Annex Four of this Report, "New Activities".

BIFAD MEMBERS FY 2004

M. Peter McPherson, *Chair*
President, Michigan State University

Mike Deegan
Former President and CEO, ACDI/VOCA

Stewart Iverson, Jr.
Majority Leader, Iowa State Senate, and farmer

Anthony Laos
President and General Manager, Stauffer Seeds

William DeLauder
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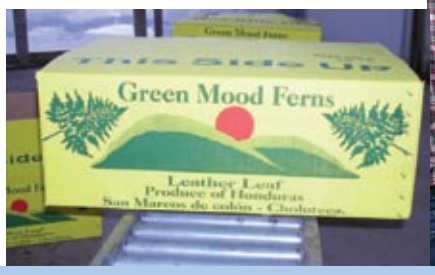


The Fern Story

ANNEX TWO

AGENCY PROGRAMS AND FY 2004 OBLIGATIONS

NEW AGRICULTURE STRATEGY

In July 2004 the Administrator approved the Agency's new agriculture strategy, ***Linking Producers to Markets (www.usaid.gov/our_work/agriculture)***. The strategy sets out how USAID and its partners will, in the coming years, address the challenges of food insecurity, rural poverty, weak markets, and natural resource degradation, which constrain agriculture-led economic growth.

The strategy recognizes agriculture's key connections to other sectors, including environment, education, health and nutrition, economics, governance, and infrastructure. It reflects USAID's awareness of the central role of gender in production, agricultural enterprises, and trade. The strategy has four themes:

- Expanding trade opportunities and improving the trade capacity of producers and rural industries,
- Improving the social, economic and environmental sustainability of agriculture,
- Mobilizing science and technology and fostering capacity for innovation, and
- Strengthening agricultural training and education, outreach, and adaptive research.

Implementation of the strategy by Agency operating units is country specific and will be structured by local conditions and Agency guidance on each country's development potential—high-potential "transformational development," fragile, of strategic interest, or with significant humanitarian needs. In addition to country conditions, agriculture programs will need to address pertinent transnational issues such as HIV/AIDS, global climate change, biodiversity, and implementation of trade agreement obligations under the World Trade Organization (WTO) and the various free trade agreements between Latin American, Caribbean, and African countries and the United States.

AGRICULTURE OBLIGATIONS

USAID supports agriculture activities in over 50 countries and 10 subregions through its regional bureaus for Africa (AFR), Asia and the Near East (ANE), Europe and Eurasia (E&E), and Latin America and the Caribbean (LAC); through individual national and regional (field) missions; and through Washington, D.C.-based offices located within the Bureau for Economic Growth, Agriculture and Trade (EGAT) and the Bureau for Democracy, Conflict, and Humanitarian Assistance (DCHA). Washington-based agriculture programs are summarized below. New activities, Presidential initiatives, and key accomplishments are summarized in Annexes 4, 5, and 6.

Approximately $908.8 million was invested in agriculture activities in FY 2004 to address the goals set out within the strategic objectives (SOs) of USAID's field missions, regional bureaus, and pillar bureaus of EGAT and DCHA. In Africa, additional objectives were identified for focus countries and regional platforms under the President's Initiative to End Hunger in Africa (IEHA).

Following the guidance set out in the 1961 Foreign Assistance Act (as amended), funding for FY 2004 programs was distributed through the following:

- Development Assistance Account (DA)
- Economic Support Fund (ESF)
- Food for Peace Title II (P.L. 480)
- International Disaster and Famine Assistance
- Assistance to Eastern Europe and the Baltic States (AEEB)
- Assistance to Independent States

of the Former Soviet Union (Freedom Support Act, FSA)

- Andean Counter-drug Initiative (ACI)

For the first time the aggregate table on Agency agriculture obligations (Table 1) includes Title II (P.L. 480) development and International Disaster and Famine Assistance (IDFA) funds in the total for FY 2002, FY 2003, and FY 2004. In FY 2002, approximately 56 percent of agriculture obligations were funded from Title II development and IDFA; in FY 2004, these two funds channeled approximately 32 percent of all agriculture obligations.

EGAT • ECONOMIC GROWTH, AGRICULTURE AND TRADE BUREAU

The EGAT Bureau, which is dedicated to reducing poverty and promoting prosperity in developing countries, has the lead responsibility for agriculture in the Agency. This includes the Agriculture Strategy, field support and technical leadership to Washington bureaus, bilateral and regional missions, interagency coordination, and international cooperation.

The principal offices with agriculture portfolios are the Offices of Agriculture (EGAT/AG), Environment and Science Policy (EGAT/ESP), and Natural Resources Management (EGAT/NRM). These three offices manage a portfolio of global agricultural policy and research activities that involve U.S.-based and international partners working through both bilateral and multilateral approaches. These three offices work closely together to ensure that there is coordination among their programs, especially regarding the management of the natural resource base, the role of agriculture in responding to and mitigating the impact of climate change, and shared interests of science and technology. The Offices serve as a focal point for

USAID AGRICULTURE OBLIGATIONS BY BUREAU (THOUSAND $)[1]

BUREAU[2]	FY 2002	FY 2003		FY 2003 TOTAL	FY 2004		FY 2004 TOTAL
		Agriculture	Environment		Agriculture	Environment	
AFR	113,602	129,183	0	129,183	129,729	5,000	134,729
ANE	117,345	135,308	140,761	276,069	77,332	55,891	133,223
E&E	85,279	77,667	0	77,667	48,454	76,105	124,559
LAC[3]	61,862	114,787	26,000	140,787	102,213	32,901	135,114
EGAT	35,272	43,830	30,018	73,848	47,452	36,569	84,021
DCHA[4]	528,901	337,053	0	337,053	297,193	0	297,193
PPC	545	1,200	0	1,200	0	0	0
Subtotal		839,028	196,779		702,373	206,466	
TOTAL	942,806			1,035,807			908,839

1. Beginning in FY 2003, the Agency broadened its sources of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture.
2. AFR-Africa; ANE-Asia and Near East; E&E-Europe and Eurasia; LAC-Latin America and the Caribbean; EGAT-Economic Growth, Agriculture and Trade; DCHA-Democracy, Conflict and Humanitarian Assistance; PPC-Policy and Program Coordination.
3. LAC figures for FY 2003 have been updated from the FY 2003 Title XII Report.
4. FY 2002 and FY 2003 figures have been adjusted to include Food for Peace Title II (P.L. 480) and International Disaster and Famine Assistance funds.

Agency involvement in agriculture and environment-related science and technology, markets and trade, and capacity building. They also monitor and advise Agency leadership regarding scientific, market, and policy developments that could have an impact on Agency performance in these areas. Four other EGAT offices have activities that address development constraints to agriculture-led economic growth – Economic Growth, Poverty Reduction, Education, and Energy and Information Technology.

OFFICE OF AGRICULTURE (EGAT/AG)

The Agriculture Office is tasked with ensuring that the Agency's programs adequately address the challenge of increasing food production, raising agricultural sector productivity, linking producers to markets, and managing the natural resource base necessary for agriculture in collaboration with the Natural Resources Management and Environment and Science Policy Offices. The Office assists in the development, implementation, and evaluation of Agency policies, strategies, and resource allocation priorities regarding food and agriculture and monitors and advises Agency leadership regarding technical developments that could impact Agency performance in contributing to the Millennium Development Goals of reducing hunger and poverty. The Agriculture Office is responsible for the staffing of the Board for International Food and Agricultural Development (BIFAD) and its sub-committee, the Strategic Partnership for Agricultural Research and Education (SPARE), and the preparation of the annual Title XII Report to Congress.

During FY 2004, the Office of Agriculture:

- Collaborated with the Department of State and USDA on two follow-up conferences to the Ministerial Conference and Expo on Agricultural Science and Technology which brought together senior researchers from 120 countries to promote new technologies to improve food production in developing countries.
- Fielded some 500 volunteers who shared their expertise with producers and agricultural enterprises in 65 countries through the Farmer-to-Farmer Program.
- Concluded a Global Development Alliance (GDA) with the U.S. Bean Council to design training programs and conduct research on the health benefits of pulse consumption.
- Provided technical assistance to 28 missions on improving childhood nutrition and promoting increased incomes for dairy farmers through the Dairy Enterprise Initiative.
- Partnered with the Africa Bureau to provide Internet access to 1,600 African scientists, significantly enhancing their ability to conduct agricultural research.
- Designed and launched three innovative long-term training programs to support graduate-level training for African agricultural professionals.

The office also manages two peer-reviewed competitive grants programs, the U.S.-Israel Cooperative Development Research (CDR) Program, which funds collaborative research involving scientists from Israel and the United States who conduct research with counterparts in developing countries worldwide, and the Middle East Regional Cooperation (MERC) Program, which focuses on the promotion of research cooperation between Arab and Israeli scientists on Mideast development constraints. Agriculture is the largest research component in both programs. In FY 2004, CDR and MERC grants:

- Successfully induced spawning in grey mullet, a major scientific accomplishment which should reduce and hopefully eliminate the current practice of capturing larvae in the wild.
- Developed protocols to test for viruses found in plant material in seven Middle Eastern countries, and established a test lab in Bethlehem that growers are being referred to by the Palestinian Ministry of Agriculture to certify their seeds on a fee-for-service basis.
- Funded joint research projects for over 20 students from the Middle East, Africa, Asia, and Latin America that enabled these students to conduct significant portions of their graduate research in Israel

or the United States. Students acquired research expertise that they brought back to their home countries. The projects also provided lab equipment and additional training upon their return.

OFFICE OF ENVIRONMENT AND SCIENCE POLICY (EGAT/ESP)

This Office provides technical leadership on international science and environmental policy issues with a significant emphasis on agricultural science and technology. EGAT/ESP oversees the U.S. engagement with the Consultative Group on Agricultural Research (CGIAR), representing U.S. development interests in this multilateral system and facilitating linkages between the research of the CGIAR with the U.S. research community and USAID's development programs on the ground. The office also provides technical leadership in the area of agricultural biotechnology, engaging U.S. researchers, both public and private, through collaborations with developing country scientists in Asia and Africa. To create an enabling environment for the development and use of biotechnology, EGAT/ESP also works in areas such as intellectual property rights management, biotechnology regulatory policy and intellectual property rights management, biotechnology regulatory policy, and engagement of developing country scientists in public outreach in their countries. Finally, through the Global Climate Change Team in ESP, USAID supports research to

FY 2004 EGAT OBLIGATIONS[1] (THOUSAND $)
Consultative Group on International Agricultural Research (CGIAR)
Collaborative Research Support Programs (CRSPs)
International Fertilizer Development Center (IFDC)
Partnerships for Food Industry Development (PFID)
Collaborative Agriculture Biotechnology Initiative (CABIO)
Harvest Plus (biotechnology)
Food Security III (FSIII)
Rural and Agricultural Incomes with a Sustainable Environment (RAISE)/RAISE Plus
Sanitary & Phytosanitary Standards (SPS) Trade Capacity Building
Integrated Water & Coastal Resources Management Program
Long-Term Training [2]
Collaborative Development Research
Global Development Alliances (GDAs)
Rural Finance
HIV/AIDS Program
Poverty Reduction
Impact Assessment
Program Support [3]
Agriculture Nutrition Advantage
Dairy Directive[4]
EPIQ II – Environment Policy & Institutional Strengthening IQC
Horticulture Sector Assessment
Title XII Support
Green/AgCom
Geographic Information for Sustainable Development
African Vegetable Network
Land Tenure
Globalizing Regional Lessons Learned
Total

1. Beginning in FY 2003, the Agency broadened its source of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture. EGAT reported environment funds as a total in FY 2002 and FY 2003. The EGAT Agriculture Program includes activities funded in the Offices of Agriculture, Environment and Science Policy, Natural Resources Management, and Economic Growth.

FY 2002	FY 2003	FY 2004		FY 2004 TOTAL
		Agriculture	Environment	
26,900	25,460	13,415	13,416	26,831
22,443	21,860	11,586	11,587	23,173
2,300	2,300	2,300	0	2,300
1,575	2,474	1,997	0	1,997
2,800	7,650	7,000	1,760	8,760
550	1,500	1,500	0	1,500
400	0	600	0	600
131	180	60	300	360
0	0	433	0	433
0	2,229	0	2,100	2,100
0	300	2,192	0	2,192
2,912	2,500	1,105	659	1,764
0	1,000	0	1,965	1,965
0	500	500	0	500
0	250	200	0	200
0	350	100	0	100
0	250	0	0	0
2,695	3,448	3,314	1,764	5,078
0	0	200	0	200
1,528	3,000	0	0	0
0	0	0	300	300
0	0	460	0	460
0	0	440	0	440
0	0	0	1,250	1,250
0	0	0	400	400
0	0	50	0	50
0	0	0	400	400
0	0	0	668	668
60,772	76,412	47,452	36,569	84,021

2. Includes Borlaug, BIFAD and East and South Africa Long-Term Training Programs.
3. Includes PASA, RSSA, CASU, IPA and communications support for the Offices of Agriculture and Natural Resources Management/Land Resources Management Team. Program staff in the Office of Environment and Science Policy are included in the overall program.
4. Central grants only.

develop approaches for agricultural adoption to climate change.

During FY 2004, the Office of Environment and Science Policy:

- Launched the United States-India Joint Working Group on Agricultural Biotechnology, a forum for strengthening Indo-United States collaboration on biotechnology research and policy.
- Supported the launch of the Public Research and Regulatory Initiative, an international effort to engage scientists in the development of biotechnology regulatory policies that may impact international research collaboration.
- Launched the Global Development Alliance on insect-resistant cowpea with the African Agricultural Technology foundation, the Rockefeller Foundation, Monsanto, and research institutes in Nigeria, Australia, the United States, and Africa.

USAID is one of the most important donors to the CGIAR. The 15 centers that make up the CGIAR mobilize agricultural science to reduce poverty, foster human well-being, promote agricultural growth, and protect the environment. American researchers are active in the CGIAR systems as scientists, managers, directors, and board members and share in the accomplishments of this international agricultural research system. USAID also manages the Linkage Program to facilitate joint projects between scientists at CGIAR centers and scientists at U.S.

institutions. In 2004, Monty Jones, currently the executive secretary of the Forum for Agricultural Research in Africa (FARA) was a co-awardee of the World Food Prize. He received this high honor for his work on new rices for Africa (NERICAS) while he was a scientist at one of the CGIAR centers, the West African Rice Development Association (WARDA).

During FY 2004, support from the Office of Environment and Science Policy to the CGIAR contributed to the following results:

- Twenty-eight new varieties of winter wheat developed by CGIAR centers were adopted by farmers in Central Asia including Afghanistan.
- In Uganda, the development and adoption of seed resistant to cassava mosaic disease helped produce a record crop of 5.4 million tons of cassava.
- The CGIAR center, CIMMYT, disseminated improved, drought-resistant maize varieties specially adapted for harsh ecologies of southern Africa, which were developed by the center. These new maize varieties are providing 30 percent higher yields and are planted on more than 250,000 hectares.
- Over 45 bean varieties derived from CGIAR germplasm were released by 15 countries across Latin America. The gross annual value from increased production of these improved beans is $175 million.

OFFICE OF NATURAL RESOURCES MANAGEMENT (EGAT/NRM)

The NRM Office's top priority is helping missions design and implement development strategies that reflect the intrinsic linkages connecting healthy ecosystems to sustainable economies, good governance, and equitable and just societies. The Office's four teams (biodiversity, forestry, water, and land resources management) work together in a cross-sectoral approach to maximize expertise available to missions and field projects. The teams help missions with the design, implementation, and evaluation of natural resource programs and assist with integrating natural resources management with other Agency programs such as economic growth, agriculture, democracy, conflict resolution, and humanitarian assistance. The Office also provides technical assistance and leadership to address U.S. government foreign policy initiatives.

During FY 2004, the Office of Natural Resources Management:

- Developed and implemented community-established and enforced fish sanctuaries in Mozambique that led to the restoration of fish populations in just one year, increasing local food security and expanding potential income opportunities.
- Worked with partners to place over 12.1 million hectares of forest under improved management, and to bring about demonstrable improvements in biodiversity in more than 2.4 million hectares.
- Provided direct assistance to over 30 missions on combining economic, governance, and technical elements in their activities to alleviate poverty, minimize conflicts, and derive long-term benefits through the sustainable use of land resources.
- Helped establish a national network of lake basin managers in the Philippines.
- Managed the Coffee Corps Global Development Alliance (GDA), which fielded 24 industry experts who volunteered their time and expertise to help small and medium coffee farmers move into environmentally sound production of high-quality coffee. As a result, Tanzania, Rwanda, El Salvador, the Dominican Republic, and Nicaragua have reported increased direct sales of specialty coffee.
- Collaborated with partners under the President's Signature Water for the Poor Initiative to improve access to safe water and sanitation for over 19 million people and their livestock.
- Redesigned, competed, and awarded two new Collaborative Research Support Programs (CRSPs) on Integrated Pest Management and Sustainable Agriculture through Natural Resources Management.

AFR • AFRICA BUREAU

The Africa Bureau and its field missions work through innovative, often highly leveraged programs to offer tools to help Africans address their pressing agricultural needs and related environmental, educational, and health issues. USAID and its partners confront the challenge of stimulating sustainable growth in the face of conflict, corruption, frail infrastructure, low human capacity, resource degradation, and an increasingly heavy disease burden. For the United States, African development assistance is not charity; it represents a vital investment in global peace and safety.

The Africa Bureau supports both Washington-based and field programs. The chief focus of the Washington program in FY 2004 was the President's Initiative to End Hunger in Africa (IEHA). The initiative works to (1) rapidly identify and implement core investments with great direct and spillover potential to stimulate smallholder productivity and income growth and (2) stimulate alliances/synergies to complement these investments and pull in more resources for wider impact (see Annex Five, "Presidential Initiatives," for further details).

Key Accomplishments in Africa during FY 2004:

- Increasing Agricultural Productivity and Market Access: Throughout Africa, USAID worked to improve production and trade in rice. In Mali, a new production program in 18 villages introduced a new rice variety from a locally adapted rice variety and a higher-yielding Asian rice variety. USAID anticipates that growers will not only increase their own production but will eventually produce seed for sale. Meanwhile, by making it easier for farmers to buy improved seed and fertilizer, the Ghana Agricultural Inputs Market Development Program helped farmers increase rice output by 155 percent and maize output by 175 percent.

  In Nigeria, USAID partnered with Monsanto and a number of other public and private sector entities to improve the competitiveness of the rice sector, leveraging $800,000 in commercial production credit so that farmers could buy high-yielding rice varieties, fertilizers, and agrochemicals. Rice productivity in trials rose from 3.0 tons per hectare to 5.4 tons—an increase of more than 80 percent.

  In Burundi, USAID sponsored 125 seed fairs, where 99,000 vulnerable farmers could select their preferences from a variety of mosaic virus-resistant cassava seeds, and trained 9,000 farmers in improved techniques for cassava production. This root vegetable, which provides up to 60 percent of caloric intake for people in countries across Africa, is vulnerable to drought, floods, and crop diseases such as the mosaic virus.

  In Mozambique, USAID provided funds for a new tissue-culture laboratory in the National Agricultural Research Institute and built three zonal research centers to grow seedlings for transplant. The cassava variety planted was bred in the national laboratory in Uganda, where cassava is a major crop.

- Job Creation: Across the continent, a common fringe benefit of USAID activities was job creation. Rural finance is one important component of job creation: USAID's partnership with the Government of Eritrea's Rural Enterprise Unit and the Commercial Bank of Eritrea enabled the approval of loans worth $1.56 million to rural small and medium enterprises, which are expected to generate about $10 million in sales revenue and create over 500 jobs. The USAID Agribusiness Linkages program in rural South Africa helped historically disadvantaged farmers and agribusinesses identify marketing and business opportunities. In FY 2004, the program generated 500 new jobs and over $26.1 million in sales of such varied products as lobster tails, specialty teas, and chili peppers. Through USAID's efforts, more than 4,500 new jobs were created in South Africa alone. In Malawi, increased cassava production generated more than 2,000 jobs.

- Locusts: Swarming locusts were a major threat to food production in Mali, Mauritania, and Senegal. As soon as the threat was identified, USAID formed teams, organized surveillance, and brought in six spray planes which, with appropriate safety precautions, sprayed a total of 382,000 hectares within six weeks. The Minister of Agriculture in Mali publicly credited USAID with a major role in limiting the damage caused by the insects and preventing the loss of crops and pastureland.

- Forests: Hunger, which can spur such destructive practices as slash-and-burn agriculture, can lead to the destruction of forest resources. In Madagascar, USAID promoted a more sustainable, diversified, and ultimately profitable approach through interventions at all stages in the agriculture cycle, from production to marketing. In the zones where USAID intervened, some 68 percent of the 29,000 resident farmers adopted two or more elements of the approach, increasing their incomes by an average of 31 percent. USAID also trained 700 extension agents to help their colleagues become more self-sufficient, environmentally sensitive, and capable of responding to market opportunities. Meanwhile, the Wula Nafaa program engaged 470 villages in training to increase the productivity and regeneration of forest resources.

FY 2004 AFR OBLIGATIONS (THOUSAND $)[1]

	FY 2002	FY 2003	
		Agriculture	Environment
Angola	2,703	2,568	-
Benin	320	300	-
Burundi	3,000	-	-
Democratic Republic of Congo	1,000	4,875	-
Eritrea	2,320	1,500	-
Ethiopia	3,444	4,000	-
Ghana	3,671	3,375	-
Guinea	-	1,000	-
Kenya	6,035	5,184	-
Liberia	2,665	2,168	-
Madagascar	-	1,000	-
Malawi	4,109	3,350	-
Mali	6,373	9,000	-
Mozambique	10,317	13,400	-
Namibia			
Nigeria	6,896	6,483	-
Rwanda	2,874	2,925	-
Senegal	2,400	2,250	-
Sierra Leone	1,116	1,082	-
Somalia	800	1,000	-
South Africa	5,591	5,637	-
Sudan	3,000	5,000	-
Tanzania	1,957	2,000	-
Uganda	8,121	12,000	-
Zambia	5,601	5,258	-
Zimbabwe	200	375	-
REGIONAL			
REDSO/ESA & GHAI	7,157	8,450	-
Southern Africa	4,000	9,789	-
West Africa Regional Program	1,629	7,175	-
Africa-Wide (AFR/SD & DP)	16,303	8,039	-
Subtotal		129,183	-
TOTAL	113,602		

1. Beginning in FY 2003, the Agency broadened its source of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture. EGAT reported en-

FY 2003 TOTAL	FY 2004		FY 2004 TOTAL
	Agriculture	Environment	
2,568	1,800	-	1,800
300	-	-	-
-	1,742	-	1,742
4,875	1,284	-	1,284
1,500	539	-	539
4,000	3,404	-	3,404
3,375	4,872	350	5,222
1,000	500	-	500
5,184	2,934	500	3,434
2,168	-	-	-
1,000	499	-	499
3,350	3,338	-	3,338
9,000	10,150	250	10,400
13,400	15,181	100	15,281
6,483	3,888	400	4,288
2,925	2,058	-	2,058
2,250	2,500	-	2,500
1,082	1,148	-	1,148
1,000	-	-	-
5,637	4,485	250	4,735
5,000	24,300	-	24,300
2,000	1,489	-	1,489
12,000	11,994	250	12,244
5,258	3,707	250	3,957
375	-	-	-
8,450	6,869	700	7,569
9,789	7,534	210	7,744
7,175	5,854	800	6,654
8,039	7,660	940	8,600
	129,729	5,000	
129,183			134,729

vironment funds as a total in FY 2002 and FY 2003. The EGAT Agriculture Program includes activities funded in the Offices of Agriculture, Environment and Science Policy, Natural Resources Management, and Economic Growth.

ANE • ASIA AND THE NEAR EAST BUREAU

In 2004, most of USAID's resources in the ANE region were devoted to Iraq and Afghanistan. The emergency relief and reconstruction aid delivered to Iraq during the twelve months following the ousting of Saddam Hussein in April 2003 comprised the biggest U.S. foreign aid program since the Marshall Plan: $3.3 billion to help the Iraqi people take charge of their own lives and to address a range of development constraints, including low agricultural productivity.

Historically, Iraq has had a rich and vibrant agriculture sector—humans first learned the art of cultivating wheat and other foods in ancient Mesopotamia—and the agricultural sector remains the second largest employer in Iraq. Recently, the fertile lands between the Tigris and Euphrates Rivers were neglected and Iraq's farming system deteriorated, its crops producing some of the lowest yields in the world. In 2004, working through Development Alternatives Inc. (DAI), the USAID mission began to address the underlying causes of declining production of grains, vegetables, fruits, livestock, dairy, and poultry including access to rural financial services, water management, and soil reclamation. After beginning with a series of quick-impact projects, the longer-term goal is to establish over the next three to five years a productive, employment-generating, market-oriented agricultural system.

To September 2004,

- Seven grants totaling $394,000 were approved in February 2004 to help rebuild veterinary programs in north and central Iraq.
- The Ministry of Agriculture has set up 18 date palm nurseries in an effort to re-establish Iraq's dominant position in the international date market.
- USAID granted $96,000 for the renovation of Kirkuk Veterinary Hospital and $50,000 for the rehabilitation of Taza and Rashad Veterinary Clinic, which were to be matched by supplies and equipment from the Ministry of Agriculture. These rural veterinary clinics are the two principal sources of vaccines and medicines for animals in 125 communities.

Afghanistan continued to make strong progress across a broad spectrum of development constraints, from democratic principles taking hold to the growth of a more diverse and market-oriented agriculture sector. USAID/Afghanistan is moving from an emergency-response mission to a fully staffed development program operating under an approved country strategy. In FY 2004, the main focus of USAID agriculture assistance was to improve the competitiveness of Afghan products from farm to market. The government has undertaken a number of reforms to promote private enterprise as the key vehicle for building Afghanistan's economy. Given these reforms and the entrepreneurial spirit of the Afghan people, the transition to a market-based agricultural system is achievable.

During FY 2004,

- Three hundred twenty-nine canals and 233 irrigation structures, serving approximately 310,500 hectares of farmland, and farm-to-market roads totaling 168 km were rehabilitated, exceeding the planned target of 120 km by 40 percent.
- One hundred thirty-two multipurpose market centers were constructed. These centers serve as collection, cleaning, sorting, and packing facilities for vegetables and fruit; they also provide off-farm storage sheds. Consolidation of produce in a common center is expected to attract more traders to the villages. At the same time, farmers will have access to better market information.
- Over 3 million head of livestock were vaccinated against disease.

USAID continues to invest in agriculture to reduce rural poverty, mitigate religious extremism, and strengthen economies across the ANE region, where 62 percent of the people live in rural areas, 58 percent earn a living from agriculture, and one-third of rural households live in abject poverty.

In FY 2004, USAID's agriculture programs were linked closely with economic growth activities to help governments meet broad-based medium-term goals. Priority was placed on strengthening economic governance institutions in partnership with the private sector and civil society. USAID targeted investment in technical assistance, training, communications, and commodities. Missions worked to build the capacity of key economic institutions and provide financial safety nets (deposit insurance) to encourage a demand-driven policy environment led by the private sector and supported by civil society organizations. Increasing agricultural productivity and participation in markets was also a priority throughout the region, particularly in Afghanistan, Egypt, Indonesia, Iraq, Jordan, Morocco, Pakistan, the Philippines, and the West Bank/Gaza.

FY 2004 ANE agriculture program highlights include the following:

- In Bangladesh, USAID's agricultural diversification program emphasized applied research, promotion, and training in wheat and maize production. Farm families learned new technologies to reduce their vulnerability to major crop failure. Introduction of a diversity of cereals, legumes, vegetables, and fruit crops at the household level gave individual beneficiaries immediate access to food and improved family diets. Training and technology transfer activities included crop diversification, crop rotation, air-tight seed storage, use of organic pesticides, soil fertility improvement, and irrigation. Through participatory demonstrations and other outreach approaches, 48 percent of targeted farmers adopted these improved practices, which led to a

54 percent increase in crop yield over the FY 2000 baseline.

- USAID's agriculture program in East Timor provided technical assistance, materials, and infrastructure support to improve the production, processing, and marketing of several high-value commodities for domestic and international markets, including coffee, vanilla, and cattle. Cooperative Café Timor (CCT), a federation of Timorese-owned cooperatives—including 16 that produce premium organic coffee for the world specialty coffee market and 20 that produce and export vanilla beans— employs some 22,000 Timorese. A USAID-supported program improved global market opportunities for CCT by helping cooperative members obtain "organic" certification for their farms and designation as Fair Trade producers. These certifications have enabled CCT coffee to be sold to high-end coffee buyers in the United States, Australia, New Zealand, and Europe. The Coffee Project also provides basic rural health services for over one-sixth of East Timor's population via CCT's 27 mobile and 9 fixed clinics.
- In Egypt, the Agricultural Exports and Rural Incomes project focuses on start-up and capacity development activities in the agricultural sector. USAID supported more than 3,000 smallholders in 60 villages in 8 governorates in Upper Egypt, working to improve their capacity to identify and

FY 2004 ANE OBLIGATIONS (THOUSAND $)

	FY 2002	FY 2003		FY 2003 TOTAL	FY 2004		FY 2004 TOTAL
		Agriculture	Environment		Agriculture	Environment	
Afghanistan	6,920	13,700	427	14,127	48,000	-	48,000
Bangladesh	1,500	3,050	8,870	11,920	-	2,500	2,500
East Timor	10,000	10,000	-	10,000	11,367	-	11,367
Egypt	63,475	55,375	13,050	68,425	2,300	9,940	12,240
India	1,187	6,037	16,774	22,811	4,765	-	4,765
Indonesia	1,363	1,913	16,141	18,054	-	13,831	13,831
Jordan	14,850	15,980	29,020	45,000	9,000	2,500	11,500
Lebanon	6,000	-	7,000	7,000		12,000	12,000
Mongolia	-	-	-	-			-
Morocco	-	-	2,294	2,294	1,900		1,900
Nepal	500	1,500	3,747	5,247	-	-	-
Philippines	1,150	1,700	13,667	15,367	-	4,820	4,820
Sri Lanka	-	-	250	250	-	500	500
Thailand	-	-	750	750			-
Vietnam	-	-	1,000	1,000	-	-	-
West Bank/Gaza	5,400	21,300	1,600	22,900	-	-	-
Regional Program	5,000	4,753	26,171	30,924	-	9,800	9,800
Subtotal		135,308	140,761		77,332	55,891	
TOTAL	117,345			276,069			133,223

1. Beginning in FY 2003, the Agency broadened its source of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture.

respond to opportunities in high-value markets and to increase the quality and the quantity of high-value horticultural, livestock, and dairy products for both foreign and domestic markets. As a result of this USAID project, the value of exports of targeted processed foods increased 23 percent, from $109 million (2003) to $134 million (2004), and exports of targeted fresh horticultural products increased 12 percent, to 23,500 metric tons. Over 80 percent of the 5,000 smallholders in Upper Egypt who participated in the USAID project in 2004 earned more money than in the previous year. The additional income earned was used for on-farm improvements and increased household expenditures—better or more food, school fees or tutoring, clothes, and repair of houses.

- In Sumatra, Java, and other parts of Indonesia, the mission continues to expand agroforestry/sustainable agriculture training for villages adjacent to high-conservation-value forests, which has raised the incomes of each of the 1,769 participating households in the villages by $210 per year. Alternative livelihoods training has raised household incomes by $134 per year for over 1,500 participating households. Illegal logging and poaching has stopped in these areas as villagers learned how to meet their basic food security and livelihood needs by other means. The NGO-led National Media Campaign against Illegal Logging reached more than 3.5 million radio listeners, 5.8 million newspaper readers, and 10.7 million TV viewers with public service announcements about the social and environmental costs to Indonesia of illegal logging.

- In Lebanon, USAID continued to assist women's food processing cooperative centers. An additional 14 processing centers were established throughout rural Lebanon in 2004, bringing the total to 21. To ensure quality control and thus marketability of the processed product, a laboratory, storage, and marketing center was established. A total of 337 women were trained and 404 new jobs created, leading to an increase in average annual income of $972. The value of raw fresh yields increased almost fivefold after processing. The centers produced 80 products valued at $154,000, which were exported to Arab Gulf countries, Europe, and the United States and marketed locally through 104 outlets.

- In Nepal, members of the Nepal Tree Crop GDA shipped the first container-load of specialty coffee, worth $28,300, to U.S. buyer Holland Coffee Inc., which had signed a five-year agreement to purchase all its washed coffee from members of the GDA.

- In the Philippines, USAID assistance in business development, marketing, and adoption of new technology, largely through business support organizations, is helping Mindanao producers penetrate the Chinese and other international markets, particularly in tuna, seaweeds, fruits, high-value vegetables, and aquaculture products.

- In Vietnam, USAID's partnership in the Regional SUCCESS Alliance Cocoa Development Global Development Alliance has produced impressive results. The Alliance's goals were to build the capacity of key partners to provide participatory training for farmers, to establish sustainable cocoa systems, to improve cocoa productivity through development of post-harvest systems, and to set cocoa bean quality standards. The Alliance recruited 2,100 households to join 54 cocoa clubs which provided monthly farmer field school training. These farmers now have skills in planting and intercropping cocoa on their farms. The Alliance also brought together traders, manufacturers, and farmers in quarterly stakeholder forums to discuss the cocoa market chain.

E&E • EUROPE AND EURASIA BUREAU

Geostrategic priorities influence USAID funding in the E&E region. Continued progress in reforms in some Southeast European countries will permit significant cuts over the next several years. As USAID leaves the region, it will look increasingly to the European countries to support the integration of Southeast Europe into regional institutions. Meanwhile, funding for the Central Asian republics has increased, partly as a result of their support for the war on terror. In addition to its agriculture programs, USAID has a number of other programs in the E&E region that support the agriculture sector, including small and medium enterprise support, policy reform, water, and cross-sectoral programs.

Agriculture is vital in Central Asia: 60 percent of Central Asians live in rural areas, and agriculture contributes approximately 30 percent to GDP in these countries. The USAID assistance strategy for Central Asia for 2001-2005 emphasizes citizen activism and participation to improve livelihoods and quality of life. Food security is a particular concern in several countries.

In Central Asia, the two primary USAID activities that contribute to agricultural development are improved management of water resources and the encouragement of small and medium enterprises (SMEs). Irrigation accounts for 90 percent of the water used in Central Asia. The goal of USAID assistance is water management policy that will improve efficiency, agricultural productivity, human health, and the environment. USAID projects demonstrating improved methods of irrigation management are complemented by public outreach and training programs.

CROSS-SECTORAL PROGRAMS

Cross-cutting activities related to agriculture are an important part of USAID's programming. For example, in many countries, conflict mitigation contributes to other strategic objectives in the mission framework. By helping to create jobs and economic opportunities, conflict mitigation contributes to an improved environment for the growth of small and medium enterprises. As access to social and public services and to water and energy is improved, so is management of critical natural resources.

- The lack of jobs had been seen as a trigger for conflict in the Kyrgyz Republic. Through the Community Action Investment Program (CAIP) and the Peaceful Communities Initiative (PCI), USAID expanded economic development opportunities to spur job growth with both infrastructure and economic development projects are creating jobs and economic opportunity. In the Nookat Region, USAID helped a community install its own electrical transformer to improve the supply of electricity. This resulted in the growth of new businesses, including sunflower oil production, which brought jobs to the region. A grant to purchase dryers for the Kara-Shoro fruit and vegetable drying plant made it possible for the plant to expand production and hire more than 40 full-time workers, sign supply contracts with a farmers association, and secure favorable markets in Kyrgyzstan and Russia.

WATER PROGRAMS

In Central Asia, the rivers and associated hydropower facilities of the Aral Sea Basin system are shared across several states. With independence, each of these countries has developed policies and practices that favor its own national interests at the expense of regional cooperation in the water and energy sectors. USAID is working with governments and partners to develop a regional approach to water and energy management.

- In Tajikistan, trans-boundary data-sharing is fostering a level of cooperation in the water sector not seen since the dissolution of the Soviet Union. Representatives of the National Hydromet Services in Central Asia signed an agreement to share all data that are collected, processed, and communicated using equipment provided by USAID.
- In Kyrgyzstan, USAID funded the development of two important tools for improved management of its water resources and those

FY 2004 E&E OBLIGATIONS (THOUSANDS $)

	FY 2002	FY 2003		FY 2003 TOTAL	FY 2004		FY 2004 TOTAL
		Agriculture	Environment		Agriculture	Environment	
Albania	7,923	4,200	-	4,200	6,693	-	6,693
Armenia	7,540	8,100	-	8,100	-	-	-
Azerbaijan	4,350	10,946	-	10,946	-	-	-
Bulgaria	450	1,200	-	1,200	-	-	-
Croatia	3,800	6,739	-	6,739	-	-	-
Federal Republic of Yugoslavia & Serbia	1,715	2,165	-	2,165	-	-	-
Georgia	6,918	9,867	-	9,867	-	1,000	1,000
Kazakhstan	949	1,180	-	1,180	-	987	987
Kosovo	3,973	500	-	500	-	-	-
Kyrgyzstan	3,146	2,634	-	2,634	-	930	930
Macedonia	3,144	2,475	-	2,475	3,150	-	3,150
Montenegro	-	100	-	100	-	-	-
Moldova	7,034	10,702	-	10,702	6,416	-	6,416
Romania	3,488	1,700	-	1,700	2,750	-	2,750
Russia	555	520	-	520	-	3,950	3,950
Tajikistan	5,696	1,452	-	1,452	-	872	872
Turkmenistan	300	273	-	273	-	200	200
Ukraine	9,291	8,277	-	8,277	4,542	474	5,016
Uzbekistan	13,644	2,908	-	2,908	-	3,000	3,000
Central Asian Republics Regional	1,000	1,610	-	1,610	-	-	-
Central & Eastern Europe Regional	283	68	-	68	-	1,409	1,409
Eurasia Regional	170	51	-	51	-	994	994
Subtotal		77,667	-		23,551	13,816	
TOTAL	85,369			77,667			37,367

1. Beginning in FY 2003, the Agency broadened its source of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture.

of neighboring states. The Decision Support System (DSS) for the Middle Syr Darya, a water planning model, was installed at key regional water management agencies, and staff at these agencies was trained in its use. The DSS predicts the Uzbekistan and Kazakhstan water demand on the Toktogul Reservoir, located in Kyrgyzstan, in advance of the irrigation season. With this information, Kyrgyz officials are able to release only enough water to meet the needs of the downstream countries, rather than releasing the same amount each year. This allows Kyrgyzstan to save water and sell hydropower, an important source of income for the country. The DSS also facilitates transparent and equitable water distribution. By sharing this information throughout the region, water decision making becomes more transparent (based on real conditions) and the potential for conflict over water resources diminishes.

POLICY REFORM PROGRAMS

- In Kazakhstan, USAID assistance helped improve the business environment through activities that addressed trade barriers and administrative and regulatory constraints on investment. Specifically, Consultative Councils, comprising private business and government representatives, have been established with USAID support to identify and advocate for the removal of cross-border trade barriers. Over the last year, these councils were responsible for
  - Creating a pilot project on joint border control between Sharbakty, Kazakhstan and Kulunda, Russia;
  - Establishing Post Terminals at all customs points in Kazakhstan to accept credit card payment of customs duties and taxes;
  - Placing information kiosks at 10 customs points in Uralsk Oblast; and
  - Streamlining customs clearance procedures in Aktobe.
- Also in Kazakhstan, USAID helped small farmers secure their land rights under the new Land Code, though the code was designed to favor larger-scale farming. Since the government was reluctant to revise the new law to adequately protect the rights of small farmers and land share holders, USAID carried out a public information campaign informing these two groups of the steps they needed to take before January 1, 2005, to protect their land rights. USAID established five legal aid offices, which helped nearly 2,000 small farmers secure their land rights, supporting equitable economic growth and investment opportunities in the agricultural sector.

AGRICULTURE PROGRAMS

- In Ukraine, USAID's Agricultural Marketing Project (AMP) and Citizens Network for Foreign Affairs (CNFA) Farmer-to-Farmer Program worked with the rural cooperative Sviatylivka to improve distribution channels for cucumbers and increase profits. With technical assistance and a grant, the cooperative was able to increase production and contract to sell over 100 tons of cucumbers in 2004, up from 30 tons in 2003. Numerous farmers in the cooperative received technical, organizational, and marketing assistance, and some also received financial assistance.
- USAID trade advisors facilitated 103 trade deals in Kazakhstan worth over $41.3 million. An example is the $801,000 deal with a Shymkent company, Ersyr Ltd, in which USAID advisors helped the enterprise find a buyer in Russia for 2,062 tons of rice and beans by the end of 2004.
- In Tajikistan, USAID launched two new activities in FY 2004 designed to improve agricultural productivity and profitability: the Water User Association Support Program (WUASP) and the Agricultural Finance Plus (AgFin+). The WUASP's goals are to improve the legal and regulatory environment for water user associations (WUAs), to increase the capacity of WUA representatives to manage the local water delivery systems, to manage the WUA as an NGO using sound business practices and democratic principles, and to help WUAs implement institutional and technical improvements. The objectives of AgFin+ are to help pilot groups of farmers move products to markets, increase their incomes, and stimulate investment in the agriculture value chain. The initial target group consists of vegetable farmers selling to processors in the Ferghana Valley area.

SMALL AND MEDIUM ENTERPRISE (SME) SUPPORT PROGRAMS

- In Albania, USAID helped thousands of micro and SMEs to improve their technical, managerial, and marketing capacities and obtain the credit they needed to expand their businesses. Thousands of dairy farmers, mostly women with one or two cows, have transitioned from subsistence to small-scale production, and dairy processors have improved the quality and quantity of their products to increase their

domestic market share. The launch of the USAID-sponsored Seal of Quality is an exciting step toward improving the local competitiveness of Albanian meat and dairy products. USAID is also helping build a specialty tourism industry in Albania and working with meat processors and exporters of herbs and spices to enhance the competitiveness of their products in the domestic and international markets.

- USAID/Caucasus-Azerbaijan has made a significant investment in the agriculture and agribusiness sector to enhance inputs, technology, information, and training. The Mission's goals are to increase job opportunities and produce competitive products. To date, over 35,000 jobs have been created, 850 of them in the SME sector and over 34,000 supporting cottage industries. Mission programs have worked with over 150 enterprises entering new markets. For example, after raising the quality of the juice it produces, one client sold $80,000 in product to a new buyer in Russia. Another client increased poultry production from 3 tons to 4.5 tons per day as a result of technical assistance that addressed sanitary conditions, temperature control, and packaging. To increase awareness of local products, a local consulting organization supported by USAID launched a "Buy Azeri" campaign that now has name recognition throughout the country.

- In Central Asia, a mission project works with 14 communities in the Ferghana Valley of the Uzbekistan/Tajikistan border to address issues of mutual concern to the communities. To date, community investment groups (CIGs) have implemented over 22 infrastructure projects. Kyrgyz and Tajik villages near Dostuk, Kyrgyzstan, have collaborated on the reconstruction of an irrigation water canal, allowing farmers to benefit from a more equal distribution of water, improving yields and lowering tensions between upstream and downstream villages. The project also expanded a school in Lailak, Kyrgyzstan, to allow ethnic Kyrgyz from neighboring Tajikistan to be educated in their native language. These activities directly address sources of tension and have eased disputes that might have led to cross-border violence.

- In Serbia, the Community Revitalization through Democratic Action (CRDA) program, which has a strong local economic development component, is increasing its emphasis on economic growth and job creation. In FY 2004, CRDA helped groups initiate nearly 400 income-generating projects in 196 communities around Serbia. A third of these projects were in the agriculture sector. CRDA program partners also awarded 312 micro-enterprise grants and 180 small-business grants to help create or expand small and micro-enterprises and generate new jobs. Through the CRDA program, technical assistance, training, and grants were provided to agricultural cooperatives, producer associations, veterinary groups, and food processors to improve production and quality, expand agribusinesses, and improve agricultural marketing. Small grants were also provided to refugees and internally displaced persons to commence greenhouse production of fruits and vegetables. A number of these producer cooperatives have successfully negotiated contracts with local food processors: the Kikinda Farmer's Cooperative received a contract to supply the McDonald's restaurant chain with 100,000 heads of iceberg lettuce. USAID investments produced a total increase in agricultural sales of more than $5.3 million in FY 2004.

LAC • LATIN AMERICA AND THE CARIBBEAN BUREAU

Preparing for the implementation of bilateral free trade agreements (FTAs) dominated the work in the LAC Bureau during FY 2004. The United States signed the United States-Central American Free Trade Agreement (CAFTA) with Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. Concurrently, negotiations on bilateral agreements continued with the Dominican Republic, Panama, and the Andean countries. The main focus of the implementation preparations was on building legal and policy capacity at the national level to negotiate and implement these agreements and developing capacity to export high-value products.

USAID took an active role in the negotiations, serving as co-chair of the Trade Capacity Building Working Group for both the CAFTA and the United States-Andean FTA negotiations, working with the countries concerned to identify and prioritize trade capacity-building needs, and then tailoring assistance to meet those needs. USAID also worked closely with host country governments and embassies to organize

FY 2004 LAC OBLIGATIONS (THOUSAND $) [1]

	FY 2002	FY 2003		FY 2003	FY 2004		FY 2004
		Agriculture	Environment	TOTAL	Agriculture	Environment	TOTAL
Bolivia	1,000	1,630	3,432	5,062	3,302	4,773	8,075
Brazil	-	411	2,808	3,219	-	5,000	5,000
Dominican Republic	100	-	-	-	3,900	1,500	5,400
Ecuador	-	3,150	-	3,150	-	-	-
El Salvador	2,650	5,415	2,944	8,359	-	966	966
Guatemala	3,822	4,322	149	4,471	4,000	-	4,000
Haiti	4,900	4,399	-	4,399	1,200	-	1,200
Honduras	800	11,379	994	12,373	-	2,600	2,600
Jamaica	-	750	903	1,653	-	3,166	3,166
Mexico					-	3,900	3,900
Nicaragua	5,690	17,340	240	17,580	3,756	-	3,756
Peru	1,300	1,009	5,874	6,883	-	4,060	4,060
Carribean Regional Programs	4,600	8,982	3,656	12,638	-	570	570
Central American Regional					250	6,365	6,615
LAC Regional					-	4,800	4,800
South America Regional					-	-	-
Andean Counter-Drug Initiative	37,000	56,000	5,000	61,000	-	-	-
Subtotal		114,787	26,000		16,408	37,700	
TOTAL	61,862			140,787			54,108

1. Beginning in FY 2003, the Agency broadened its source of agriculture funds to include environment funds after biodiversity and energy funds have been removed. This aligns funding spigots with the Agriculture Strategy's broader definition of agriculture. LAC figures for FY 2003 have been updated.

events to raise awareness of the benefits of free trade and trade agreements, especially in Brazil, Guatemala, the Dominican Republic, Ecuador, and Paraguay. Such efforts continue after the signing of an agreement, often targeting the business community so as to maintain public support as the legislatures debated ratification. USAID assistance also helped countries establish or strengthen mechanisms through which the government could hear from and consult with the private sector and civil society generally on trade issues.

- In Ecuador, outreach events (e.g., seminars) providing information on free trade opportunities reached an estimated 5,000 participants. In the first two months, over 50 percent of these were women. Many belonged to women's business organizations, whose members traditionally lack ready access to resources such as credit, technology, and market information.
- A September 2004 survey showed that 69 percent of Nicaraguans strongly believed CAFTA would bring benefits to their country. USAID support of the Nicaraguan government's CAFTA outreach and communication strategy and its role in helping negotiators understand the negotiation process and the commitments required under free trade agreements were crucial to keeping Nicaraguans well informed about the agreement.

Besides providing policy, legal, and administrative assistance leading up to and during the negotiation process, USAID also worked hard to help develop products that Latin American and Caribbean communities could export under the agreements, especially value-added and specialty products that command a higher price in the international market. The Agency also provided training in marketing. Special attention was devoted to helping countries implement their obligations under the World Trade Agreement on Sanitary and Phytosanitary Measures and on creating environmentally sustainable production, harvesting, and post-harvest-processing systems for market-oriented enterprises. For instance:

- The new Hillside Agriculture Program (HAP), designed to organize and strengthen small-farmer mango cooperatives in Haiti, paid large dividends in its first year, achieving a 17 percent increase in mango sales in 2004. With sales of more than 340,000 dozen mangoes (up from 311,000 dozen in 2003), HAP-assisted cooperatives now account for 17 percent of Haitian mango exports (up from 4 percent at the start of the project). The terms of trade for mangoes now favor small farmers, who set the price for Haiti's most important export crop. Because their income has increased, small farmers are now more willing to invest in new mango trees. HAP surveys show that in the Gros Morne area, nearly one-third of all mango trees have been planted since the start of the project, reversing a long-established pattern of tree cutting.
- Among other activities, Paraguay Vende (Paraguay Sells) works to address policy concerns that affect businesses, whether in a particular sector or the business climate in general. It worked with clients in the stevia market to conduct a study of safety issues limiting access to markets in the United States and Europe and proposed a collaborative strategy for marketing Paraguayan stevia abroad. By discussing these efforts to access markets with the Ministry of Agriculture and businesses and in the media, Paraguay Vende generated nationwide interest in the stevia marketing strategy.

Fostering public/private partnerships such as GDAs has been an important component of USAID efforts to expand markets for LAC regional products and to create investment opportunities. GDA initiatives have helped diversify markets, expand technical standards for imports, and establish research and extension centers.

- In El Salvador, Honduras, and Nicaragua, Technoserve initiated a GDA to help low-altitude coffee producers diversify out of coffee. Twelve producer groups were incorporated into the program during startup in FY 2004. They now

have baseline annual sales of non-coffee products totaling $515,000, which the project aims to raise to $1.5 million in FY 2005.

- The Colombia Agribusiness Partnership Program (CAPP) received 128 project proposals, a clear indicator of the interest in private sector investment, as well as the potential of partnerships. Twenty-one proposals were approved, involving fruit, African palm, cacao, fique (sisal), banana, tomatillos, and chili pepper crops. These crops will be planted on 31,300 hectares, on or near land where coca is currently grown, benefiting up to 10,139 families and creating over 4 million new workdays of employment.

Promoting alternatives to growing coca remains a major focus of development efforts in the LAC region, especially in Bolivia, Colombia, and Peru.

- In 2004 the area of licit crops planted in the Chapare, one of Bolivia's two main coca-growing regions, increased over six percent to 143,887 hectares, and annual income from farming for assisted families rose to approximately $2,390, which was $961 higher than farm incomes generated by families that did not receive support through the Consolidation of Alternative Development Efforts (CONCADE) program. The value of licit crops leaving the Chapare for the first nine months of FY 2004 amounted to $33.2 million, 25 percent higher than in the same period in 2003.

- In Ucayali, Peru, a local seed company invested $1 million in a corn drying facility assisted by a USAID-financed Development Credit Authority (DCA) credit guarantee. The drying facility supports 400 hectares of yellow corn production on river flood plains, including production by six producers who had formerly grown coca. This is an example of the type and scale of private investment necessary to support licit production in coca-growing regions.

Finally, education and training efforts have been directed to the management of natural resources, particularly threatened forests and watersheds in the Amazon. Some of these projects support indigenous communities that both manage and benefit economically from native environments.

- The work of USAID/Brazil contributed directly to slowing the illegal tropical timber incursions that leave wasted landscapes and livelihoods in their wake and replacing these incursions with profitable commercial and community forest management that employs qualified skilled labor, adds value locally and, most important, perpetuates healthy tropical forests. The mission supported sustainable management certification of over 1.25 million hectares of private Amazon forest holdings, assuring that these forests will be healthy and productive well into the future, and worked to develop a market. Mission partners established the Brazilian Certified Forest Products Buyers Group of more than 60 Brazilian firms, mostly based in São Paulo. The Group has pledged to purchase wood products only from independently certified forest operations. A USAID-sponsored Certified Forest Products Trade Fair held in April 2004 in São Paulo showed Brazilian timber producers that certification gives them access to both Brazilian and international markets, often at premium prices.

DCHA • DEMOCRACY, CONFLICT, AND HUMANITARIAN ASSISTANCE BUREAU

DCHA is USAID's first responder and a driving force to start long-term development. Its mission is to prevent crises, save lives, alleviate suffering, support democracy, and promote opportunities for people adversely affected by poverty, conflict, natural disasters, and a breakdown of good governance.

OTI • OFFICE OF TRANSITION INITIATIVES

Since 1994, USAID's transition initiatives have helped advance peace and democracy in conflict-prone countries by providing fast, flexible assistance in response to rapidly changing conditions. Transition initiatives are short-term—typically, two to three years in duration. Accordingly, those responsible for their implementation work closely with missions and other donors to identify programs that complement other assistance efforts and lay a foundation for longer-term development. OTI often addresses agricultural and other economic issues, directly and indirectly, when they are key to advancing transitions.

Examples of OTI programs that achieved results in the agricultural sector during FY 2004 include:

- In Afghanistan, a 400-family village wanted to rehabilitate a *karez* (an underground irrigation system) that was virtually demolished after 20 years of drought, conflict, and displacement. Late in 2003 village elders asked the provincial government for technical and financial assistance, and the government sought help from OTI. Before the 2004 fiscal year ended, the *karez* was fully operational, providing water to the village for both personal and agricultural needs.
- In the Hindu Kush Mountains, the Afghan Ministry of Reconstruction and Rural Development used OTI funding to repair or rebuild 26 bridges, replacing rickety wooden structures with concrete or stone ones. A walk that used to take several days has been reduced to a bus ride of a few hours. One elder reported that "Now we can send fully loaded trucks of potatoes to the bazaar without worrying about the bridge breaking."
- In Burundi, where 90 percent of the people depend on small-scale agriculture for their livelihoods, land scarcity regularly fuels controversy. Local leaders are now using the conflict-resolution training provided by the OTI-supported Community-based Leadership Program (CBLP) to resolve volatile land disputes. In one instance when a local court demanded that a CBLP-trained litigant pay a "beer fee" to have his case heard, he and his uncle used the resolution skills he had learned to work out a mutually beneficial arrangement for sharing inherited land and avoid the corruption in the local courts.
- In Sri Lanka, ten farmers' organizations were able to earn a steady income by renting agricultural equipment supplied by OTI to their members. The income and their newly transparent accounting systems allowed them to qualify for the first time for small business loans from local banking institutions to buy two-wheel tractors to rent out.
- In Sudan, OTI funded a training program for community-based water management projects. In FY 2004, over 700 people were trained in such skills as community mobilization, water resource management, and basic repair of water infrastructure.

FFP • OFFICE OF FOOD FOR PEACE

Funded through Public Law 480, Title II, the Food for Peace Office donates commodities to cooperating sponsors who provide emergency food assistance. FFP also supports longer-term development projects to reduce the food insecurity suffered by nearly 800 million people throughout the world.

Through its partners, FFP responded to crises in over 39 countries in FY 2004, providing over 1.9 million metric tons of food valued at close to $1.2 billion. In spite of the obvious barriers to serving beneficiaries in war-torn and disaster-plagued areas, FFP was able to reach over 94 percent of the target population. Careful planning helped, as did formal programs

such as Food for Work and Food for Training, both aimed at reducing the vulnerability of affected populations.

- The Samaritan's Purse Emergency Assistance Program for Northeastern Sudan used Food for Work to rehabilitate water and sanitation systems and agricultural projects. These efforts increased the supply of clean, potable water for animals as well as people and produced new or rehabilitated facilities for marketing meat.
- Some 480,000 Somalis benefited from FFP rehabilitation programs. Food for Work farm development, land preparation, and erosion prevention contributed significantly to increased food production.
- In Malawi, FFP introduced the concept of school and kitchen gardens as a means of reducing food insecurity.
- Save the Children, an FFP partner in Mozambique, works with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Institute for Tropical Agriculture (IITA) to conduct on-farm field tests of improved crop varieties. In 2004, the joint effort increased yields by 43 percent for maize and by 47 percent for cowpeas. In 2004, 9,600 vulnerable rural households had enough food for 8.8 months (up from 7.9 months), and the percentage of households producing tomato, pumpkin, and cucumber for sale roughly doubled.
- With help from FFP partner Catholic Relief Services, 5,000 Nicaraguan families located in vulnerable hillside communities benefited from new production and trading agreements that extend to international markets and from new packaging and collection centers serving farmers. By September 2004, incomes of the target population had increased by 51 percent over 2002 levels.
- In Peru, the agricultural program of FFP partner Adventist Development Relief Agency has helped farmers plant more than 5,900 hectares with a variety of marketable crops and has linked strengthened farmer associations with new markets, increasing the value of agricultural product sales from $885,948 to $2.34 million. Over the past two years, the program has helped generate 2,396 new jobs that in turn generated $464,824 in wages for planting, crop management, and harvest-related activities.
- Thanks to a combination of nutrition education, increased food

LARGEST TITLE II DEVELOPMENT ASSISTANCE RECIPIENTS (THOUSAND $) IN FY 2004

COUNTRY	EMERGENCY	DEVELOPMENT	COUNTRY TOTAL
Ethiopia	32,596	248,614	281,210
Sudan	-	267,666	267,666
SACR	-	135,082	135,082
Uganda	16,320	55,262	71,582
Angola	9,500	60,895	70,395
Eritrea	6,831	58,626	65,456
Afghanistan		49,158	49,158
DPRK	-	45,704	45,704
Kenya	11,936	30,954	42,890
India	42,869	-	42,869
Haiti	31,996	3,033	35,029
Bangladesh	27,144	6,568	33,712
Congo		30,813	30,813
Peru	23,869	-	23,869
Somalia	-	23,551	23,551
Bolivia	22,796	-	22,796
Liberia	-	21,531	21,531
Mozambique	21,031	-	21,031
Burundi		19,881	19,881
Chad	4,655	14,532	19,187
TOTAL	251,541	1,071,871	1,323,412

production, and Food for Work tree planting and road rehabilitation, some 14,000 resource-poor farm households have been able to cut the number of months of household food shortages almost in half, from 4.0 months in 2002 to just 2.2 months in FY 2004. Over the same period, the prevalence of chronic malnutrition in children aged 2 to 5 decreased from 20 percent to 8.6 percent.

- The average gross income of the more than 10,000 rural Bolivian households assisted by Save the Children in the USAID program has increased by 23 percent since 2002.
- In March 2004, the Consortium for Rehabilitation and Development began a three-year program to support Sierra Leone's recovery from war by restoring livelihoods for rural households, with one goal being to improve access to food for 37,400 families. It has already helped more than 9,000 farmers (almost half of them female) to plant more than 1,800 hectares of cassava, groundnuts, maize, and sweet potato and another 3,500 to rehabilitate 931 hectares of coffee, cocoa, and oil palm farms.
- Despite widespread flooding, maize production in areas targeted by World Vision Bangladesh increased by 46 percent compared to the previous year, and family diets have improved as households have diversified staple and cash crops. More families are consuming proteins, vegetables, and fruits as well as traditional tubers.
- In Malawi, the Community-based Childcare Centers, which care for 2,636 orphaned and vulnerable children from early morning to midday, have helped establish communal gardens. From these gardens, the communities are able to contribute some of the food used to feed a highly nutritious porridge to the children. About 98 percent of caregiver households also grow vegetables in natural wetlands and gardens to supplement the diets of the children and the chronically ill.
- Food security committees have been organized in Niger to create and carry out food security plans in more than 250 communities. The goal is to reduce food insecurity by making improvements in local agricultural production, nutritional practices, and environmental protection.

OFDA • OFFICE OF FOREIGN DISASTER ASSISTANCE

OFDA is responsible for providing humanitarian assistance in response to international crises and disasters. The USAID Administrator is designated as the President's Special Coordinator for International Disaster Assistance, and OFDA is the conduit for implementing this assistance. Section 491 of the Foreign Assistance Act of 1961, as amended, provides flexible authority that permits OFDA to respond to the needs of disaster victims in a timely manner. The majority of OFDA assistance supports disaster relief and rehabilitation project management by implementing partners. Relief activities include airlifting supplies to affected populations in remote locations, managing primary health care and supplementary feeding centers, and providing shelter materials to disaster evacuees and displaced persons. A rehabilitation project might immunize dislocated populations against disease, provide seeds and tools to farmers who have been adversely affected by disasters, or repair water systems in drought-stricken countries. OFDA also oversees a portfolio of mitigation projects designed to reduce the impact of natural disasters on victims and economic assets in disaster prone countries. Mitigation-related programs range from supporting drought early warning systems to training local relief workers to manage disaster response more effectively.

Many OFDA mitigation activities are aimed at supporting food security and livelihoods through agriculture. Its programs support the reduction of vulnerability to food insecurity by enhancing and diversifying agricultural productivity and by enhancing the agricultural response to climate variability. FY 2004 activities included:

- **Improved Seed for Drought-Prone Areas** – Drought has af-

flicted many regions of Ethiopia for several years. Seed that is suitable for drought-prone areas is an essential part of combating food insecurity. OFDA funded one program through the International Maize and Wheat Improvement Center (CIMMYT) entitled "Rapid-Response Maize Seed Production to Enhance Food Security in Drought-Prone Areas of Ethiopia: Phase II", and another program, "Getting High-yielding and Adapted Bean Varieties into the Hands and Fields of Seed-stressed Ethiopian Farmers" through the International Center for Tropical Agriculture (CIAT).

In 2004, CIMMYT scientists multiplied open-pollinated maize varieties (OPVs) suitable for the drought-prone areas of Ethiopia at both the foundation and certified seed levels. The foundation seed was used for certified seed multiplication and 6.2 tons were used for planting demonstrations and for farmer seed increase. It is anticipated that this work will ultimately contribute to the food security of rural maize growers in Ethiopia. CIAT scientists multiplied large quantities of seed during early 2004, so that seed of several varieties adapted to different agro-ecologies and user/consumer groups was available to farmers for sowing in the *meher* cropping season.

- **Combating Agricultural Pests** – Since 1997, OFDA has been funding work to combat the cassava mosaic disease (CMD) in eastern, central, and western Africa. CMD is devastating to cassava, which is a valuable food security crop to subsistence farmers throughout most of the continent. Since 1997, OFDA has supported the International Institute for Tropical Agriculture (IITA) in monitoring the spread of the disease and multiplying and disseminating cassava plant varieties that are resistant to CMD. In 2004, OFDA funded a study to evaluate its efforts to combat CMD from 1997 to the present, looking especially at the effectiveness, sustainability, and overall impact of OFDA's support to IITA for CMD-related activities. The evaluation examined out-

FY 2004 OFDA FOOD SECURITY AND AGRICULTURE OBLIGATIONS ($)

COUNTRY	AMOUNT
AFRICA	
Angola	4,515,176
Burundi	1,257,823
Democratic Republic of Congo	3,934,529
Eritrea	1,963,169
Ethiopia	9,149,117
The Gambia	50,000
Lesotho	347,541
Liberia	2,574,843
Madagascar	268,739
Mali	550,000
Mauritania	1,200,000
Namibia	50,000
Niger	49,090
Pastoralist Response/Horn	519,345
Sudan	11,247,043
Uganda	125,000
Zimbabwe	5,272,850
ASIA NEAR EAST	
Afghanistan	413,989
Laos	50,000
Morocco	300,000
Iran	11,079
LATIN AMERICA AND THE CARIBBEAN	
Haiti	502,879
GLOBAL PROGRAMS	
Preparedness/Ag-Food Security	1,300,000
TOTAL	45,652,212

puts of CMD activities, beneficiary demographics, impact on beneficiaries, scope of the project, its sustainability, and directions for the future.

OFDA also provided technical support and assistance when the locust outbreak spread through many countries in Africa during 2004. The Africa Emergency Locust & Grasshopper Assistance Project (AELGA), housed under OFDA, linked U.S. researchers, governmental organizations, African national and regional programs, and the United Nations together to monitor and provide early warning of emergency trans-boundary outbreak pests (ETOPs); build national and regional capacity; and undertook research on options for ETOP control, pesticide safety and disposal, environmental safety, integrated pest management, and planning and policy issues.

- **Livestock and Livelihoods** – The OFDA-funded Livelihoods and Livestock Program aimed to foster best practices and a livelihoods-based approach to increasing the income and thus the purchasing capacity of poor pastoralists in drought-prone areas through better access to livestock markets, and to better coordinating animal health and other livestock interventions in the eastern Congo. The Livestock and Livelihoods Project began in 2003 in recognition of the crucial role of livestock in pastoralist communities in the Horn of Africa, and of the need to better address a range of coordination, best practice, and policy issues for livestock-related relief interventions. The project brought together the regional technical and policy reform experience of the Feinstein International Famine Center of Tufts University with the mandated livestock policy organ of the African Union, the Inter-African Bureau for Animal Resources (AU/IBAR), to provide technical direction and support.

- **Climate Information and Communication** – OFDA continued to promote RANET, the Radio and Internet Technology for Communication of Weather and Climate Information to Rural Communities for Sustainable Development in Africa, an international collaboration to make weather, climate, and related information more accessible to remote and resource-poor populations to support day-to-day resource decisions and prepare against natural hazards. The RANET strategy is to strengthen the capacities of national agencies to produce and disseminate information through partners and community organizations, forming a network where all available information can be best integrated with community and household activities and decision-making processes. The RANET project is thus a decision support strategy to better integrate meteorological information into plans for disaster reduction and socioeconomic development. Since it began, it has expanded to integrate other kinds of information that can add value to the meteorological information, including hydrological and agricultural data and advice, and has partnered with development groups concerned about HIV/AIDS as well as agricultural best practices.

The Climate Prediction and Application Center (ICPAC, formerly known as the Drought Monitoring Center, Nairobi) and the World Meteorological Organization (WMO) have implemented a regional seasonal climate prediction system and formulated climate models to reduce the vulnerabilities associated with climate variability. ICPAC is a unit of the Inter-Governmental Authority for Development (IGAD) for countries in the Greater Horn of Africa (GHA). The program has improved climate monitoring, prediction and applications, and early warning of climate-related disasters in support of regional disaster preparedness and sustainable development in ten GHA countries: Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania, and Uganda. In cooperation with the International Research Institute for Climatic Prediction (IRI), ICPAC and WMO support efforts to improve

the capabilities of the ICPAC and the ten member countries to provide reliable long-term forecasts and early warnings of extreme climate events, and to mitigate the adverse impact of climate extremes on agricultural production and food security, water resources, energy production, health, and other socioeconomic sectors. Applications of climate information and outlook include:

- Development of an integrated model for forecasting outbreaks of Rift Valley fever.
- The first Food Security Outlook for the Greater Horn of Africa (GHA).
- Techniques for downscaling probability forecasts for the water resources and agriculture sectors.

In collaboration with the National Meteorological and Hydrological Services in the GHA, ICPAC partnered with media in a regional network of journalists known as the Network of Climate Journalists and Scientists of the GHA (NECJOGHA) to enhance dissemination of early warning information to reduce climate-related risks.

In the 14 countries of the South African Development Community (SADC), which have climate concerns similar to those of countries in the GHA, the International Research Institute for Climatic Prediction, in collaboration with the WMO, the National Oceanic and Atmospheric Administration (NOAA), and the Famine Early Warning System Network (FEWS NET) added a regional seasonal climate prediction system, complete with models and applications, to strengthen the climate and weather meteorological applications of the Regional Remote Sensing Unit at the Drought Monitoring Center in Harare.

In Indonesia and the Philippines, the Climate Forecast applications project, implemented by the Asian Disaster Preparedness Center (ADPC) worked to strengthen national capabilities to reduce the impacts of climate fluctuations through targeted demonstration projects and community participation. This project is a follow-up initiative to the 1998-2003 Extreme Climate Events Program. It will develop decision support tools to reduce vulnerability to climate variability and mobilize communities to use the climate forecast data.

picture suggestions needed.

Do we have any pictures of these meetings?

ANNEX THREE

INTERNATIONAL MEETINGS

As part of its efforts to promote and support transformational development, USAID is committed to sharing best practices and lessons learned with the international development community. Agency staff provides technical leadership, coordinates with other U.S. government agencies, and cooperates with other donors and multilateral organizations in dozens of conferences and workshops each year, some USAID-sponsored. In FY 2004, USAID participated in four key conferences in support of the U.S. agricultural development agenda.

UNITED STATES–SUB-SAHARAN AFRICA TRADE AND ECONOMIC COOPERATION FORUM, DECEMBER 8–10, 2003, WASHINGTON, D.C.

www.agoa.gov/agoa_forum/agoa_forum3.html

In May 2000, Congress passed and the President signed the African Growth and Opportunity Act (AGOA), initiating a new U.S. trade and investment policy for sub-Saharan Africa (SSA). AGOA offers tangible incentives for African countries to continue efforts to open their economies and build free markets. It extends preferential treatment to specific imports, including many agricultural products, from eligible countries that are pursuing market reform. Since 2000, AGOA has fostered new trade opportunities, created new jobs and investments worth hundreds of millions of dollars, and stimulated economic growth across the region.

USAID supports AGOA by providing economic development assistance that improves the capacity to trade in U.S. markets, including technical assistance to improve productivity, comply with U.S. and international trade standards, and address competitiveness requirements. Programs include assistance with WTO accession, policy and regulatory reform, enterprise development, strengthening the financial sector, and facilitating infrastructure development.

AGOA mandates that U.S. officials meet annually with their SSA counterparts. At the annual United States-Sub-Saharan Africa Trade and Economic Cooperation Forum (The AGOA Forum), representatives from the United States and SSA discuss expanding trade and investment relations and AGOA implementation, including encouraging exchanges between U.S. businesses and government officials.

The third annual AGOA Forum was held in Washington December 8-10. Secretary of State Colin Powell opened the forum by reiterating the Administration's commitment to increased trade between the United States and SSA. Before an audience representing more than 30 AGOA and AGOA-eligible countries, senior Administration officials, and several members of Congress, Mr. Powell stated that AGOA was "central to [the Administration's] efforts to meet the challenges of the sub-Saharan African market." The Forum encourages greater engagement, and meetings between U.S. and African trade officials have become more common.

The private sector session of the Forum attracted more than 600 attendees, representing U.S. and African business and public sector interests. The participants discussed the past successes of AGOA and the potential for future gains under AGOA III. Of particular note was a discussion of the importance of the African handicraft sector and the need to encourage African governments to provide more financial resources to artisans.

MINISTERIAL CONFERENCE ON SCIENCE AND TECHNOLOGY TO INCREASE AGRICULTURAL PRODUCTIVITY, MAY 10–11, 2004, SAN JOSE, COSTA RICA

www.fas.usda.gov/icd/stconf/event5.html

USAID was a co-sponsor of this first of two follow-on conferences to the 2003 Ministerial Conference and Expo on Agricultural Science and Technology in Sacramento, CA. Several hundred government officials, scientists, and agriculture experts, including representatives from all nine CORECA (Regional Council for Agricultural Cooperation in Central America, Mexico and the Dominican Republic) member countries, participated.

During the conference, data presented by the Inter-American Institute for Cooperation on Agriculture (IICA) demonstrated that, on average, Latin America and the Caribbean need to double their investment in agricultural research to US$2 billion if the area is to catch up with other developing regions of the world. Conference participants called almost universally for more growth in the agriculture sector, stressing the importance of regional investment for improved technology.

Significant results of the conference include:

- An agreement by delegates that there is a need for consistent and transparent policies to promote free trade, attract investment, and encourage development and adoption of productivity-enhancing technologies.
- A renewed commitment by participating countries to science-based decision making and a call to use biotechnology as a tool to reduce producer costs and increase agricultural productivity and profitability.

G8 MEETING, JUNE 8–10, 2004, SEA ISLAND, GEORGIA

www.g8usa.gov/

The annual G8 Summit brings together the leaders of the world's major industrial democracies: Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States—with the president of the European Commission and the leader of the country holding the presidency of the European Council as invited guests.

At Sea Island the G8 leaders agreed to expand efforts to fight famine, hunger, and food insecurity, especially in Africa, releasing their statement, ***Breaking the Cycle of Famine in the Horn of Africa.*** Of particular significance to USAID is the commitment to raise agricultural productivity in food-insecure countries and to promote rural development. The G8 leaders pledged to work with other donors, international institutions, NGOs, and developing countries on these crucial issues.

The G8 statement calls for a Green Revolution adapted to African conditions that will raise agricultural productivity, promote hardier crops for healthier people, and make food insecurity in Africa a thing of the past.

Specifically, the G8 members pledged to:

- Help food-insecure countries, particularly in Africa, develop agricultural science and technology, raise agriculture productivity, and meet international food safety standards.
- Sponsor, in cooperation with the AU, NEPAD, and other organizations, a public/private forum for offering concrete solutions to the challenges of raising agricultural productivity, especially for the rural poor. This forum will explore ways to improve farming techniques and raise yields by improving investment climates, disseminating practical, usable agricultural technology, and identifying research needs, infrastructure and knowledge bottlenecks, and trade capacity gaps.
- Establish programs for food and nutrition security scholars to expand training in agricultural science and technology for researchers, scientists, and policy makers in developing countries. These programs will address the critical role of science and technology in

raising productivity in an environmentally sustainable way consistent with local needs.

MINISTERIAL CONFERENCE ON "HARNESSING SCIENCE AND TECHNOLOGY TO INCREASE AGRICULTURAL PRODUCTIVITY IN AFRICA: WEST AFRICAN PERSPECTIVES," JUNE 21–23, 2004, OUAGADOUGOU, BURKINA FASO

www.fas.usda.gov/icd/stconf/event6.html
www.fas.usda\.gov/info/agexporter/2004/December/pgpercent204-8.pdf

USAID was a principal sponsor with USDA of this second follow-up conference to the June 2003 Ministerial Conference and Expo on Agricultural Science and Technology. This conference featured more than 40 presentations by government officials and scientists from throughout the world who are interested in technologies to raise productivity of staple food and high-value crops in West Africa. Many of the African invitees were from member states of the Economic Community of West African States (ECOWAS), the West African Economic and Monetary Union (WAEMU), and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS).

The Conference was a special effort to broaden participants' understanding of technological and scientific advances, to facilitate regional, national, and international partnerships to provide access to new technologies, to further the priorities that emerged at the 2003 Ministerial, and to support three U.S. Presidential Initiatives: the Initiative to End Hunger in Africa, Water for the Poor, and Trade for African Development and Enterprise.

There were four significant outcomes:

- USDA and the African Agricultural Technology Foundation (AATF) signed a memorandum of understanding (MOU) to share and disseminate agricultural technologies to improve African production systems, increase food security, reduce poverty, expand agricultural trade and commerce on a sustainable basis, and provide new opportunities for African farmers. Under this MOU, the two signatories will be able to identify technologies and best practices that can be adapted for use by African farmers.
- A U.S. cotton industry study tour for ministers from four cotton-exporting African countries—Benin, Burkina Faso, Chad, and Mali—took place in July 2004.
- Also in July 2004, West African ambassadors in Washington, D.C. were briefed on the technical assistance and capacity building programs of U.S. government agencies.
- West African ministers adopted a resolution calling for more research and investment in agricultural biotechnology and recommending creation of a West African biotechnology center.

ANNEX FOUR

NEW CENTRALLY FUNDED AGRICULTURAL ACTIVITIES IN FY 2004

AFRICA SEEDS INITIATIVE

This five-year project was initiated in FY 2004 under the Presidential Initiative to End Hunger in Africa (IEHA). The project will contribute to the IEHA goals of increasing agricultural productivity and rural incomes through the development of regional seed markets for African communities.

Led by ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), the project is a collaboration between the IFDC (International Fertilizer Development Center), Iowa State University, and selected centers in the CGIAR (Consultative Group for International Agricultural Research). The project tackles small-scale farmers' limited access to new crop varieties, including those developed by national agricultural research centers, and addresses factors limiting the development of regional seed markets in Africa, including insufficient public investment in varietal development, fragmented national seed regulation, distorted markets, and high transaction costs.

The purpose is to develop sustainable, private sector seed systems that will in turn support small-scale market production in sub-Saharan Africa by:

- Improving access to and adoption of the best new varieties developed by public plant-breeding programs;
- Strengthening private-sector capacity for seed marketing; and
- Promoting the development of regionalized seed markets so as to achieve scale economies in variety distribution.

The project's goal is to rapidly increase the adoption of the best new varieties by 1) compiling and disseminating regional seed catalogues for all publicly developed varieties; 2) improving national seed markets; and 3) harmonizing seed policies, regulations, certification, and plant variety protection laws to ease the flow of seed across borders.

BIFAD LONG-TERM TRAINING INITIATIVE

Agriculture is a motor of economic growth in Africa. However, current levels of production are tenuous, and agriculture-led growth may be impossible given low agricultural sector productivity, rising populations, increasing environmental degradation, and climate change. African countries need the scientific and technological capacity to address these critical constraints to development.

Recognizing the need to increase investments in African science and technology capacity, in 2003 the Board for International Food and Agricultural Development (BIFAD), which advises the USAID Administrator on agriculture priorities, undertook a series of assessments that culminated in the BIFAD Long-Term Training (LTT) Initiative. The assessments proposed innovative long-term training programs by which Africans could train at African universities and colleges while benefiting from the resources of U.S. agricultural colleges and universities. One model proposed is a "sandwich" graduate program, in which a student takes courses in the United States and then returns to Africa to conduct thesis research. Another proposal has students doing some coursework in African universities and receiving U.S. credits.

In FY 2004, two awards were made to U.S. universities to pilot innova-

tive long-term training programs in Mali and East Africa.

The **Mali** pilot was awarded to Montana State University for a three-year program that will:

- Award seven scholarships in the areas of biotechnology, soil science, water quality management, business communications, business management, and agriculture education and outreach. All participants will do their training in the United States.
- Forge stronger links between institutions responsible for research, education, and extension by selecting program participants from Mali's research institutes and universities.
- Reduce "brain drain" by improving work environments and providing incentives for students to return to Mali after completing their education. Returning students will be mentored by faculty from the United States and Mali.
- Enhance the commercial viability of research by improving the administration of agricultural research and building organizational skills.

The **East Africa** pilot was awarded to Ohio State University for a three-year program that will:

- Provide 12 scholarships for students and faculty from Makerere University in Uganda, Egerton University in Kenya, and Sokoine University in Tanzania. The Regional Universities Forum for Capacity Building in Agriculture (FORUM) headquartered at Makerere University will coordinate activities, select candidates, oversee placement and pre-departure activities, and undertake institutional capacity strengthening through regional short-term training programs on research grant administration and management.
- Strengthen linkages between private sector agribusinesses and regional faculties of agriculture within and among the three countries.
- Establish cost-sharing alliances with the private sector to fund a grant program that will support in-country thesis research.
- Incorporate an in-country thesis research component into degree programs. U.S. university Master of Science degrees will be awarded to nine students and PhDs to three students.
- Provide mentoring by U.S. university African faculty members. Mentors will be assigned with the goal of creating a new cadre of agricultural scientists.

BORLAUG LEADERSHIP ENHANCEMENT IN AGRICULTURE PROGRAM (LEAP)

USAID launched the Borlaug Leadership Enhancement in Agriculture Program (LEAP) in FY 2004. The program supports graduate research internships for up to 12 months at a CGIAR center. Each student will be guided by a CGIAR scientist and a mentor from a cooperating agricultural college in the United States. The Fellowship will fund travel by the student to the CGIAR center, as well as research costs at the CGIAR. During the selection process, evaluators will give considerable attention not only to the technical soundness and feasibility of the proposed research but also to how the research supports Initiative to End Hunger in Africa (IEHA) goals. The U.S. Department of Agriculture coordinates the Borlaug LEAP Program in collaboration with USAID. The first group of Borlaug Fellows will be selected by December 2005.

The objectives of the program are to:

- Train young scientists to address emerging technology issues;
- Target development priorities in USAID-assisted countries;
- Strengthen national agricultural research centers and universities;

- Enable students from sub-Saharan Africa to access the vast knowledge available in U.S. universities and the CGIAR;
- Encourage U.S. universities and the CGIAR to work together to better address international development problems; and
- Support research to increase agricultural sector productivity in order to reduce the food insecurity that undermines stability in the targeted countries and to promote agriculture-led economic growth.

BORLAUG WOMEN IN SCIENCE PROGRAM

The Borlaug Women in Science (WIS) program, launched in FY 2004 and implemented in cooperation with the Forum for Agricultural Research in Africa (FARA), will offer specialized training to women agricultural scientists. Eligible women must hold an M.S. degree, have three years of practical research experience, and be employed at a West African research institute or agricultural university. Up to nine candidates will be chosen to participate in four to six weeks of technical training at a U.S. university followed by leadership training in Africa that will focus on topics such as influencing others, supervisory roles, conflict management, and role modeling. The first group of WIS Fellows will be selected in October 2005.

COLLABORATIVE RESEARCH SUPPORT PROGRAM (CRSP)

- *Ecologically Based Participatory Integrated Pest Management (EP-IPM) CRSP.* USAID recompeted the IPM Collaborative Research Support Program (CRSP) management entity agreement in 2004, awarding Virginia Tech University the Management Entity of the newly named Ecologically Based Participatory Integrated Pest Management (EP-IPM) CRSP. The goals of the new program are to develop and implement EP-IPM techniques that reduce agricultural losses due to pests; preserve natural ecosystems, including biodiversity; prevent contamination of food and water supplies; and are potentially replicable.

In developing countries, it is estimated that 25 percent to 50 percent of crops are lost in production and post-harvest, a major constraint to improving agricultural productivity. Yet pesticides used improperly threaten biodiversity and the general environment and they endanger the health of the people who apply them, the broader rural population, and consumers of agricultural products.

The EP-IPM program will develop technologies and techniques to reduce such losses while minimizing farmers' reliance on chemical pest control and improving the long-term sustainability of agricultural systems. EP-IPM is also structured to be a management tool that provides farmers with the information they need to make pest control decisions and integrate those decisions into a sustainable, ecologically based production system.

The program will be built around regional centers of excellence and cross-cutting themes that address technical, socio-cultural, policy, economic, education, and logistical constraints. Of the total EP-IPM CRSP budget, 10 percent is reserved for high-payoff technology transfer activities to facilitate prompt implementation of research results and a focused virus research program.

- *Sustainable Agriculture and Natural Resources Management (SANREM) CRSP.* The SANREM CRSP Management Entity was recompeted in FY 2004 and awarded to Virginia Tech University, to lead in a consortium of universities and private sector partners. The "new" SANREM CRSP is designed to be the leader in national and international education in the field of sustainable agriculture and natural resource management with a focus on knowledge: its discovery, organization and dissemination.

Natural capital, in the form of both renewable and nonrenewable resources, is a major source of economic growth. To use these resources in a more productive and more sustainable way, rural people must learn how to adopt appropriate technologies and practices. Yet they are often alienated from local resources and disenfranchised from the decision-making processes that surround resource use. The SANREM CRSP aims to promote rural people's control over resources and their participation in decision making—both of which are fundamental to the adoption of technologies and best practices and to proper resource stewardship, as well as to equitable growth, economic justice, and poverty alleviation.

Program efforts are to be organized through a novel systems approach in which five landscape systems—field/production, farm/enterprise, watershed, ecological, and governance/policy – interact to bring about sustainable agriculture and natural resource management. Decision makers and incentives within each system differ. The extent to which they differ has important implications, including what types of technologies and practices are appropriate and what technology transfer strategies are optimal. Ultimately the consortium will define lessons learned from on-the-ground interventions and strategies, help place this knowledge in its proper context, organize it into a universal knowledge base, and disseminate it through the consortium's vast network of educational and other partnerships.

HORTICULTURE SECTOR DEVELOPMENT ASSESSMENT

Recognizing the growing market for fruits, vegetables, nuts, herbs, and medicinal and ornamental plants in developing and emerging-market countries, USAID commissioned in FY 2004 a horticulture assessment to identify critical research issues and development priorities in this production sector. Increasing horticultural production and linking horticultural producers to local, regional, and global markets contributes to economic growth and poverty reduction and diversifies diets, raising human nutrition and health.

The assessment, undertaken by a consortium led by the University of California at Davis and the World Vegetable Center–AVRDC (Asian Vegetable Research and Development Center) with Purdue University, Michigan State University, and the University of Hawaii, is to identify researchable constraints and propose activities to increase production, reduce post-harvest losses, link producers to markets, expand local availability, improve environmental quality, and increase farm household income and welfare.

INTEGRATED WATER AND COASTAL RESOURCES MANAGEMENT INDEFINITE QUANTITY CONTRACT II (WATER IQC II)

This five-year program of technical assistance covering all aspects of integrated water and coastal resources management is directed at building capacity to respond rapidly to requests for short, medium, and long-term technical services. Five consortia of contractors led by Associates in Rural Development, Inc. (ARD); Chemonics International; Development Alternatives, Inc. (DAI); Joint Venture of International Resources Group (IRG) and Tetra Tech, Inc. with IRG as lead; and PA Government Services, Inc. were awarded contracts in FY 2004.

GLOBAL PROGRAM FOR INTEGRATED MANAGEMENT OF COASTAL AND FRESHWATER SYSTEMS (IMCAFS)

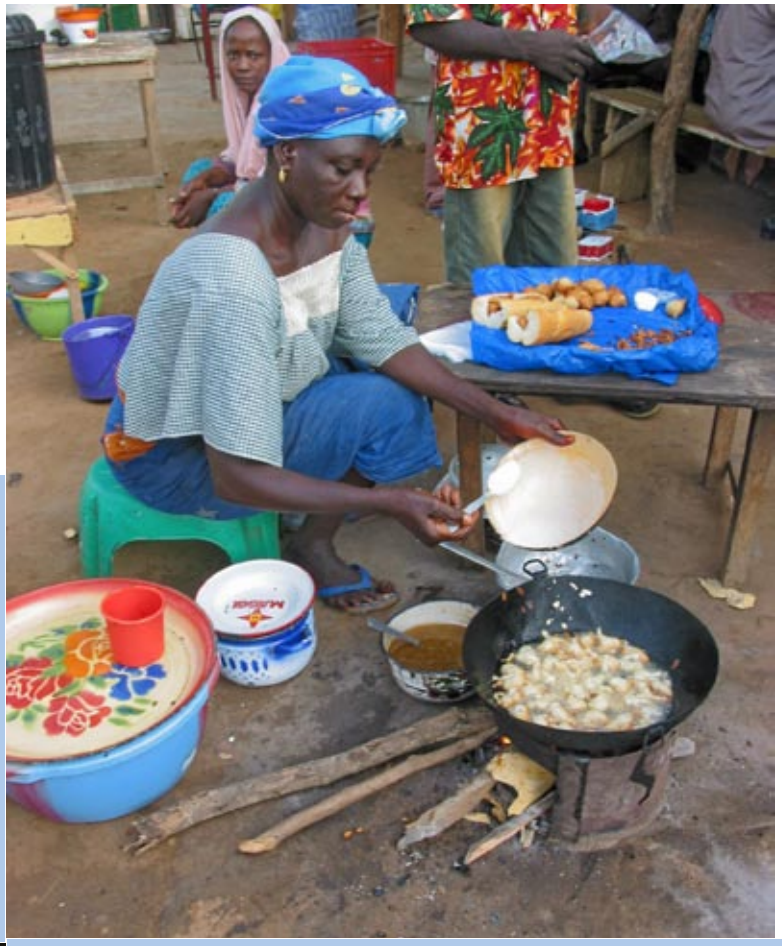
The IMCAFS has two separate five-year Leader with Associates (LWA) awards: IMCAFS **Sustainable Costal Communities and Ecosystems (SUCCESS)** and IMCAFS **Global Water for Sustainability (GLOWS)**. For each, core funding will support pilot projects in Africa, Asia, and Latin America and will promote global innovation and knowledge exchange.

- The IMCAFS-**SUCCESS** program aims to promote healthy coastal ecosystems and sustainable resource management through good governance, emphasizing coastal resources, aquaculture, and fisheries management. The first pilot activities, to be carried out in the Latin America and Caribbean (LAC) and East Africa (EAFR) regions, will establish the foundation for university-based coastal extension programs, using the U.S. Sea Grant Program as a model. Led by the University of Rhode Island, the consortium partnership includes the University of Hawaii, the U.S. Sea Grant Program, the Nature Conservancy, Conservation International, and the World Wildlife Fund (WWF).

- Integrated management of freshwater resources is the focus of the SUCCESS counterpart, IMCAFS-**GLOWS.** Working with water basins, watersheds, or aquifers, the GLOWS consortium provides expertise across the policy, governance, institutional, educational, and technical dimensions of IWRM (integrated water resources management). The program's goal is to strengthen cooperative governance and strategic decision-making for IWRM, support innovative and sustainable technical interventions, and foster global learning and local capacity building in IWRM. The consortium, led by Florida International University, consists of WWF, World Vision U.S., LakeNet, and Amizade.

RELATED NATURAL RESOURCES PROGRAMS

Three new **Environmental Health (EH) IQCs** and a **Hygiene Improvement (HI) IQC** awarded by Global Health Bureau in FY 2004 cover activities that reduce environment-related mortality and morbidity by, for example, controlling disease vectors and sources of infection and enhancing community water supply and sanitation.



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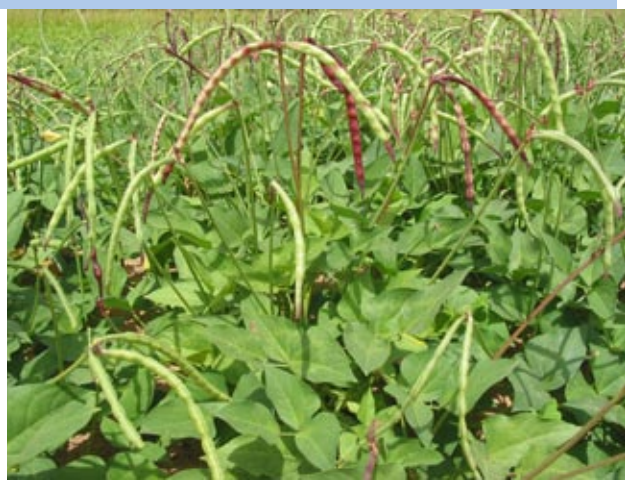

ANNEX FIVE

PRESIDENTIAL INITIATIVES

The National Security Strategy of the United States places international development in line with defense and diplomacy as the third pillar of U.S. national security. Since 2000, President Bush has announced 19 international development initiatives (http://www.usaid.gov/about_usaid/presidential _initiative/) that are being implemented in whole or in part by USAID. These initiatives direct funding to programs in health, education, environment, infrastructure, and trade in 143 developing countries. These initiatives recognize that economic development assistance can be successful only if it is linked to sound policies in recipient countries.

Four of these initiatives are germane to agriculture:

- Trade for African Development and Enterprise (TRADE)
- Initiative Against Illegal Logging
- Congo Basin Forest Partnership (CBFP)/ Central Africa Regional Program for the Environment (CARPE)
- Initiative to End Hunger in Africa (IEHA)

TRADE FOR AFRICAN DEVELOPMENT AND ENTERPRISE (TRADE)

The Trade for African Development and Enterprise (TRADE) initiative, announced in October 2001, promotes African engagement in the multilateral trading system. It was launched to help African countries improve their trade competitiveness and increase access to global markets. TRADE helps African markets and businesses take advantage of increased trading opportunities provided through the African Growth and Opportunity Act (AGOA). The initiative strengthens the capacity of African businesses to develop their products for export, improves the enabling environment for business and trade, and helps African countries mainstream trade into their development agendas.

The TRADE initiative is implemented through TRADE hubs located in the Bureau for Africa's regional Missions in Southern, West and East Africa. Each hub responds to region-specific constraints and serves as a central location where African and U.S. government agencies, donor and civil society organizations, and the private sector can find information, technical assistance and training on trade, investment, and business activities in the region.

Each hub works with a regional economic organization—the Southern Africa Development Community, the Common Market for Eastern and Southern Africa, and the Economic Community of West African States—to increase regional economic integration and reduce barriers to regional trade.

All three hubs are staffed by experts in trade-related fields, and the U.S. Department of Agriculture's Animal and Plant Health Inspection Service plans to place a representative in each hub to advise on compliance with agricultural export standards.

The objectives and goals of the hubs are related, but different.

The East and Central Africa Trade Hub works to:

- Strengthen the capacity of African governments to formulate and implement trade policies that create a supportive business environment for African exports;
- Develop strategies to support private businesses and thereby increase AGOA trade; and
- Improve the efficiency and reduce the cost of trade-related transportation in the region.

The Southern Africa Trade Hub works to:

- Enhance southern Africa's competitiveness in global markets;
- Build trade capacity;
- Develop AGOA-related export business;
- Facilitate customs and trade capabilities;
- Enhance transport corridor efficiency;
- Put in place sanitary and phytosanitary measures (SPS) to guarantee food safety standards for agricultural trade;
- Improve governments' macroeconomic performance; and
- Promote competition and private investment in infrastructure.

The West Africa Trade Hub focuses on areas that will enhance the potential of West African producers to sell to the U.S. market, thus enabling the region to take greater advantage of the increased trading opportunities provided through AGOA. Its main activities are:

- AGOA-related business development;
- AGOA support services;
- Trade capacity building; and
- Information dissemination and monitoring and evaluation.

2004 ACCOMPLISHMENTS

- Total exports to the United States from AGOA-eligible countries in southern Africa increased dramatically in only one year: from $20 million in 2003 to $34 million in 2004—a 70 percent increase. The most impressive gains are attributed to AGOA, which enabled textile and apparel exports from the southern Africa region. Job creation has been dramatic. For the first time in some African countries, the largest employer is no longer the government but a private enterprise. Kenya has projected 50,000 AGOA-related jobs. Lesotho estimates it has created 10,000 new jobs in FY 2004, most of them going to young women.

INITIATIVE AGAINST ILLEGAL LOGGING

The President's Initiative against Illegal Logging is the most comprehensive strategy yet undertaken by any nation to address this critical sustainable development challenge. It reinforces the U.S. leadership role in countering the problem.

The initiative's objective is to help developing countries combat illegal logging, including the sale and export of illegally harvested timber, and to fight corruption in the forest sector. The initiative focuses on three critical regions—the Congo Basin, the Amazon Basin and Central America, and South and Southeast Asia—with four key strategies:

- Good Governance: Building country capacity to establish legal regimes and strengthen enforcement of laws affecting forest management, especially those aimed at illegal logging;
- Community-Based Actions: Enhancing community involvement in forest governance and related wildlife issues;
- Technology Transfer: Developing integrated monitoring systems and building in-country capacity to monitor forest activity and compliance with laws, using, e.g., remote-sensing and ground-based technologies to monitor changes in forest conditions; and
- Harnessing Market Forces: Promoting good business practices, transparent markets, and legal trade, including country capacity to implement obligations under the Convention on International Trade in Endangered Species (CITES).

Illegal logging robs national governments and local communities of needed revenues, undermines prices of legally harvested forest products on the world market, finances regional conflict, and acts as a disincentive to sustainable forest management. The World Bank estimates that illegal logging results in annual losses of $10 to $15 billion in developing countries.

2004 ACCOMPLISHMENTS

- In Guinea assistance enabled communities to sustainably manage at least seven state-owned forest reserves, totaling over 115,000 hectares, and 55 community forests. USAID helped these communities create and implement action plans for rational harvest and use of forest products. The benefits offer communities greater incentive to protect their natural resource base.

- In Bolivia, USAID helped loggers and indigenous communities working with public and private groups to better manage resources and develop sustainable management practices. The goals were to limit the degradation of forest, soil, and water resources while protecting biological diversity. The project helped put in place a new law to govern logging practices and to create a forestry superintendency, which is in charge of regulating the sector, granting forest concessions, and collecting an area-based forestry tax.

- The initiative also worked closely with groups such as the Sustainable Forest Products Global Alliance, a public/private partnership that seeks to make markets work for forests and people. Together, the partners are advancing a new model for forest conservation and community development in initiative countries in which sustainable forest management is rewarded in the global marketplace. As trade is reduced in illegally harvested or unsustainably managed forest products, opportunities for resource-dependent communities and low-income producers are growing.

CONGO BASIN FOREST PARTNERSHIP (CBFP) / CENTRAL AFRICA REGIONAL PROGRAM FOR THE ENVIRONMENT (CARPE II)

The Congo Basin forest is the world's second largest tropical forest, covering 700,000 square miles in six countries (Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, and Republic of Congo), and containing a quarter of the world's remaining tropical forest. This vast area hosts a wealth of biodiversity, including over 10,000 species of plants, 1,000 species of birds, and 400 species of mammals. It is also home to more than 24 million people, most of whom depend on the forest for their livelihoods. These livelihoods are threatened by the continued loss of the forest.

To protect this invaluable forest area the United States announced the creation of the Congo Basin Forest Partnership (CBFP) at the World Summit on Sustainable Development in 2002. The Central Africa Regional Program for the Environment (CARPE II) implements the United States' principal contribution to the CBFP. CARPE is managed by USAID in Kinshasa, Democratic Republic of Congo, though supporting activities implemented across the region, both in the six CBFP countries and in trans-border areas. CARPE is working to improve conservation and sustainable resource management in over 65 million hectares. Important plant or animal habitats are being identified and mapped, management plans developed, and staff trained. Key themes of the initiative include protected area management, improved logging policies, rational forest use by local inhabitants, and improved environmental governance. CARPE partners are also working with Central African institutions on specific land and resources use plans in targeted landscapes.

2004 ACCOMPLISHMENTS

- Substantial progress was made in FY 2004, the first year of CARPE II program implementation. In all of the CARPE countries, partners have built relationships with local communities, the private and public sectors, and other stakeholders to further develop land use plans. Collaboration with the private sector has raised the standards for forest management throughout the Congo Basin. Several major logging companies are moving toward forest certification; in the process they have committed to improving management practices through such activities as halting the bush meat trade associated with their concessions. It is expected that the rate of conversion of primary forest to degraded forest and agriculture in the Congo Basin will be significantly slower or halted altogether at the completion of the CARPE Strategic Objective in 2011.

WATER FOR THE POOR INITIATIVE

The Water for the Poor (WfP) Initiative provided $970 million over three years (FY 2003–FY 2005) to improve sustainable management of freshwater and coastal resources in over 76 developing countries. It accelerated and expanded international efforts to achieve the UN Millennium Development Goals and

IEHA PLANNING TOOL: STRATEGIC ANALYSIS AND KNOWLEDGE SUPPORT SYSTEM (SAKSS)

The Strategic Analysis and Knowledge Support System (SAKSS) is a dynamic analysis system for continuous, timely integration of relevant information into a coherent knowledge management system.

A distinguishing feature of SAKSS is its emphasis on spatial analysis. Spatial mapping of key information not only facilitates location-specific analysis of rural development and food security programs. It is also a powerful tool for linking agricultural and rural development programs with other sectors, including health, environment, water, and safety net programs.

The goals of SAKSS are to a) strengthen capacity for planning and policy analysis; b) improve the data and knowledge base; c) identify knowledge gaps; d) promote the use of integrative analytical frameworks for cross-sectoral planning; e) enhance communication between researchers, policymakers, and donors; and f) improve coordination among all donors concerned with economic growth and poverty reduction in Africa.

The system is intended to serve the information and analytical needs of the policymaking constituency in African countries. Its success will depend on the African partner organizations and stakeholders (research institutions, government ministries, universities, regional organizations, NGOs, and others) that are actively engaged in developing the system. Through such institutional engagement, the knowledge support system will provide analytical tools to foster, enhance, and improve synergies among the varied and multiple development efforts in Africa's rural economy.

implement the Johannesburg Plan of Implementation, including halving, by 2015, "the proportion of people who are unable to reach or afford safe drinking water" and the "proportion of people without access to basic sanitation." The Initiative is divided into three parts: water supply, sanitation, and wastewater management; natural resources management (watershed management); and economic growth and food security (water productivity). Total obligations in FY 2004 for WfP were $764 million. Obligations in FY 2004 for economic growth and food security, the most relevant portions of the Initiative in support of agricultural development, were $85 million.

INITIATIVE TO END HUNGER IN AFRICA (IEHA)

IEHA is a multiyear effort designed to help fulfill the Millennium Development Goal of halving the number of hungry people in Africa by 2015. Formally launched at the World Summit on Sustainable Development in Johannesburg, South Africa, August 29, 2002, IEHA originated in the global recognition that hunger in Africa is one of the most significant development challenges facing the world today. The initiative promotes agricultural growth and is building an African-led partnership to cut hunger and poverty using a smallholder-oriented agricultural growth strategy to ensure sustainability over time. It calls for a rapid and sustainable increase in agricultural growth and rural incomes, while recognizing the role of complementary improvements in other sectors.

IEHA's investments are concentrated in six areas: 1) science and technology, 2) agricultural trade and marketing systems, 3) human and institutional capacity, 4) producer organizations, 5) protecting the vulnerable, and 6) environmental management.

Focus Countries: Investments focus on countries that will serve as models of success and growth, and whose leaders are committed to growth and hunger reduction as priority development concerns. In 2004 the program was expanded to three additional countries; it now covers Ghana, Kenya, Mali, Mozambique, Uganda, and Zambia, as well as three regional platforms in East, West, and Southern Africa, where regional development strategies complement national strategies to help generate regional growth.

Multisectoral Approaches: Because advances in health, education, infrastructure, environment, and public policy management—not just agriculture—are needed to end hunger in Africa, linkages are being built with other sectors and initiatives,

including education, health (HIV/AIDS, diarrhea, and malaria prevention), macroeconomic reform, infrastructure development, poverty reduction strategy plans (PRSPs), New Partnership for Africa's Development (NEPAD), and other local, private, and multi-donor efforts.

Partnerships: Strong and lasting partnerships among national, regional, and rural entities will ensure sustainable results and impact. IEHA is building alliances and securing broad-based political and financial commitments with partners in Africa and internationally. Among them are African leaders, government ministries, regional organizations, multilateral development institutions, the private sector, universities, and other NGOs invested in supporting a smallholder-oriented, agricultural growth strategy.

2004 ACCOMPLISHMENTS

In 2004, IEHA concentrated on 1) implementing core investments to help African smallholders increase incomes and decrease hunger; 2) establishing information systems and strategic analytical capacity to track performance of the agricultural sector and impact of USAID investments; and 3) building country and regional platforms on which to build linkages and alliances with African leaders, the global development community, the private sector, and initiatives such as the New Economic Partnership for African Development's Comprehensive African Agricultural Development Program (CAADP) to boost resources and multiply impacts. IEHA also continued to help African institutions raise and share scarce resources while spreading the benefits of agricultural research and training.

- In 2004 over $47 million was appropriated by the USAID Africa Bureau to fund 46 IEHA activities implemented by the nine USAID country and regional missions, and USAID's EGAT Bureau appropriated over $20.6 million to support IEHA activities. For every dollar invested, IEHA-financed programs are leveraging from other sources (other donors and U.S. government agencies) an estimated $3.21 in additional funding. IEHA partnership efforts are paying dividends already: At the close of 2004, IEHA-supported efforts were working with over 249 partner organizations in Africa.

A snapshot of those who benefited directly from IEHA investments in 2004 include:

- 112,632 men and 94,002 women who have received training in a broad array of topics including biotech safety, market analysis and development, record-keeping, crop quality control, post-harvest handling, product grading, and aggregation of commodities. This is more than twice the number targeted by the initiative.
- 3,626 producer associations, water user associations, trade and business associations, and community-based organizations have received technical assistance and support to strengthen their organizations, exceeding the target by more than 40 percent.
- 249 regional organizations and their members have directly benefited from capacity-building assistance for better management of their policies, programs and strategies. This is 350 percent of the number of organizations targeted.
- 136 public and private partnerships have been formed, facilitating access to knowledge, markets, and improved technologies for the member organizations.
- 353,586 rural households have benefited directly from IEHA investments in the form of improved market access, increased on-farm production, and increased household incomes. This is nearly twice as many households as were projected.
- 231,701 vulnerable households, three times the number targeted, have benefited from IEHA-funded interventions, including households with HIV/AIDS and those affected by drought and conflict.
- Trade in selected commodities has increased by 41 percent in East Africa through efforts to improve access to market information and technological improvements.
- 132 new technologies have been shared with smallholder farmers in East Africa.

Healthy roots of the onion variety Tanduyong in Bongabon Municipality, Nueva Ecija Province, Philippines. The IPM CRSP/PhilRice is active in promoting IPM technology to manage pink root disease in collaboration with the National Onion Growers Cooperative, NOGROCOMA

Onion field in Bongabon Mniciplity, Nueva Ecija Province, Philippines. The IPM CRSP/PhilRice is active in promoting IPM technology in this area in collaboration with. the National Onion Growers Cooperative, NOGROCOMA and the Local Governmemt Unit (LGU).

Truck load of recently harvested onions on the way to market in Nueva Vizcaya, Philippines. The IPM CRSP is active in promoting IPM technology in this area.

ANNEX SIX

KEY ACCOMPLISHMENTS IN FY 2004

In many developing countries, the agricultural sector's performance determines overall economic growth, trade expansion, and increased income-earning opportunities. Increasingly, this performance is shaped by global, regional, and national trade standards, changing consumer preferences, and international advancements in science and technology. To be successful, agricultural producers in these developing countries require training and infrastructure support, good governance and sound policies, and a solid and progressive institutional base that supports market participation.

Strengthening the capacity of countries and producers to increase their agricultural productivity requires the commitment of many partners. In addition to USAID's renewed commitment to agricultural development, U.S. business, science, and technology sectors, colleges and universities, and NGOs are also committed to making use of their strengths and lessons learned. Following are some of USAID and its partners' key accomplishments in market, trade and trade capacity building; social, economic, and environmental sustainability; science, technology and innovation; and education, training, outreach and adaptive research.

MARKETS, TRADE AND TRADE CAPACITY BUILDING

Success in global, regional, and domestic agricultural trade cannot be achieved unless producers know how to gain access to markets and meet requirements for product quality, timeliness, and price. Tariff barriers, weak adherence to sanitary and phytosanitary standards, inadequate infrastructure and post-harvest technologies, and political insecurity and corruption all impede the growth of agricultural trade. To enable producers and rural industries to better connect themselves to agricultural trade opportunities, USAID and its partners are working to:

- Encourage sound policy environments that enable open markets, private sector investment, and gender-equitable access to factors of production, products, and income.
- Ensure that women have an equal opportunity to take advantage of USAID efforts.
- Promote effective institutions and governance to enable producers to acquire, protect, and use the assets necessary to take advantage of emerging market and trade opportunities.
- Expand rural finance to increase the capacity of producers and producers' groups to invest in production and processing operations and overcome gender-based constraints to access.
- Strengthen producers' groups and other rural organizations to enable them to gain market mastery and reduce transaction costs; gain access to and effectively use information on domestic, regional, and international markets; and facilitate technology transfer.
- Enhance access to production, storage, and processing technologies to enable producers to market products in demand in the right qualities at competitive prices.
- Emphasize more nutritious foods (natural and fortified) that can be marketed as higher-value to the benefit of both producers and consumers.

KEY ACCOMPLISHMENTS

1. Under the **Partnership for Food Industry Development** (**PFID**) program, Michigan State University (MSU) and AGEXPRONT established a Guatemalan business development unit (BDU) that has identified 20 potential

export products, carried out 23 business opportunity studies, conducted 10 seminars and workshops on export promotion and guidance, and identified, contacted, and linked 15 suppliers and 10 potential buyers. A total of $23.8 million in new deals were consummated at the 2004 International Regional Trade Convention (AGRITRADE) in **Guatemala**, with projected sales of over $5,063,997 expected during the next twelve months.

2. Policy reform and capacity-building efforts conducted by the **International Fertilizer Development Center** (**IFDC**) have improved access to agro-inputs and stimulated regional cooperation:

   – The IFDC project in **Azerbaijan** helped establish an agro-input dealer trade association that has become the first officially recognized agricultural association in the country. These dealers in 2004 increased imports of seed, fertilizer, and crop protection products by $6.8 million, resulting in increased crop production of $70 million.

   – IFDC helped establish an agro-input dealer trade association in southern **Kyrgyzstan** that lobbied successfully for the removal of a 20 percent VAT (value-added tax) on fertilizer and crop production products. Members increased legal fertilizer sales 15-fold over the past two years.

   – The IFDC-led effort in **Kosovo** spurred the removal of VAT on all inputs including animal feed; as a result, more than 3,000 farmers began using hybrid seeds on 9,000 ha and doubled their yields, and poultry producers increased egg production by 200,000 eggs per day.

   – IFDC implemented a successful voucher scheme providing improved seeds and fertilizer to 100,000 small farmers in **Malawi** with funding from other donors. Based on this experience and similar work in Afghanistan, IFDC conducted a small pilot voucher project in Nigeria in 2004 that resulted in 100 percent repayment and is being considered by the Japan International Cooperation Agency (JICA) and FAO for replication.

USAID provided funding for **IFDC** to undertake agro-input market assessments in some **IEHA target countries.** The projects that emerged from studies in Malawi, Ghana, and Nigeria have been instrumental in improving input supply and reducing transaction costs. For example:

- The IFDC Project in **Ghana** worked with dealers to increase the accessibility of fertilizer, reducing farmer travel costs by 24 percent between 2003 and 2004. Dealers trained by IFDC opened 389 new retail outlets in 2004, increased their sales by 84 percent over two years, and helped double the amount of fertilizer used in 2004 compared to 2002.

  – The agro-input dealers who organized into trade associations in four states and were trained by the IFDC project in **Nigeria** had a 38 percent annual growth in business and spurred a 70 percent annual increase in fertilizer imports and sales between 2001 and 2004, with a total of 500,000 metric tons being distributed by the private sector in 2004. Farmers paid less for urea fertilizer in 2004 despite higher world market prices.

The workshop on the Harmonization of Seed Regulations, Norms of Seed Control and Certification in the member states of the **WAEMU** (West Africa Economic and Monetary Union), jointly organized in January 2004 in Dakar, Senegal, by IFDC, FAO, and GTZ, the German government organization for development assistance, resulted in adoption of a roadmap for common regulations. The WAEMU Commission will submit the regulations to the Council of Ministers for regional adoption.

3. Research in **West Africa** led by Purdue University, under the **Bean/Cowpea CRSP**, found that artisanal processors of cowpea products are highly entrepreneurial and an important part of the cowpea value chain in the region. These processors are demanding cowpea flour of adequate quality and consistency of supply at

a competitive price. CRSP consumer surveys have shown high consumer demand for processed cowpea products especially in urban areas, where there is a greater willingness to pay for processed products. Meanwhile, the CRSP's Food Science research team, led by scientists at the University of Georgia, has developed (1) cowpea flour for the production of akara; (2) a nutritious and tasty weaning food whose ingredients include cowpeas, peanuts, and an underused variety of banana; and (3) a fermented cowpea product to replace melon seed in traditional agushie sauce.

4. Through its **Growth with Equity in Mindanao** (**GEM**) program, the **Philippines** mission is carrying out a wide range of activities aimed at equity-oriented economic growth in the poorest region of the country. **BASIS** (Broadening Access and Strengthening Input Market Systems) CRSP researchers examined the long-term effects of financial services access on asset accumulation, economic mobility, and improved well-being. The research is among the first systematically to investigate the extent of the credit constraints faced by rural Philippine households. Preliminary results show that almost two-thirds of households are credit-constrained. GEM is applying these research results in the introduction and expansion of export crops that offer particular promise for households in Mindanao.

SOCIAL, ECONOMIC, AND ENVIRONMENTAL SUSTAINABILITY

For rural populations, access to and control over natural resources are major governance issues. Improved governance and economic frameworks maximize the ability of rural populations to benefit from their resource base while creating a powerful force for preserving land, water, and biodiversity over the long term. Sound environmental management is key to reducing vulnerability of rural communities in an evolving global marketplace of increasing competitiveness in agricultural and natural resource-based enterprises. To ensure positive benefits to local incomes and the ecosystem, USAID and its partners are working to:

- Restore the health of land, water, and forestry resources and put in place sustainable and renewable energy sources to regain productivity of degraded lands; maintain viable ecosystems; reduce vulnerability to disasters; and ensure an adequate quality and quantity of resources for domestic, industrial, agricultural, and environmental needs.
- Support the development and application of environmental assessment methodologies that enable communities and implementing partners to better assess environmental risks and damage due to natural and conflict-related disasters.
- Strengthen local capacity for integrated management of agricultural and natural landscapes to maximize benefits to individual women and men, while valuing the public good.
- Strengthen the ability of rural households to employ livelihood strategies that allow them to protect against risk, take advantage of economic opportunities, invest in higher-yield technologies, and conserve environmental resources.
- Improve analytical and economic frameworks linking agriculture and natural resource investments to achieve the dual goals of resource protection and economic growth, while enhancing competitiveness in global economic networks.
- Protect natural ecosystems by finding organisms endangered in nature and securing them in seed banks and botanical gardens to improve biodiversity management—including agricultural biodiversity—and ensure the material necessary to increase agricultural productivity.
- Support the acceptance of agriculture and natural resource policies and institutions that promote good governance in ways that empower local citizens, enhance competitiveness, and improve the productivity of the resource base.

KEY ACCOMPLISHMENTS

1. The government of **Ethiopia's** largest state, Oromia, gave special

recognition to Utah State's Pastoral Risk Management (PARIMA) project, part of the **Global Livestock CRSP**, for "providing outstanding service to pastoral people." Begun in 1997, PARIMA has helped develop women's groups in Ethiopia through exchanges with women's associations in Kenya, established community lending organizations, and promoted education for children and adults. Government officials attributed the rapid success of the team's activities to the community-led approaches they employed.

2. The **BASIS CRSP** activity, "Institutional Dimensions of Water Policy Reform in Southern Africa," has had a significant influence on water and irrigation policy in **Malawi**. In August 2004, BASIS hosted a national stakeholders' workshop to explore the contributions of BASIS research finding to current policy debates. After the workshop in August 2004, the researchers were invited to advise the Ministry of Agriculture and Irrigation as well as a World Bank-funded project to rehabilitate smallholder irrigation schemes in Malawi on water and irrigation policy.

3. In **South Africa, BASIS CRSP** research on "Institutional Innovations to Improve Equity Sharing Under Privatization and Farm Restructuring" found creative solutions to poverty and land access problems. The researchers have actively engaged policymakers and other agents driving agrarian reform in South Africa in discussions on the flaws in the design and application of the government's Land Redistribution for Agricultural Development (LRAD) Program and test alternative applications that could enable more equitable access to land and more effective land management by historically disadvantaged farmers. After a July 2004 meeting with the researchers, the Department of Land Affairs in KwaZulu-Natal agreed to the use of LRAD grants for equity-share schemes that substitute leases for land purchase and the use of tenure security legislation to access government grants for equity and housing.

4. In August 2004, the **BASIS CRSP** hosted a conference to discuss research findings with policymakers and representatives of NGOs and donors from throughout **Central America**. The research shows an emerging consensus that any policy to enhance operation of land markets to bolster access of poor rural households must be matched with measures that broaden access to capital and other inputs. Nicaragua's Deputy Minister of Finance and Public Credit opened the conference, which was attended by members of the Millennium Challenge Team for Nicaragua. The meeting was scheduled, upon request, to accommodate Nicaragua's Millennium Challenge proposal process.

5. **GreenCOM** projects were active around the world, emphasizing conservation, environmental sustainability, and educating the community.

   – In **Tanzania**, GreenCOM strengthened its popular Community Environmental Awards Scheme (CEAS). Nationwide, 20 municipalities and 470,989 individuals participate in the program. CEAS cultivates awareness of what is good for the environment and shows Tanzanians how they can have an active role in conserving their country's natural resources. Participants have discovered new, sustainable sources of income, such as seaweed farming, beekeeping, and pond-based fisheries. District oversight committees are actively seeking public and private funding to institutionalize the program.

   – In **Indonesia**, 2004 was the culmination of GreenCOM's project to generate public action against illegal logging. In collaboration with public and private partners, the project undertook a mass media campaign that highlighted the economic and social costs of illegal logging with a grassroots program. Nearly half of Indonesia's population was exposed to the media campaign. The simultaneous top-down and bottom-up approach was designed for influence at the macro level with approximately 300 journalists, government officials, and NGO representatives trained

in effective strategies for communication, environmental reporting, and media relations and at the micro level where individuals were trained and local NGOs received grants to carry out community-level activities against illegal logging.

– In **Panama**, GreenCOM laid a firm foundation for integrated management of the Panama Canal watershed. The new management plan calls for active participation from government agencies, NGO and civil society organizations, private businesses, and local communities in the implementation of environmental best practices. One best-practice implementation mechanism is a competitive grant program for projects in selected sub-watersheds. With GreenCOM's assistance, a proposal review committee is transforming the way grants are awarded with a review process that lasts only three months in contrast to past reviews which often took up to two years. With this streamlined process, 47 new sub-watershed projects were initiated in 2004.

6. Two **Aquaculture CRSP** projects developed methods to culture indigenous fish species in the **Peruvian Amazon Basin**. Researchers from Ohio State University and Universidad Nacional Mayor de San Marcos studied Surubim broodstock development and conducted larval feeding experiments. Concurrently, researchers at Southern Illinois University Carbondale and the University of Arkansas at Pine Bluff collaborated with colleagues at the Instituto de Investigaciones de la Amazonia Peruana to determine the feasibility of using wild fruits and plant products as feed components to culture two native fish species.

7. An **Aquaculture CRSP** study conducted in **Thailand** by researchers from Auburn University and the Thailand Department of Fisheries confirmed that normal procedures of pond soil management, e.g., drying bottoms between crops, liming, and periodic sediment removal, were effective in maintaining good sediment quality in freshwater aquaculture ponds for at least 30 years. This information will be useful to pond culturists not only in Thailand but also in the United States and elsewhere.

8. Research at the University of Michigan and the Asian Institute of Technology supported by the **Aquaculture CRSP** determined the feasibility of integrated polyculture methods in countries throughout Southeast Asia. Feasible production methods included co-culture of lotus plants and hybrid catfish in **Thailand**, cage-cum-pond culture with carp and catfish in **Bangladesh**, cage-cum-pond culture with tilapia and perch in **Vietnam**, and cage-cum-cove culture in Vietnam. Potential benefits from adopting these production methods include reduced environmental impacts and increased economic opportunities through product diversification.

9. The **Regional Network on AIDS, Rural Livelihoods and Food Security** (**RENEWAL**) is an emerging web of agricultural institutions, public and private sector groups, African NGOs and farmers' organizations, and partners dealing with HIV/AIDS and public health. Its purpose is to enhance the capacity of agricultural research and development organizations to contribute effectively to the prevention and mitigation of HIV/AIDS. RENEWAL is filling critical gaps in understanding the bidirectional relationship between HIV/AIDS and agriculture and how agricultural policies and programs can contribute effectively to the prevention and mitigation of HIV/AIDS.

   - In Malawi, RENEWAL supported research on farming systems and resilience to HIV/AIDS, conducted by the Institute for Policy Research and Analysis in Malawi. It examined the sources of resilience for households and communities in three farming systems: maize-based systems, large-scale commercial tobacco, and agroforestry.

SCIENCE, TECHNOLOGY AND INNOVATION

USAID recognizes that the enormous challenge of increasing agricultural productivity and smallholder

participation in markets depends on harnessing scientific and technological advances and using new tools – such as those offered by biotechnology, nanotechnology, global positioning, and geographic information systems – for the business of agriculture. To enable increases in scientific and technological capacity and to foster national and international innovation in developing countries, USAID and its partners will:

- Formulate science policies, strategies, and governance systems that reflect the rights, responsibilities, and roles of men and women within a given culture and ensure that investments in science and technology yield maximum benefits.
- Support the development and application of agricultural technology that will be gender-focused; raise productivity for increased economic competitiveness; stabilize and enhance food, feed, and fiber production in developing countries; increase protein content and micronutrients in staple foods and vegetables; and reduce environmental degradation and pollution.
- Expand public and private sector partnerships and networks to facilitate collaboration on applied research by networks of specialists focusing on staple foods and vegetables, natural resource management, and other aspects of the food, feed, and fiber system.
- Foster scientific and technological innovation capacity and national innovation systems to meet the challenges of today's agricultural environment, including volatile climatic and market changes, evolving grades and standards, infectious diseases, political instability, and the need for systems to maintain a focus on gender.

KEY ACCOMPLISHMENTS

1. Among the accomplishments of the Agricultural Biotechnology Support Project (**ABSPII**) are:
   - A new variety of eggplant that has been bioengineered to resist infestation by the insect pest fruit and shoot borer. Currently, this insect damages 70 percent of the eggplant crop in **India**, **Bangladesh**, and the **Philippines**. Through a public-private partnership, ABSP II will support the public breeding of this technology into economical, open-pollinated varieties to ensure access by small farmers to this promising technology. If additional field tests are successful, this new variety will be available to more than one million farmers growing an estimated 700,000 hectares of eggplant.
   - In **Kenya**, ABSP II supports a partnership between the Kenyan Agricultural Research Institute and the Donald Danforth Plant Science Center on the development of bioengineered disease-resistant cassava. Cassava mosaic disease (CMD) has previously devastated cassava yields in East Africa. Field trials of this cassava are planned for 2006 to ensure durable resistance to this disease. If successful, the new cultivars could also be introduced in Southern and Western Africa, where CMD is also a significant threat to crop yields.
   - Furthest along in the area of bioengineered crops is a program to commercialize insect-resistant potatoes led by Michigan State University. This technology is currently going through the final steps of regulatory compliance to demonstrate food and environmental safety in **South Africa** and is expected to be available to both commercial and historically disadvantaged farmers in the country within three years. If successful, this will be the first publicly developed bioengineered crop in Africa.
2. To ensure the successful application of biotechnology investments, USAID is investing in the development of effective regulatory systems for biotechnology. This includes technical assistance with policy development as well as training to build the capacity to implement science-based regulations. Through the **Program in Biosafety Systems**, the International Food Policy Research Institute (IFPRI), the Danforth Plant Science Center, and other U.S. universities and institutions have helped strengthen and clarify the procedures for scientists and

industry to undertake field trials of bioengineered crops in **Kenya**, **Uganda**, **Tanzania**, and **the Philippines**.

3. Farmers in **Bangladesh** working with the Ecologically Based Participatory Integrated Pest Management (**EP-IPM**) **CRSP** researchers are using eggplant grafting techniques to successfully control the devastating soil-borne disease, bacterial wilt, which is caused by the pathogen *Ralstonia solanacearum*. The bacterium kills plants by blocking the food- and water-conducting vessels of the plant, severely limiting yields. Eggplant grafting technology, first developed by AVRDC —the World Vegetable Center in Taiwan—is being transferred to farmers through a collaborative effort between AVRDC and the other EP-IPM CRSP partners: Bangladesh Agricultural Research Institute (BARI), PhilRice in the Philippines, CARE-Bangladesh, Penn State University, Ohio State University, and Virginia Tech. Prior to the development of this new technique, farmers used costly and dangerous pesticides in an attempt to control the disease, but with no success. At two field sites, Jessore and Sripur, 37 to 50 percent of the farmers in the community have adopted the technology and have increased production by as much as 250 percent and earned 300 percent higher incomes. In addition to controlling bacterial wilt, grafting has generated a cottage industry for women who are employed as grafters.

4. In **Jamaica**, **EP-IPM CRSP** scientists working with Virginia Tech have intervened to help local farmers save the quality of their hot pepper crops, a major export crop and thus a major source of income for many smallholder farmers in Jamaica as well as other Caribbean countries. Exports of hot pepper have been adversely affected in recent years by gall midge infestation. From 1997 to 2001, hot pepper exports from Jamaica declined from 800 tons per year to 300 tons. A countrywide task force involving farmers, packing house inspectors, government officials, and port authorities was established. CRSP scientists undertook research on pest identification using biotechnology-developed markers, began field monitoring of the gall midge populations, and developed field management and alternative post-harvest treatment protocols. Specific EP-IPM technologies included field sanitation, mulching, and trapping. Pest locations and incidence were monitored using Geographic Information Systems (GIS) technology and a web-based surveillance system. A new computerized system allows port-intercepted hot peppers to be traced back to the farm of origin. Exporters were trained in packing-house management, recognition of pest infestation, and field management of the gall midge. A plan was developed by which an EP-IPM system can be used to alleviate the requirement for pre-export fumigation.

5. Through a research partnership with the **Kenyan** Agricultural Research Institute and the Donald Danforth Plant Science Center, **ABSPII** is supporting the development for **East Africa** of genetically engineered cassava that is resistant to cassava mosaic disease (CMD). In addition to mitigating the effects of CMD on yield, this research could result in increasing protein content, which would make cassava a more stable and dependable source of nutrition. The project is developing the disease-resistant cassava cultivars, has trained Kenyan research partners, and recently completed the first screen-house trial of 200 transgenic cassava plants in Kenya. Confined field trials planned for 2005 will enable observation of virus resistance under actual conditions. If successful, the new cultivars could also be introduced in Southern and Western Africa, where CMD is also a significant constraint on crop yields.

6. Through a special set-aside, the **Consultative Group on International Agricultural Research** (**CGIAR**) supports linkages to U.S. universities and research centers. Examples of **Linkage Program** joint projects' accomplishments included:

   – Collaboration between the International Rice Research In-

stitute (IRRI) and Kansas State University that contributed to significant advances in predicting durable disease resistance in rice.

– A joint project of the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) and the University of Wisconsin studied aflatoxins on peanuts that generated significant new insights on the interactions between groundnut genes and aflatoxin and will help in developing peanuts with resistance to aflatoxins. This work won the George Washington Carver prize.

– The University of Vermont and the International Center for Agricultural Research in the Dry Areas (ICARDA) worked together on a biocontrol solution to Sunn pest, an insect that destroys wheat crops across western Asia. This technology, which reduces pesticide use and its associated cost, is being applied to protect the wheat crop in, among other countries, Afghanistan as it rebuilds its agriculture sector.

7. **Other accomplishments of the CGIAR** included:

– The **World Fish Center**, playing a leading role in research on improved fisheries and aquaculture to reduce hunger and poverty, improved aquaculture techniques and developed new strains of tilapia that grow 60 percent faster and yield three harvests annually. These efforts are boosting household incomes and nutrition in sub-Saharan **Africa**.

– Release of a higher-yielding sorghum variety by **ICRISAT** (International Crop Research Institute for the Semi-Arid Tropics) and its partners that is being grown on nearly 30 percent of total rainfed area in **Cameroon** and **Chad**.

– The **Harvest Plus** program addresses nutrition and child survival through development of crops with improved micronutrient content. The program harnesses a range of technologies from breeding to biotechnology. Recently completed human nutrition trials on the effect of orange sweet potato on Vitamin A status of school-aged children in South Africa indicated that such food-based approaches can improve nutrition. The program has also made significant progress in identifying promising inbred maize lines with five times more beta-carotene than regular varieties, in developing wheat lines with 100 percent more iron and 30 percent more zinc, and iron-enriched rice lines.

8. A new treadle-pump irrigation technology has been developed for women farmers in **Malawi** and is widely promoted for dry-season cultivation of beans. The technology was adapted using canals and raised beds and was tested and disseminated in 2004 by **Bean/Cowpea CRSP** scientists at Bunda College of Agriculture and Michigan State University. In contrast to flat production of dry beans, the new system efficiently targets water to beans and is appreciated by women farmers for its labor-saving traits. It will enable women farmers in Malawi to produce high-quality disease-free bean seed using irrigation during the dry winter season and to market the seed for planting during the primary bean-growing season. World Vision has expressed interest in working with smallholder farmers, many of them women, to produce over 60 metric tons of bean seed using the canal and raised bed technology.

9. Cooking time and the quality of cowpeas (seed size, color, leaching of pigments, flavor, integrity after cooking, etc.) are important to consumers. **Bean/Cowpea CRSP** scientists at Texas A&M University and Eduardo Mondlane University in **Mozambique** have demonstrated that hydrothermal treatment of cowpeas (increasing grain moisture to 40 percent followed by heating to 153° C using a ceramic micronizing unit) reduces cooking time by 36 to 47 percent. The micronization treatment causes changes in the physical structure of the cowpea grain, which contributes to improved initial water uptake during soaking and cooking, increases enzyme-susceptible starch, and

reduces protein solubility. This new, inexpensive technology, appropriate for Africa, is projected to enhance the value of cowpeas sold to consumers, improve the convenience of cowpeas for home consumption, and make a major contribution to reducing energy requirements for preparing cowpea-based foods.

10. The Food Science and Human Nutrition research team of the **East and Southern Africa** project of the **Bean/Cowpea CRSP** developed three composite higher-value food products containing beans, small amounts of fish, and a cereal—all locally produced commodities. These food products are extruded, drum-processed, and cooked in the traditional way by local microprocessors. The composite foods meet the Food and Agriculture Organization (FAO)/World Health Organization (WHO)/UNU (United Nations University) guidelines on nutritional quality for preschool children, are acceptable to consumers, and are shelf-stable. NGOs are now disseminating these foods, ideal for nutritional rehabilitation of young children, in **Tanzania**, while the team at Sokoine University of Agriculture is working with Catholic Relief Services to test them at three sites where CRS operates rehabilitation clinics for children and people living with HIV/AIDS (PLWA). The **Beans for Health Global Development Alliance** is currently funding a research project at the University of **Botswana** and Sokoine University to assess one of the composite bean food products' ability to enhance immune systems and delay the onset of AIDS in HIV-positive children.

11. The Central America and Caribbean Basin bean-breeding team of the **Bean/Cowpea CRSP**, a partnership between the Escuela Agricola Panamericana - Zamorano in Honduras and the University of Puerto Rico, within the past year released an improved bean cultivar for commercial production in **Honduras**, **El Salvador**, **Costa Rica**, **Nicaragua and Panama**. "Amadeus 77" is a small red seed which is considered a good substitute for the disease-susceptible varieties preferred by consumers in the region. Agronomic traits important to lowland bean farmers include its resistance to BGYM (bean golden yellow mosaic) virus and high heat tolerance.

12. When the International Fertilizer Development Center (IFDC) assessed the impact of its **Integrated Soil Fertility Management (ISFM**) project in **West Africa** in May 2004, it found that an estimated 60,000 farmers had adopted ISFM technologies. ISFM is an ecological approach to improving soil fertility and increasing crop yields, contributing to sustainable livelihoods. Farmers adopting ISFM decide on fertilizer use based on a combination of their own knowledge and research-based options. The program currently promotes mineral fertilizers because organic alternatives, such as manure and compost, are bulky, often scarce, of poor quality, and require a lot of labor, which is often in short supply. (In the future, improved transportation and research on labor-saving techniques may overcome this problem.) Increased fertilizer use is currently translating into positive results: The average income of ISFM farmers in the region has increased by 20 to 50 percent, and the value/cost ratio of adoption is quite favorable.

13. The **Sorghum/Millet CRSP in Niger** couscous project successfully transferred production of the agglomerator for the entrepreneurial-scale cereal processing unit installed at the National Agricultural Research Institute of Niger (INRAN) in 1996 to a local entrepreneur (funded through the International Fund for Agricultural Development (IFAD) Sorghum-Millet Initiative). The agglomerator, designed by the French Agricultural Research Centre for International Development (CIRAD), is integral to local production of high-quality agglomerated couscous that can compete with imported products.

14. A **Sorghum/Millet CRSP** project in **Burkina Faso**, proposed and implemented by Burkanabi scientists, is conducting research to improve production practices for the sorghum used to make ***dodo***, a traditional beer. A combination of microdose fertilizer application and Zai (water management)

substantially improved yields of cv. Framida—a superior red sorghum used in the brewing process.

15. The emphasis of a **Sorghum/Millet CRSP** project at Kansas State University is on high-yielding sorghum varieties and hybrids with enhanced nutritional and grain quality characteristics for use as food and feed. Recent nutritional studies found certain large-seeded hybrid sorghums to be equivalent in feeding value to hybrid maize and significantly better than conventional varieties. Efforts have begun to transfer these enhanced feed quality characteristics into high-yielding sorghum varieties adapted for production in Africa, Central America, and the United States using conventional breeding strategies and adapting certain marker-assisted selection technologies. Several new large-seeded lines have been identified through applied plant breeding efforts.

16. During 2004 the **Sorghum/Millet CRSP** identified an improved photoperiod-sensitive (maicillo criollo) sorghum variety, 85SCP805, with increased grain yield, improved nitrogen use efficiency, and high nitrogen (N) fertilizer recovery for production in relay intercropping systems with maize in **El Salvador**. This new variety produced higher yields in validation (40 farms) and transfer (260 farms) plots than local varieties and showed greater response to nitrogen fertilizer application.

17. Yield increases in **Central Ghana** are a result of **EP-IPM CRSP** systems research. A systematic study of production practices which were reducing farm yields demonstrated the potential for four- to five-fold greater yields if other production practices were adopted. A package of best practices was provided, with adopting farmers achieving double to triple their previous yields. One best practice is the use of locally produced soaps to limit losses from foliar diseases; other yield increases come from improved agronomic practices. Farmers who have adopted the best-practice technologies are helping to disseminate the technologies to their neighbors through participation at field days.

18. In **Uganda**, the **Peanut CRSP** supported the National Agricultural Research Service field testing and release of breeding lines (developed by ICRISAT) that are resistant to groundnut rosette disease, which is endemic in Uganda and regularly decimates yields. The resistant lines are producing two to four times the yields of susceptible varieties and the benefits are already worth $47 million annually.

19. In **Guyana**, peanut production more than doubled in 2003-04, partly due to higher yields and partly due to increased areas of production as farmers responded to market incentives and the introduction of improved technology disseminated through **Peanut CRSP** field days. Production exceeded local demand and the CRSP, assisted by a **Farmer to Farmer** volunteer, is working with traders and processors to develop and market higher-value peanut products. CRSP collaborators have encouraged local women's cooperatives to manufacture peanut butter and are negotiating the use of peanut butter in school feeding programs. Acceptance of this higher-value product will increase consumption, employment, and nutrition for the Amerindians of the Rupenuni region.

EDUCATION, TRAINING, OUTREACH, AND ADAPTIVE RESEARCH

Reducing the knowledge gap in developing countries requires leadership from the international agricultural research and education communities, expansion of agribusiness and market training, and innovative education and training models for linking producers, entrepreneurs, and agribusinesses to the information they need. To ensure that agricultural producers and entrepreneurs benefit from improved technologies and market opportunities, USAID and its partners are working to:

- Support education and training tailored to reach women and girls, as well as long-term training and basic education curricula in the agricultural sciences and related subjects in order to strengthen

the human and institutional capacity of developing countries.

- Put in place innovative rural information and communication technology systems that address the differential abilities and needs of men and women. And, improve access to these systems by dispersed farmers and agribusiness entrepreneurs to information across an array of agricultural disciplines and uses.
- Improve problem-based learning approaches—local, organizational, and site-specific—by taking adaptive research and "off-the-shelf" solutions into the field.

KEY ACCOMPLISHMENTS IN EDUCATION AND TRAINING

1. The **Association Liaison Office for University Cooperation in Development** (**ALO**) is a 12-year-old partnership between the EGAT Education Office and six major higher education associations—The American Association of Community Colleges, The American Association of State Colleges and Universities, The American Council on Education, The Association of American Universities, The National Association of Independent Colleges and Universities, and The National Association of State Universities and Land-Grant Colleges—devoted to fostering cooperative development partnerships with colleges and universities abroad and promoting the involvement of U.S. higher education in global development. A five-year ALO initiative partnering Michigan State and Texas A&M universities with the National University of Rwanda, the Kigali Institute of Technology, and the Rwanda Agricultural Research Institute established the **Partnership for Enhancing Agriculture in Rwanda through Linkages** (**PEARL**) to bolster the applied research, teaching, and outreach capacity of agricultural institutions in Rwanda.

   – In cooperation with the Maraba Coffee Producer Association, PEARL has sold 18 tons of coffee beans to Community Coffee of Louisiana and 19 tons to Union Roasters in London at a fair trade price, selling another 15 tons on the local market. Maraba specialty coffee is now a model for the Rwandan coffee industry and is being replicated countrywide.

   – Thirteen Rwandan faculty and researchers from partner institutions have completed Masters of Science programs in agriculture-related disciplines in the United States and have returned to Rwanda.

   – Primarily through its outreach center, PEARL has trained more than 2,500 Rwandan women and 3,800 Rwandan men in coffee, cassava flour, and chili pepper production and marketing, financial management, business management, business plan writing, and the use of information technology. PEARL has also provided technical training on the production and export of geranium, avocado, and eucalyptus oils, as well as cassava starch.

2. The **African Graduate Fellowship Program** (**AFGRAD**) and **Advanced Training for Leadership and Skills** (**ATLAS**) programs, which ran consecutively for 40 years, ended in 2004. An impact assessment of the programs, noted that more than 3,200 African professionals from 45 countries received PhD and masters degrees at U.S. universities in fields critical to their country's growth at a cost of $182 million. The ATLAS and AFGRAD programs together were among the largest and most durable long-term training initiatives in sub-Saharan Africa. Program alumni credit changes in their attitudes towards work and improved research techniques to their U.S. education.

3. The **Consultative Group on International Agricultural Research** (**CGIAR**) has been active in training developing country nationals in a wide array of agricultural research techniques including forestry, fisheries, livestock, and social science, as well as plant breeding. Since it was founded in 1971, more than 75,000 developing country scientists and researchers have been trained by CGIAR centers.

4. In FY 2004, the **Bean/Cowpea**

CRSP continued its strong commitment to human resource development and institutional capacity building by implementing cost-effective CRSP training programs. These training programs integrate training with long-term research managed by scholars based at the training institutions. In FY 2004, 57 trainees (23 of them female) from developing countries and the United States were supported for PhD (13), master's (37) and bachelor's (7) degree study. Based on needs identified by the collaborating host country institutions and the objectives of the research projects, their studies targeted the critical areas of agricultural economics and marketing (13), food science and human nutrition (21), and genetics and molecular biology (23). Long-term training is an integral part of the research program; CRSP researchers have been able to leverage other funding to partially support CRSP trainees. In FY 2004, because 26 of the 57 Bean/Cowpea CRSP trainees were partially or indirectly supported from leveraged resources and 30 were trained in host country institutions, the CRSP training program was very cost-effective.

KEY ACCOMPLISHMENTS IN OUTREACH

1. The Agriculture and Nutrition Advantage (TANA) is an alliance of more than 30 leaders in Uganda, Nigeria, Kenya, Ghana, and Mozambique promoting greater use of gender-informed food-based strategies to link agriculture and nutrition as a way to reduce hunger and malnutrition.

   – In **Ghana**, the alliance organized representatives from 18 public agencies, NGOs, and donors to increase the use of food-based strategies to reduce micronutrient deficiencies, agree to support activities in nine pilot districts for planning and implementing community-based programs to support food-based strategies. and work closely with the Ministry of Agriculture to integrate nutrition into agricultural training curriculum.

   – USAID supported an institutional study on "Barriers and Opportunities for Strengthening Links between Agriculture and Nutrition" in Nigeria, Ghana, Mozambique, and Uganda. Among the principle findings were: (1) there is a general lack of cross-sectoral collaboration on nutrition issues, given the organization of government and limited national resources; and (2) advocacy is a critical activity to bring increased attention to nutrition issues, particularly given the hidden face of malnutrition, popular misconceptions about what constitutes food security, and the lack of recognition of the critical contribution that better nutrition makes to economic growth, as well as the immense costs of malnutrition on the economy and society. Study findings informed country teams on how to develop strategies for reaching influential audiences and achieve the objective of reducing hunger in the country.

2. Through the **Farmer-to-Farmer** program, U.S. volunteers conduct outreach training on agricultural technologies, business planning, and financial management to increase production, develop markets, and raise incomes.

   – An ACDI/VOCA (Agricultural Cooperative Development Institute and the Volunteers in Overseas Cooperative Assistance) volunteer helped the Adygeni, **Georgia** Beekeepers Association increase the quality and quantity of honey yields. He disseminated queen breeding and rearing techniques and introduced the Jentar system of queen rearing, which speeds hive population growth, and the modern Langsthroth hive, which though more expensive and more difficult to handle, can increase production five-fold. The volunteer trained 78 association members in basic bee biology and larvae grafting, demonstrated proper use of the Jentar queen-rearing system, and evaluated the potential for exporting Georgian Rukh queen bees for additional income. After the volunteer left, the Adygeni Beekeepers Association began replacing antiquated hives at the rate of five per year. A local NGO, Sustain-

able Livelihoods in Adygeni and Adjacent Rayons furnished new model hives to women entrepreneurs with the aim of increasing their economic status by promoting their involvement in a traditionally male-dominated activity. Re-queening on a three-year rotation was adopted to increase productivity. Apiary conditions in Adygeni beehives have improved.

– Environmental degradation is causing extreme depletion of natural resources and the productive base for agriculture in Haiti, the poorest country in the Western Hemisphere. A Partners of the Americas **Farmer-to-Farmer** volunteer and bamboo expert traveled to Haiti four times to help farmers address environmental and other sustainability problems through bamboo production. The volunteer introduced 200 plants from 12 new bamboo varieties and educated farmers on their multiple benefits. He then expanded his technical assistance to agricultural groups in other regions and distributed plants to individual farmers, collaborating nurseries, and communal reforestation projects. After four months, the new bamboo varieties were doing better in Haiti than in their native Hawaii. Propagation techniques such as root division and branch cuttings have since generated over 40,000 plants from the original 200, of which 15,000 have been distributed throughout the country. Based on a survey of the first 2,000 farmers in the project who received the new bamboo varieties, most farm one to two hectares of land; they have planted 50 percent of the bamboo plants for construction, 25 percent for crafts, and 25 percent for erosion control and reforestation.

– A **Farmer-to-Farmer** volunteer provided practical training on medicinal plant propagation and nursery management to 15 **Nepalese** farmers from Makawanpur District. These farmers proceeded to establish 22 medicinal herb nurseries in seven community forests. These nurseries produced 20,000 Swertia chirata, 20,000 Cinnamomum tamala, 10,000 Valeriana jatamansi, and 6,000 seedlings of Taxus baccata with a total sales value of US$3,466. One of the farmers was later invited to provide expert advice on nursery management techniques to a group outside the district. Participating farmers have also conducted training within their community forest user groups to disseminate the skills and knowledge learned from the volunteer.

– An aquaculture expert worked with the **Uganda** Fish Farmers' Association and Makerere University to revitalize the fisheries sector, recommending strategic investment in the fish feed industry to stimulate smallholder commercial aquaculture. Fish farmers found that changing feed regimes could increase production by more than 80 percent. At Sunfish Ltd., for example, where the feeding demonstrations were held, improving the feeding regimes increased production of table fish by 10 to 12 percent, and the mortality rate of fry in the hatchery was reduced from 35 to 45 percent to 18 percent. Sunfish Ltd. is now working with the Danish Development Agency (DANIDA) to identify equipment manufacturers in Europe who build feed pellet machines.

– An ACDI/VOCA volunteer helped introduce greenhouse drip irrigation systems to members of the **Armenian Greenhouse Association**. After the assignment, 36 farmers installed the systems. The new technology resulted in a 40 percent drop in fertilizer use and a 30 percent drop in herbicide and pesticide use, while yields increased 30 to 35 percent. After this technical assistance, members of the association were able to export about 5,000 gerbera flowers to Russia each week during the winter months. The association also obtained a $13,000 loan to install carnation flower production systems in new greenhouses to export carnations to Russia.

3. **IFDC** held a workshop on agro-input regulatory systems and their regional harmonization in Pretoria,

South Africa in August 2004. The event was co-sponsored by the Fertilizer Society of South Africa, the South African National Seed Organization, and Crop Life South Africa. The 33 participants, mainly from Africa, included policymakers, government officials, and leaders of private agro-input trade associations. The objective was to improve understanding of the key issues in designing legislation and regulatory systems for fertilizer, seed, and crop protection products that protect the farmer, are compatible with open markets, and do not constrain regional and international trade. Outreach follow-up is underway with the Southern African Development Community and other regional and national organizations.

4. Researchers participating in the **INTSORMIL CRSP's Central America** Regional Program have developed management strategies for fall armyworm and sorghum midget, identified priority disease problems, and improved germplasm. New production practices and pest management methods are being moved to producers through field validation and demonstration trials, collaboration with outreach services and NGOs, and workshops with producers.

5. In the Kati region outside Bamako, the capital of **Mali**, 190 women and 200 men attended farmer field schools on green bean production. The schools were the result of efforts by **EP-IPM CRSP** researchers from U.S. universities, the Institute d'Economie Rurale, and the Office de la Haute Vallée du Niger (OHVN). OHVN is charged by the Government of Mali with ensuring food security and diversifying farmer incomes in the upper Niger River Valley. Green beans have become a principal high-value crop exported to Europe, with over 95 percent of green beans grown in the region exported, they provide important income to a growing number of smallholders.

6. The National Oceanic and Atmospheric Administration's Sea Grant program encourages environmental stewardship, long-term economic development, and responsible use of ocean resources in the United States. With NOAA support, the **Aquaculture CRSP** set up an innovative program that explored the adaptability of the Sea Grant model to other countries and provided Sea Grant with a model for future international work. The CRSP is supporting New York Sea Grant (led by Cornell University) as it transfers knowledge to the Universidad Juárez Autónoma de Tabasco in **Mexico**. This initiative also worked with Rhode Island Sea Grant and Texas Sea Grant to provide technical assistance in all countries where the Aquaculture CRSP has a presence.

TABLE 1. CAPACITY-BUILDING ACTIVITIES: NUMBER OF BENEFICIARIES FY 2002-2004[1]

	FY 2002	FY 2003	FY 2004[2]		
			Female	Male	Total
Degree training completed	183	81	38	56	94
Degree training in progress	235	341	103	150	302
Professional training[3]	5,290	2,581	7,699	11,490	23,069
Workshops and in-field training[4]	33,267	114,715	20,301	35,979	154,594
Conferences	1,996	1,491	175	295	6,257
TOTAL	40,971	119,209	28,295	47,925	184,250

1. Figures are approximate. Actual numbers are probably somewhat higher.
2. FY 2004 figures on female/male participation is only a partial breakdown, due to availability of data.
3. Professional training is all learning undertaken to improve performance. It includes post doctoral studies, short courses, and technical workshops/conferences. It specifically excludes degree training, in-field workshops/demonstrations, and conferences (even if they may serve as learning opportunities).
4. These figures include technical and ongoing assistance programs to agricultural producers.

7. In 2004 the **Aquaculture CRSP** built on the 2001-2003 success of CRSP-supported extension agent farmer training sessions conducted by Oregon State University, the Kenya Fisheries Department, and Moi University by adding a new round of courses for 36 assistants in the fisheries department, the people who work most directly with fish farmers in **Kenya**. The courses dealt with pond construction, fish handling, and pond and fish stock management.

8. A **Sorghum/Millet CRSP** workshop was held in **South Africa** to discuss the potential of white grain sorghum hybrids for increased food production. The workshop was attended by 60 representatives of all segments of the sorghum industry throughout the Southern Africa region.

KEY WORKSHOPS AND CONFERENCES

1. In January 2004, the Department of Agricultural Economics at the University of Nairobi organized a stakeholders' meeting on "Rural Markets, Natural Capital and Dynamic Poverty Traps in **East Africa**" at the Kenya Agricultural Research Institute headquarters. The meeting, under the auspices of the **BASIS CRSP**, was attended by representatives of the Kenyan Ministry of Planning, Kenya Agricultural Research Institute, the World Bank, the Rockefeller Foundation, and USAID, among others. Held early in the research design process, the meeting allowed stakeholders to shape BASIS-supported research activities to meet their policy formulation needs. Participants identified constraints and opportunities and made suggestions for how to improve links between research findings and policy.

2. **RENEWAL**, the Regional Network on HIV/AIDS, Rural Livelihoods, and Food Security, organized two regional workshops—"Methods and Indicators" and "HIV/AIDS and the **Southern African** Food Crises"—that brought together 40 senior-level representatives from HIV/AIDS, agriculture, farmers groups, NGOs, and nutrition and health groups from Canada, Kenya, Malawi, Mozambique, The Netherlands, Uganda, the United Kingdom, and Zambia to develop consensus within the networks on good research practices, what constitutes progress in specific research, and how progress can be assessed. This workshop was a key step in operationalizing the stakeholders' goal of strengthening the methods to be used in the networks' action research and in the evaluation of progress and impact.

3. The Agriculture Nutrition Advantage (**TANA**) alliance organized a workshop to strengthen the skills of 28 country team members from Uganda, Nigeria, Kenya, Ghana, and Mozambique in the use of gender analysis to strengthen links between agriculture and nutrition, and to demonstrate the advantages of using gender analysis for program and policy planning and implementation.

4. USAID/EGAT (Economic Growth, Agriculture and Trade Bureau) and USDA organized a conference hosted by the University of California-Davis in June 2004 to discuss the Linkage Program which facilitates joint projects between scientists at CGIAR centers and U.S. research institutes, and the Scientific Liaison Officer (SLO) Program[1]. The conference attracted 65 participants from the IARCs, the U.S. university community, USAID, and USDA.

   - The conference highlighted eight highly successful projects in the Linkage Program since 1997 (nearly 90 projects are funded each year). Participants rated the Linkage Program as being highly effective, and urged its continuation and expansion.
   - There was a great deal of interest in the SLO program and discussion of the roles and responsibilities of SLOs and how to make them more effective by more communication and sharing of experiences among themselves.

1. USAID appoints an SLO (scientific liaison officer) to each of the IARCs (international agricultural research centers) it funds, with an understanding that the SLO will serve as a volunteer resource person, fostering research linkages between the center and the U.S. scientific community. Informally the SLO advises both the center and USAID on scientific aspects of the center's programs.

TABLE 2. DEGREES AWARDED FY 2004

U.S. UNIVERSITY-LED ACTIVITY		DEGREES AWARDED								
	Activity Total	PhD			M.S.			B.S.		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
ABSPII	2	0	2	2	0	0	0	0	0	0
Pond Dynamics/Aquaculture CRSP	26	0	2	2	4	10	14	3	7	10
BASIS CRSP	8	3	0	3	2	3	5	0	0	0
Bean/Cowpea CRSP	8	0	1	1	1	1	2	2	3	5
CIAT Biofortification	14	1	3	4	3	2	5	3	2	5
CIMMYT Biofortification	1	0	0	0	0	1	1	0	0	0
Food Security III	3	1	0	1	0	2	2	0	0	0
Global Livestock CRSP	22	2	6	8	4	0	4	5	5	10
EP-IPM CRSP*	10	0	0	0	4	6	10	0	0	0
GRAND TOTAL	94	7	14	21	18	25	43	13	17	30

TABLE 3. STUDENTS IN LONG-TERM TRAINING FY 2004

U.S. UNIVERSITY-LED ACTIVITY		NUMBER IN TRAINING								
	Activity Total	PhD			M.S.			B.S.		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
ABSPII	1	1	0	1	0	0	0	0	0	0
Aquaculture CRSP	71	3	6	9	4	15	19	17	26	43
BASIS CRSP	17	7	7	14	2	1	3	0	0	0
Bean/Cowpea CRSP	50	6	7	13	12	23	35	2	0	2
CIAT Biofortification	30	1	7	8	6	12	18	4	0	4
Food Security III	12	2	4	6	2	4	6	0	0	0
Global Livestock CRSP	44	11	14	25	12	6	18	1	0	1
Sorghum/Millet CRSP*	49			20			29	0	0	0
EP-IPM CRSP*	24	3	5	8	4	11	15	0	1	1
RENEWAL	4	1	1	2	2	0	2	0	0	0
GRAND TOTAL	302	35	51	106	44	72	145	24	27	51

* Figures represent only a partial breakdown, due to availability of data.

ANNEX SEVEN

FIELD SUPPORT

The Bureau for Economic Growth Agriculture and Trade (EGAT) provides technical assistance to bilateral and regional missions. EGAT helps missions to identify, design, implement, and evaluate their programs and strategic objectives. In FY 2004, EGAT staff spent nearly 6,000 working days in the field helping maximize the potential of development efforts in agribusiness, agriculture and rural policy, governance, capacity building, and natural resource management. Field support in FY 2004 included:

Agribusiness, Competitiveness, and Trade: EGAT assistance helped missions develop programs to improve agribusiness capacity and to more effectively access domestic and regional markets to benefit from global trading opportunities. Through its Growth with Equity in Mindanao (GEM) program, EGAT carried out a wide range of activities related to the introduction and expansion of exportable agricultural commodities that offer the promise of equity-oriented economic growth in the **Philippines**' poorest region. EGAT also worked with Mindanaoan rural banks and credit cooperatives to help develop capability to profitably serve microenterprises.

In **Ethiopia**, EGAT successfully promoted the development of agricultural cooperatives as a means of bringing smallholder farmers together to open new markets and receive higher prices for their produce. These cooperatives are actively supporting government and donor objectives to open markets and improve agricultural marketing. There are currently 30 cooperative unions that count 450 primary cooperatives as members. That translates into more than 550,000 farmer members benefiting from USAID support.

Agriculture and Rural Development: EGAT actively supported land tenure reform and property rights programs worldwide through the promotion of sound private land ownership policies. The EGAT-sponsored Policy Research Strategy Group has worked to strengthen linkages between research institutions and policymakers in **Kenya** by encouraging the exchange of recent research findings and ongoing research efforts for use by policy makers.

Biotechnology: EGAT supported bilateral and regional biotechnology programs in more than a dozen countries. Field support sought to build local capacity to access and develop modern biotechnology applications and to build effective science-based regulatory systems. This includes training of developing country scientists in modern molecular biology research, training of government regulators and policymakers, as well as support for public outreach by developing country scientists and organizations to address concerns about biotechnology in their own countries. Finally, EGAT launched a pilot effort to reach out to trade officials in developing countries to improve understanding among policymakers on the trade dimensions of biotechnology.

Land Policy: Inappropriate land policies can strangle both economic and social development. The victims of inequitable land distribution are among the most vulnerable populations in the world. EGAT worked to change outdated laws and eliminate gender and ethnicity-based biases in **Afghanistan**, **Ethiopia**, **Kosovo**, and **Rwanda**. EGAT also conducted land tenure assessments and designed land tenure reform activities.

Natural Resource Management and Agriculture: EGAT worked hard to balance the relationship between agriculture and environmental management, particularly in Africa and in Central and South America. In **West Africa**, EGAT helped an estimated 60,000 farmers adopt integrated soil fertility management protocols, which resulted in higher financial returns to family

farms and an increase in fertilizer use. In **Madagascar**, EGAT helped establish three regional public-private alliances for an integrated, landscape-level approach to specialty crop production and marketing, and improved management of protected and natural forest management areas. In **Nigeria**, EGAT helped intensify sustainable production of crops for local and regional markets to increase local incomes, part of a strategy to reduce pressure on neighboring protected areas. In the **Philippines**, EGAT supported the mission's new Fisheries Improved for Sustainable Harvest (FISH) program, which aims to increase select fish stocks by 10 percent through an ecosystem-based approach to fisheries management and improved resource governance. In **Guatemala**, EGAT worked to ensure that sustainable forestry activities conducted by community forestry concessions in the Maya Biosphere Reserve were not harming archaeological sites. In Panama, EGAT supported improved watershed management, including the reduction of agricultural pollution and soil erosion.

Strategy Development: A sound strategy permits missions to take a targeted approach to creating programs and ensures that they take environmental, economic, and social considerations into account in doing so. In **Colombia**, EGAT personnel guided the Mission through an update on strategies related to rural finance and land use procedures. In **Rwanda**, EGAT personnel assisted the Mission in its development of a strategy for training and capacity building.

Sector Assessments: EGAT provided assessment assistance to missions to analyze the national and regional financial, social, political, and environmental challenges faced by farmers and others involved in agribusiness. In **Malawi**, **Ethiopia**, and elsewhere, EGAT helped missions understand these challenges and direct programs and resources more effectively.

Program Activity/Evaluation: Systematic program evaluation can be invaluable to a mission eager to gauge the effectiveness of its programs—in both development and environmental terms—and determine where resources and programs should be deployed. In **India**, EGAT identified critical factors of success and furnished statistical data on trends in agricultural insurance, disinvestment, international arbitration, fiscal management, among other topics.

Program Design: EGAT staff traveled worldwide to help missions craft and gauge the value of programs. In **Ghana**, EGAT provided assistance in organizing representatives from 18 public agencies, NGOs, and donors to increase the use of food-based strategies to reduce micronutrient deficiencies. EGAT also supported the drafting of action plans for planning and implementing community-based actions to support food-based strategies.

At the behest of **Ethiopia**'s Deputy Prime Minister, EGAT/AG sent three teams to Ethiopia to help build the livestock industry there. The teams worked with the Ethiopian Mission to design activities that would not only develop agribusinesses and markets but would also respond to the Mission's Integrated Strategic Plan (2004-08).

The teams found that general perceptions about anti-private-sector attitudes of the government and the moribund state of the private sector in Ethiopia were incorrect. In fact, the government was eager to develop sanitary and phytosanitary standards (SPS) and install diagnostic laboratory capabilities to meet export standards and take advantage of what the Food and Agriculture Organization (FAO) estimated to be a multibillion dollar livestock export market. Meeting with many private sector groups, the teams found them eager to create jobs and build wealth. The teams concluded that, with coordinated help from USAID and the donor community, Ethiopia could become the breadbasket of the Horn of Africa. To that end, the teams drafted scopes of work for a 15-month Indefinite Quantity Contract task order dealing with agribusiness associations and livelihood activities connected to the most vulnerable populations under the Safety Nets Program. Finally, the team helped design a four to five-year agribusiness and markets program. The Ethiopian government then requested further technical assistance and training in SPS, diagnostic laboratory work, and livestock marketing and development.

ANNEX EIGHT

ACRONYMS

AATF	African Agricultural Technology Foundation
ABSPII	Agricultural Biotechnology Support Project II
ACDI/VOCA	Agricultural Cooperative Development Institute and the Volunteers in Overseas Cooperative Assistance
ADPC	Asian Disaster Preparedness Center
AED	Academy for Educational Development
AELGA	Africa Emergency Locust & Grasshopper Assistance Project
AFGRAD	African Graduate Fellowship Program
AFR	Africa
AGEXPRONT	Nontraditional Exporters' Guild (Guatemala)
AgFIN+	Agricultural Finance Plus Program
AGILE	Accelerated Growth, Investment, and Liberalization with Equity
AGOA	Africa Growth and Opportunities Act
AGRITRADE	International Regional Trade Convention
AIDS	Acquired Immune Deficiency Syndrome
ALO	Association Liaison Office for University Cooperation in Development
AMP	Agricultural Marketing Project
ANACAFE	Guatemalan National Coffee Association
ANE	Asia and Near East
APEDA	Agricultural Products Export Development Authority
APR	Agricultural Policy Reform
ARD	Associates in Rural Development, Inc.
AREP	Accelerated Reform for Enterprise Promotion
ARMM	Autonomous Region in Muslim Mindanao
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ATLAS	Advanced Training for Leadership and Skills
ATRIP	Africa Trade and Investment Program
AU	African Union
AVRDC	Asian Vegetable Research and Development Center (World Vegetable Center)
BASIS	Broadening Access and Strengthening Input Market Systems
BDU	Business Development Unit
BIFAD	Board for International Food and Agricultural Development
CAADP	Comprehensive African Agricultural Development Program
CABIO	Collaborative Agricultural Biotechnology Initiative
CAFTA	Central American Free Trade Agreement

CAIP	Community Action Investment Program
CAMP	Coastal Aquifer Management Program
CARPE	Central African Regional Program for the Environment
CATIE	Center for Tropical Agriculture Investigations and Studies
CBFP	Congo Basin Forest Partnership
CBFRM	Community-based Forest Resource Management
CBLP	Community-based Leadership Program
CBNRM	Community-based Natural Resource Management
CCT	Cooperative Café Timor
CDM	Camp Dresser & McKee International
CEAS	Community Environmental Awards Scheme
CEDPA	Center for Development and Population Activities
CEH	Centre for Ecology and Hydrology
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIG	Community Investment Group
CILSS	Permanent Interstate Committee for the Control of Drought in the Sahel
CIMMYT	International Maize and Wheat Improvement Center
CIRAD	French Agricultural Research Centre for International Development
CITES	Convention on International Trade in Endangered Species
CITE	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMD	Cassava Mosaic Disease
CNFA	Citizens Network for Foreign Affairs
CONCADE	Consolidation of Alternative Development Efforts
CORECA	Regional Council for Agricultural Cooperation in Central America, Mexico and the Dominican Republic
CPP	Crop protection product
CRDA	Community Revitalization through Democratic Action
CRS	Catholic Relief Services
CRSP	Collaborative Research Support Program
DA	Development Assistance
DAI	Development Alternatives Inc.
DART	Disaster Assistance Response Team
DCA	Development Credit Authority
DCHA	USAID Bureau for Democracy, Conflict, and Humanitarian Assistance
DMP	Desert Margins Program
DSS	Decision Support System
E&E	Europe and Eurasia
EA	Environmental Assessment
EAF	East Africa Region
EAP	Environmental Action Plan

ECOWAS	Economic Community of West African States
EGAT	Economic Growth and Trade
ENR	Environment and Natural Resources
EPA	Environmental Protection Agency (United States)
EP-IPM	Ecologically-Based Participatory Integrated Pest Management
ESP	Environment and Science Policy, EGAT
ETOP	Emergency transboundary outbreak pests
FAO	Food and Agriculture Organization (United Nations)
FARA	Forum for Agricultural Research in Africa
FFP	Food for Peace
FISH	Fisheries Improved for Sustainable Harvest
FORUM	Regional Universities Forum for Capacity Building in Agriculture
FY	Fiscal Year
G-8	Group of Eight leading industrialized nations
GDA	Global Development Alliances
GEM	Growth with Equity in Mindanao
GHA	Greater Horn of Africa
GIS	Geographic Information System
GLOWS	Global Water for Sustainability
GTZ	German Government Organization for Development Assistance
HIV	Human Immunodeficiency Virus
IARC	International Agricultural Research Center
IBAR	Inter-African Bureau for Animal Resources
ICPAC	Climate Prediction and Application Center
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDP	Internally Displaced Person
IEHA	Initiative to End Hunger in Africa
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IGAD	Inter-Governmental Authority for Development
IICA	Inter-American Institute for Cooperation on Agriculture
IITA	International Institute for Tropical Agriculture
ILRI	International Livestock Research Institute
IMC	International Medical Corps
IMCAFS	Global Program for Integrated Management of Coastal and Freshwater Systems
INRAN	National Agricultural Research Institute of Niger
INTSORMIL	International Sorghum and Millet CRSP
IQC	Indefinite quantity contract
IRD	International Relief and Development
IRG	International Resources Group

IRI	International Research Institute for Climatic Prediction
IRRI	International Rice Research Institute
ISFM	Integrated Soil Fertility Management
IUCN	World Conservation Union
IWRM	Integrated water resources management
KARI	Kenya Agricultural Research Institute
LAC	Bureau for Latin America and the Caribbean
LCIP	Liberia Community Infrastructure Project
LEAP	Leadership Enhancement in Agriculture Program
LRAD	Land Redistribution for Agricultural Development
LTT	Long-Term Training Initiative
LWA	Leader with Associate
MCC	Millennium Challenge Corporation
MDG	Millennium Development Goal
MOU	Memorandum of Understanding
MSU	Michigan State University
NARS	National Agricultural Research Systems
NECJOGHA	Network of Climate Journalists and Scientists of the GHA
NEPAD	New Partnership for Africa's Development
NGO	Nongovernmental Organizations
NOAA	National Oceanic and Atmospheric Administration (United States)
NRM	Natural Resources Management
OA	Ministry of Agriculture
OFDA	USAID Office of Foreign Disaster Assistance
OHVN	Office de la Haute Vallée du Niger
OPV	Open-Pollinated Maize Varieties
OTI	USAID Office of Transition Initiatives
PARIMA	Pastoral Risk Management Project
PCI	Peaceful Communities Initiative
PEARL	Partnership for Enhancing Agriculture in Rwanda through Linkages
PFID	Partnership for Food Industry Development
PLWA	People living with AIDS
PRSP	Poverty reduction strategy plans
RANET	Radio and Internet Technology for Communication of Weather and Climate Information to Rural Communities for Sustainable Development in Africa
RENEWAL	Regional Network on AIDS, Rural Livelihoods and Food Security
RFP	Request for Proposal
SADC	Southern Africa Development Community
SAKSS	Strategic Analysis and Knowledge Support System
SANREM	Sustainable Agriculture and Natural Resources Management CRSP
SEF	Sahelian Eco Farm

SLO	Scientific Liaison Officer
SME	Small and medium enterprises
SPARE	Strategic Partnership for Agricultural Research and Education
SPS	Sanitary and Phytosanitary Standards
SUCCESS	Sustainable Costal Communities and Ecosystems
TANA	The Agriculture and Nutrition Advantage
TSBF	Tropical Soil Biology and Fertility
UDP	Urea deep placement technology
UNU	United Nations University
US	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value-added tax
WAEMU	West African Economic and Monetary Union
WARDA	West African Rice Development Association
WFP	U.N. World Food Program
WfP	Water for the Poor Initiative
WIS	Women in Science Program
WTO	World Trade Organization
WUA	Water User Associations
WUASP	Water User Association Support Program
WWF	World Wildlife Fund