

# GROWING FOOD...



## CHANGING LIVES



### 2010 Annual Report





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For several years, IFDC published its annual report to coincide with the annual meeting of the IFDC Board of Directors (near the end of the third quarter of each year). This meant that the annual report provided information on parts of two years. With this annual report, IFDC is returning to its previous schedule of issuing an annual report after the end of each calendar year. Therefore, this report provides information about IFDC's activities during 2010. Any topics that were covered in the 2009-2010 annual report (issued in September 2010) have been updated with new information.



# Acronyms and Abbreviations

ACTESA – Alliance for Commodity Trade in Eastern and Southern Africa	IFAD – International Fund for Agricultural Development
AGMARK – Agricultural Market Development Trust	IPI – International Potash Institute
AGRA – Alliance for a Green Revolution in Africa	IPM – integrated pest management
AISSA – Agricultural Intensification in Sub-Saharan Africa	IPNI – International Plant Nutrition Institute
AMITSA – Agricultural Input Market Information and Transparency System for Africa	ISFM – integrated soil fertility management
AMPUs – Autonomous Mobile Processing Units	K – potassium
AUC – African Union Commission	M&E – monitoring and evaluation
AWD – alternate wetting and drying	MCC – Millenium Challenge Corporation
BMGF – Bill & Melinda Gates Foundation	MiDA – Millenium Development Authority
BoA – Board of Advisors	MINAGRI – Ministry of Agriculture and Animal Resources
CAADP – Comprehensive Africa Agriculture Development Program	MIS – market information systems
CASE – Competitive Agricultural Systems and Enterprises	mmt – million metric tons
CGIAR – Consultative Group on International Agricultural Research	MoA – Ministry of Agriculture
COMESA – Common Market for Eastern and Southern Africa	MoU – Memorandum of Understanding
CPPs – crop protection products	mt – metric ton(s)
DADTCO – Dutch Agricultural Development and Trading Company	N – nitrogen
DAE – Department of Agricultural Extension (Bangladesh)	NEPAD – New Partnership for Africa’s Development
DGIS – Netherlands Directorate-General for International Cooperation	NGOs – non-governmental organizations
DRC – Democratic Republic of Congo	P – phosphorus
EAC – East African Community	PLAR – participatory learning and action research
ECOWAS – Economic Community of West African States	PPP – public-private partnership
FAO – Food and Agriculture Organization of the United Nations	PR – phosphate rock
FDP – fertilizer deep placement	PRRI – Phosphate Research and Resources Initiative
GDA – Global Development Alliance	R&D – research and development
GDP – gross domestic product	RECs – regional economic communities
GIS – geographic information system	SADC – Southern African Development Community
GIZ – German Agency for Technical Cooperation	SMS – short message service
GoB – Government of Bangladesh	UDP – urea deep placement
GoR – Government of Rwanda	UEMOA – West African Economic and Monetary Union
ha – hectare(s)	USAID – United States Agency for International Development
IFA – International Fertilizer Industry Association	USDA – United States Department of Agriculture
	USG – urea supergranules
	VFRC – Virtual Fertilizer Research Center
	WARDA – Africa Rice Center

# 2010 Highlights

- Donor funding increased from \$44,192,000 in 2009 to \$60,521,000 in 2010 (a 37 percent increase), illustrating IFDC’s value to the global agricultural development effort.
- Projects began in several nations – Madagascar, Malawi, Swaziland, Zambia and Zimbabwe.
- The Virtual Fertilizer Research Center (VFRC) was created. The VFRC is a global research initiative to develop the next generation of fertilizers and fertilizer production technologies.
- The website [www.africafertilizer.org](http://www.africafertilizer.org) was launched. AfricaFertilizer.org is a global forum to disseminate and exchange information on fertilizers, soil fertility and other critical agricultural issues that face Africa.
- The IFDC website ([www.ifdc.org](http://www.ifdc.org)) was revised and relaunched. It provides a greater level of detail and information about the Center’s programs, projects and those it serves.
- As part of the Phosphate Research and Resources Initiative (PRRI), *World Phosphate Rock Reserves and Resources*, a major IFDC study estimating the amount of phosphate rock worldwide, was completed and released.
- Over two million farmers in Asia are using urea deep placement (UDP) technology on hundreds of thousands of hectares (ha) of land. Crop yields have increased, fertilizer use has decreased, money spent on fertilizers has decreased and fewer pollutants are entering the air and/or water.
- Because of the success of UDP technology in Asia, it was introduced in several African nations, with encouraging results to date. UDP technology is also being tested in Latin America.
- Through IFDC’s field training programs, over 500,000 smallholder farmers were trained in the use of proven agricultural technologies and better farming techniques.
- Over one million farmers have greater access to agricultural inputs (fertilizer, improved seeds and crop protection products, or CPPs) due to IFDC support and training of agro-dealers in numerous countries.
- A memorandum of understanding (MoU) was signed between IFDC and the African Union Commission (AUC).

Additional information about many of these highlights, as well as information about IFDC programs and projects, can be found on the pages that follow and on the IFDC website – [www.ifdc.org](http://www.ifdc.org).



# IFDC

Around the World



**Countries With Current  
IFDC Projects**

Albania  
Bangladesh  
Benin  
Burkina Faso  
Burundi  
Cape Verde  
Chad  
Côte d'Ivoire  
Democratic Republic of Congo  
Ethiopia  
Gambia  
Ghana  
Guinea  
Guinea-Bissau  
Guyana

Kenya  
Kyrgyzstan  
Liberia  
Madagascar  
Malawi  
Mali  
Mozambique  
Niger  
Nigeria  
Rwanda  
Senegal  
Sierra Leone  
South Africa  
Swaziland  
Tajikistan  
Tanzania  
Togo  
Uganda

United States of America  
Zambia  
Zimbabwe

**Countries With Previous  
IFDC Projects**

Afghanistan  
Algeria  
Angola  
Argentina  
Australia  
Azerbaijan  
Belgium  
Bolivia  
Brazil  
Burma  
Cambodia

Cameroon  
Canada  
Chile  
Colombia  
Costa Rica  
Dominican Republic  
Ecuador  
Egypt  
Greece  
Guatemala  
Haiti  
Honduras  
Hungary  
India  
Indonesia  
Israel  
Jamaica  
Jordan

Kazakhstan  
Kosovo  
Libya  
Malaysia  
Mexico  
Morocco  
Nepal  
New Zealand  
Pakistan  
Paraguay  
People's Republic of China  
Peru  
Philippines  
Romania  
Saudi Arabia  
Singapore  
South Korea  
Spain

Sri Lanka  
Sudan  
Syria  
Taiwan  
Thailand  
Trinidad  
Tunisia  
Turkey  
Ukraine  
United Arab Emirates  
Uruguay  
Uzbekistan  
Venezuela  
Vietnam  
Yugoslavia



# Message from the Chairman of the Board of Directors and the President and Chief Executive Officer



M. Peter McPherson  
Chairman of the Board



Amit H. Roy  
President and CEO

The theme of IFDC's last annual report was "Building for the Future." During 2010, IFDC continued to do just that, as IFDC activities took place in more than 30 nations located on five continents. Among other topics, projects that began in 2010 and others that ended in 2010 are featured in this annual report. In each project, IFDC used and is using donor funding to help smallholder farmers, agro-dealers and others along the agricultural value chain in developing nations as they continue "Growing Food...Changing Lives."

During 2010, prices of many commodities and foods began to rise significantly – at a time when the 2007-2008 world fuel/food/fertilizer crises were still fresh in the minds of many of IFDC's constituents. The price increases illustrate again why more effective fertilizers are needed to meet ever-increasing global food needs. IFDC launched the Virtual Fertilizer Research Center (VFRC) to develop new fertilizers that can produce more and better food using fewer natural resources, helping the world meet its current and future food and nutrition needs. More information about the VFRC is on pages 49-52.

Another key event of 2010 was the signing of a Memorandum of Understanding (MoU) between IFDC and the African Union Commission (AUC). The MoU formalizes the collaboration between the organizations in their mutual goal of improving African agriculture. The AUC and IFDC share a vision for African agriculture – a transformed agricultural sector that provides the basis for sustainable growth and prosperity, food security and poverty reduction on the African continent.

IFDC conducted critical research in 2010. Processes that make feasible the direct application of phosphate rock to crops were developed and refined (page 19). Research fortifying fertilizer with vitamins, secondary nutrients and micronutrients in order to improve plant and human health was laboratory-tested and will move to field trials in 2011 (page 21).

IFDC projects achieve results and improve the lives of millions in nations with developing economies. Traditionally, IFDC has conducted monitoring and evaluation (M&E) at the project level (often externally under criteria developed by individual funding agencies). As an example, an overview of the Improved Livelihood for Sidr-Affected Rice Farmers (ILSAFARM) project (found on pages 45-47) features impressive results in specific areas during the project's final year.

However, while achieving objectives has always been important, IFDC has not consistently put in place formal mechanisms to measure and report results. In 2011, we have initiated an organization-wide approach to M&E based on a conceptual framework, institutional best practice guidelines, increased technical support at the project level and summary reporting against goals laid out in the IFDC strategic plan.

We take this opportunity to thank the donors that have trusted IFDC to implement projects on their behalf and with their financial resources. We also want to thank IFDC's employees around the world who work diligently on behalf of smallholder farmers, agro-dealers and other members of the agricultural value chain. IFDC's mission and purpose remain clear and progress will continue as many of those IFDC serves move from the "poverty cycle" to the "prosperity cycle."

M. Peter McPherson  
Chairman, IFDC Board of Directors

Amit H. Roy  
IFDC President and  
Chief Executive Officer

# IFDC Board of Directors



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Ex Officio Board Member  
IFDC President and CEO  
United States



Vincent McAlister  
Ex Officio Board Member  
Secretary to the Board/IFDC Legal Counsel  
United States



## FDP/UDP Technology is Building Sustainability in Bangladesh

IFDC's efforts to extend fertilizer deep placement (FDP)/UDP technology are occurring in more than a dozen of the world's poorest countries in Asia and Africa. The greatest focus is in Bangladesh, where rice accounts for more than 75 percent of the crop area. Food security, rural income growth and resource conservation are major challenges that FDP/UDP are helping to solve.

UDP enables farmers to increase rice yields by up to 25 percent while applying one-third less nitrogen fertilizer. Importantly, this technology reduces nitrogen losses (to the atmosphere and water) by up to 50 percent when compared with conventional fertilizer application techniques. UDP provides benefits for farmers, the environment and the economy.

In 2010, with funding from the United States Agency for International Development (USAID), the Government of Bangladesh (GoB) and members of the European Union, IFDC worked to accelerate diffusion of UDP technology in close collaboration with the Bangladesh Ministry of Agriculture (MoA), its Department of Agricultural Extension (DAE), farmers and the private sector. Attention to both demand- and supply-related factors yielded increased farmer awareness and use of UDP technology. IFDC supported the establishment of a micro-enterprise supply system to provide farmers access to the high-quality fertilizer known locally as *Guti* urea.

IFDC pioneered the development of UDP and introduced it to Bangladesh. More than 500,000 Bangladeshi farmers have used UDP technology through the Expansion of Urea Deep Placement Technology in an Additional 80 Upazilas of Bangladesh project, the ILSAFARM project and the recently implemented Accelerating Agriculture Productivity Improvement in Bangladesh (AAPI) project. This progress was complemented by the Market Development in the Fertilizer Sector of Bangladesh (Katalyst) project, wherein IFDC is working to achieve improvements in the fertilizer market.



In 2010, the highly successful ILSAFARM project ended after achieving sustainable results. ILSAFARM provided classroom and hands-on training to more than 175,000 farmers devastated by Cyclone Sidr in the Barisal region. It also conducted almost 900 technology demonstrations and supported the development of over 200 suppliers of *Guti* urea.

The use of UDP technology resulted in an incremental increase in rice production of 74,000 metric tons (mt) and an average annual increase in individual income of over \$200. The GoB saved an estimated \$1.5 million on fertilizer imports and subsidies because farmers used 7,000 mt less urea. It is estimated that the two-year project contributed more than \$26 million to Bangladesh's gross domestic product (GDP).

### New IFDC Project Begins in Bangladesh

The AAPI project emphasizes UDP technology, along with improved use of quality seed and alternate wetting and drying (AWD), a water-saving technology that lowland (paddy) rice farmers can apply to reduce water use in irrigated fields.

AAPI targets 120 upazilas in the Barisal, Mymensingh and Khulna regions. The MoA and DAE are helping to leverage USAID-provided resources in order to rapidly extend UDP. The AAPI project will also continue to promote IFDC's goal of gender equity and provide women with expanded opportunities to increase food security and incomes.

Over the life of AAPI, more than three million farmers are expected to benefit and UDP use will be extended to an additional 1.8 million ha. Incremental farm incomes are estimated to be \$362/ha. Some 1,800 new enterprises will emerge to supply farmers with quality fertilizers, which will include Nitrogen-Phosphorus-Potassium (NPK) formulations that will support balanced fertilization. In addition to improving food security and farm incomes, the GoB is expected to save \$84.5 million due to a reduction in farmer use of subsidized fertilizer.



## EAD Overview

EAD focuses on alleviating hunger and poverty and establishing food security and agricultural sustainability in the countries it serves. EAD is working to accomplish these goals through a broad spectrum of activities related to soil nutrient management, private sector-led agribusiness development and resource conservation. The division emphasizes technology transfer, business linkage development, improved access to credit for private sector enterprises and policy analysis to support market-based development.

Human capacity building and institutional development are core activities in each EAD project. The division offers specialized programs to address the specific needs of each nation served while also addressing the common factors that lead to long-term food security. EAD seeks innovative ways to bring sustainable agricultural production systems to the nations in the division, with special attention to improved agro-input technologies.

### EAD Projects in:

Albania  
Bangladesh  
Kyrgyzstan  
Tajikistan



# SUCCESS STORY

## Kyrgyzstan's Follow-On Project Builds on a Decade of Progress



The Kyrgyz Republic is a small, mountainous and landlocked country with a total land area of about 200,000 square kilometers (sq km). Arable land accounts for about seven percent of the nation's total area. More than 70 percent of the Kyrgyz population of 5.43 million live in rural areas.

Southern Kyrgyzstan includes the Ferghana Valley, a highly populated area where arable land is used for intensive agricultural production. This region has a climate conducive for growing cotton, fruits, sunflowers, corn and other vegetables. However, the south is isolated from major export markets due to a poorly developed transportation infrastructure, the lack of an effective agro-processing sector and trade barriers imposed by neighboring Uzbekistan.

These were some of the challenges that faced IFDC and USAID when the original Kyrgyzstan Agro-Input Enterprise Development (KAED) project began. The KAED I and II projects have become models for private sector-led agribusiness development. KAED I (2001–2008) improved the productivity and profitability of the agricultural system in southern Kyrgyzstan, reduced poverty by generating employment in rural areas and increased social stability in the region. KAED II (2008–2010) expanded activities into northern Kyrgyzstan, helped integrate agro-input systems and markets nationwide and demonstrated how a private sector, market-based response to the 2008 food crisis could provide cost-effective support to farmers in need. USAID named KAED II “the best agricultural project” in the Central Asian Republics in 2010.

The two-year Kyrgyzstan Agro-Input Enterprise Development Follow-On project began September 1, 2010, and experienced a seamless transition because of experienced KAED II project staff and existing, well-established public and private sector relationships. The project is focusing on improving agribusiness performance, including technology introduction in the agriculture and livestock sectors, trade improvement and operational efficiency.

The Follow-On project is using a holistic approach to address land reclamation and soil fertility restoration issues because arable land represents a scarce natural resource, particularly in southern Kyrgyzstan. Efforts to bring unused soil into production are combined with knowledge transfer to farmers and use of quality inputs to maximize the impact of the intervention. For example, the project procured and distributed 120 mt of compound fertilizer for the winter wheat season and launched a fertilizer voucher program for 5,000 farmers in southern Kyrgyzstan.

On December 2, 2010, the Follow-On project entered into a public-private partnership (PPP) agreement with Oasis Agro LLC to develop a sustainable poultry feed industry and increase protein-based livestock feed in the country. The program provides farmers with training and access to key business resources to increase the amount of soybean acreage, improve production of high-quality edible sunflower oil and increase egg production. One of the partners (John Deere Company) is increasing its presence in Kyrgyzstan; this is important to technology introduction and business linkage development – both key elements in IFDC's sustainability strategy.

## PROJECT IMPACT

### Kyrgyz Farmers and Agro-Dealers Impacted by KAED I and II



One of the most important achievements of the original KAED project was the establishment of the Association of Agribusinessmen of Kyrgyzstan (AAK, known locally as “Jer Azygy”). Today the AAK dealer network offers quality agro-inputs to each of the more than 35 farm stores that serve an average customer base of 2,700 farmers.

Because of the dealer network, the average distance traveled by farmers to buy inputs has been reduced to 2.5 miles. Through the AAK, the KAED projects reached more than 330,000 farmers who were receptive to new technologies and willing to become market participants.

For example, Tatyana Belinskaya volunteered her farm to become the first KAED dairy demonstration farm. The project provided Belinskaya with high-protein livestock feed and mineral supplements for her cows, helped revise cattle feed rations, improved management practices, introduced modern veterinary services and improved the stock through artificial insemination.

Moreover, project consultants worked with Belinskaya to upgrade the sanitary conditions on the farm. These advanced methods of dairy cow care helped increase milk production from 14-15 liters per day/per cow to 24-25 liters per day. “I now understand that balanced feed rations including proteins and minerals as well as regular veterinary care are keys to better yields and healthier animals,” said Belinskaya.

In 2009 KAED II introduced the “no-tillage” technology for the first time on 20 ha of wheat in southern Kyrgyzstan. Farmers realized immediate benefits offered by the technology, saving financial resources and preserving the soil from further compaction.

Many farmers saved up to 50 percent on field operational costs (mainly from a reduction in fuel expenses). In the

fall of 2010, Kyrgyz wheat farmers planted 2,000 ha using no-tillage practices.

“The KAED II project helped me to double my income! I am now growing high-quality corn and harvested the largest yield I have ever produced,” said Kyrgyz farmer Sabira Jumabaeva. “I now realize that using quality agro-inputs is a key to receiving high yields.” Jumabaeva received humanitarian aid from KAED II following national political unrest in June 2010.





## FOCUS FEATURE

### EADN Improves Farmers' Access to Agro-Inputs While Strengthening Agro-Dealers

The goal of the Extending Agro-Input Dealer Networks (EADN) project is to contribute to the reduction of poverty in Kenya, Tanzania and Uganda by supporting smallholder farmers' efforts to improve economic returns and increase agricultural productivity. EADN is improving farmers' access to modern production technologies and yield-enhancing agro-inputs. Funded by the International Fund for Agricultural Development (IFAD), EADN activities also focus on strengthening the capacity of existing and new agro-dealers and extending agro-dealer outlets to rural areas to better serve farmers.

Progress is occurring because of EADN, despite difficult circumstances. Agricultural production in Kenya remains stagnant amid increasing food needs. Prior to EADN, farmers' use of agro-inputs was low and inefficient due to a lack of training of both farmers and agro-dealers. Also, the ratio of agricultural extension officers to farmers is poor – more officers are needed for long-term impact. In Tanzania smallholder farmers are unable to obtain the agro-inputs needed to grow adequate crops from increasingly depleted soils. This has been compounded by poor water control, increased pests and diseases. Agro-input use in Uganda is among the lowest in the world. Less than 10 percent of Ugandan farmers use fertilizer (fewer than two percent of smallholder farmers). Average fertilizer use is still less than one kg/ha/year while average soil nutrient depletion is more than 60 kg/ha/year. Furthermore, many in Uganda wrongly perceive that their soils are fertile and that inorganic fertilizers harm the soil.

Major reasons for the low rates of fertilizer and improved seed use are lack of availability and/or accessibility. These are caused by: farmers' inability to buy fertilizers due to high prices; rural agro-dealers' inadequate access to credit, preventing them from purchasing inputs in adequate quantities; few agro-dealers in rural areas, which causes farmers to travel long distances in order to purchase inputs; and agro-dealers' inadequate product and use knowledge, leading to an inability to offer reliable advice to farmers.



Establishing new agro-dealers and strengthening the agro-input supply chain through increased private sector involvement are benefits for farmers in the three EADN nations. They are achieved through: improving farmers' access to agro-inputs and technology; building and strengthening capacities of agro-dealers and extension agents; improving market transparency; developing and strengthening agro-dealer associations; increasing knowledge transfer through targeted training programs, product demonstrations and communications materials (such as leaflets and wall posters on safe agro-input use and handling); and establishing and fortifying market linkages along the agro-input value chain.

In 2010 EADN project activities were implemented in 20 districts in Kenya, 10 districts in Tanzania and 13 districts in Uganda. Implementation was carried out in collaboration with stakeholders including the MoA of each nation and their local departments, as well as other IFAD programs/projects.

EADN capacity-building activities were also implemented successfully. More than 500 agro-dealers were trained (219 in Kenya, 98 in Tanzania and 218 in Uganda). In addition, 39 public sector extension service providers from Kenya's MoA and 40 officials from Tanzania's MoA were trained. Crop demonstration plots were established (41 in Kenya, 31 in Tanzania and 39 in Uganda) and farmer field days were held on these plots. In Kenya, 12 farmer field days were held with 2,115 farmers and other stakeholders participating; in Tanzania seven farmer field days were held with nearly 1,700 farmers participating; while in Uganda four field days were organized with nearly 500 farmers participating.

Some of the demonstration plots proved that more efficient use of agro-inputs would double farmer yields. For example, maize demonstration plots in Kenya produced average yields of 3.6 mt/ha while the yields on typical farm plots averaged less than 1.8 mt/ha.



## ESAFD Overview

ESAFD works to increase agricultural productivity and farmer incomes. These goals are accomplished by improving farmers' knowledge of best agricultural practices, such as soil fertility management, and by improving their access to quality inputs and to output markets. Through collaboration with national and regional partner organizations, governments and donors, the division supports initiatives to develop competitive and sustainable agricultural value chains and to create an enabling environment for agricultural intensification and private sector development.

Other activities include association building, disseminating market information via modern communications technology and decreasing the competition between energy production and agricultural production. ESAFD's goal is to reach millions of farmers in the region, increasing their productivity by 50-100 percent and family incomes by 30-50 percent.

### ESAFD Projects in:

Burundi  
Democratic Republic of Congo  
Ethiopia  
Kenya  
Madagascar  
Malawi  
Mozambique  
Rwanda  
South Africa  
Swaziland  
Tanzania  
Uganda  
Zambia  
Zimbabwe



# SUCCESS STORY

## Using Mass Media Outlets to Spread Information to Smallholder Farmers



The Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST) and Sustainable Energy Production Through Woodlots and Agroforestry (SEW) projects used effective radio programs to spread information to smallholder farmers throughout Burundi, the Democratic Republic of Congo (DRC) and Rwanda during 2010. Many smallholder farmers in Central Africa's Great Lakes Region do not have access to the Internet, television and/or publications. However, most have access to radios and listen throughout the day.

Therefore, the projects provided information to radio stations in the region, produced programming and worked with partner organizations to provide additional content. Among the partners CATALIST worked with were the Ministry of Agriculture and Animal Resources (MINAGRI) and Caritas in Rwanda and the Federation des Organisations des Producteurs du Congo (FOPAC) in DRC's North Kivu province.

The programming varied in length – one- two- and 30-minute segments. The segments were re-broadcast on stations multiple times during agricultural programming time periods. In addition, segments were duplicated and re-broadcast on other stations throughout the region and placed on the CATALIST website. The programming took various forms – “straight” news, humorous skits, call-in question-and-answer sessions and interviews of subject matter experts and farmers “in the field.”

CATALIST topics included: integrated soil fertility management (ISFM); agricultural mechanization benefits; inventory credit systems; building/strengthening

agricultural value chains; animal husbandry; DRC agricultural and land ownership laws; Rural Women's Day; and World HIV/AIDS Day. SEW topics focused on: modern carbonization techniques and their environmental impact; entrepreneurial opportunities in charcoal, firewood and improved stoves; the charcoal and firewood value chains; and reforestation and the importance of maintaining woodlots. In addition, there was extensive media coverage of SEW activities, including: firewood and charcoal value chain workshops; informational meetings in Musanze and Bugesera, Rwanda; training in modern carbonization techniques; and National Tree Day in the three countries.

In addition to the radio programming, CATALIST and SEW staff held media training workshops for journalists. These multi-day workshops educated media on various agricultural and reforestation topics in a classroom setting, provided opportunities for the media to interview farmers and charcoal producers “in the fields” and arranged for teams of journalists to generate radio and TV reports and newspaper and Internet articles.

“A direct and positive outcome of the CATALIST/SEW media trainings was the founding of the Association of Agricultural Journalists of the DRC,” stated Jean-Baptiste Musabyimana, FOPAC's communications officer. CATALIST/SEW helped professionalize FOPAC's publications and other communications channels. Then Musabyimana helped organize a DRC-wide media training, patterned on the CATALIST/SEW trainings. Media from eight of DRC's 11 provinces attended the training, which was sponsored by three Belgian non-governmental organizations (NGOs).

## PROJECT IMPACT

### Transferring Technology and Information – CATALIST Successes in 2010

Transferring information to smallholder farmers through training has been a key IFDC tool for many years. IFDC's CATALIST project effectively used training and technology demonstrations across its three focus nations (Burundi, the DRC and Rwanda) during 2010.

More than 64,000 farmers attended CATALIST-sponsored farmer field schools that focused on agricultural intensification techniques for a variety of crop value chains (e.g., rice, maize, wheat, Irish potatoes, cassava, beans, tomatoes, eggplant, etc.). Most of the 2,000 farmer field schools also demonstrated ISFM and its soil health and crop yield benefits. Of the farmers who took part in the field schools, nearly 30,000 live in Burundi, more than 14,000 live in the DRC and more than 20,000 are Rwandans.

Importantly, about 53 percent of the total participants were women. Over the course of the CATALIST project, nearly 200,000 farmers have participated in CATALIST training activities. About one-third of the participants have been women, helping meet one of the many CATALIST goals – gender equity. Specifically, the goal was that at least 20 percent of the training participants would be women. That goal was certainly met in CATALIST trainings held during 2010.

IFDC conducted farmer field schools in conjunction with partners (producer organizations, farmer cooperatives and NGOs). Among the partners were ASOFAR and CAPAD in Burundi, LOFEPACO and COOCENKI in the DRC and Caritas, IMBARAGA and ARDI in Rwanda.

These and other partners worked with CATALIST project staff to manage the demonstrations and on a number of other activities. Because it is a project with a finite time frame, CATALIST was designed and has operated as a facilitator of technology and information transfer. For the most part, its partners are organizations that have more



permanence and therefore will help farmers sustain the CATALIST-led progress.

In addition to the farmer field schools, CATALIST also held 31 training-of-trainers programs for over 600 participants. These programs are critical because those who participated will go on to train thousands of others across the Great Lakes Region of Central Africa. Among the topics covered in these trainings were ISFM, agro-dealer development, market development, business planning, facilitation skills and inventory credit systems.





## FOCUS FEATURE

### Mobile Phone Technology Boosts Agricultural Markets

The use of cellular telephone technology in developing countries has skyrocketed – particularly in Africa, where more than 65 percent of the population have access to mobile coverage. Mobile phones are not only convenient and relatively inexpensive modes of communication; they are increasingly becoming essential business tools and are vital to economic development and progress.

Previously, data on commodity prices and agricultural inputs were often not readily accessible. Now farmers, traders and others in the agricultural value chain are using mobile phones to exchange real-time market and price information. Mobile- and web-based applications allow farmers to obtain weather updates, crop advisory services, market prices, insurance and other information, which facilitates better decision-making and reduces risks, transaction and travel costs. These applications better link suppliers and retailers and can make the transportation of crops and other services more efficient and cost-effective.

IFDC first used information and communication technology (ICT) in 1999, creating the African Fertilizer Market Information Network (AFAMIN) to collect and disseminate market information. AFAMIN linked Burkina Faso, Ghana, Nigeria and Togo on a web-based platform to exchange price information online. In 2004, IFDC's Strengthening Regional Networks of Market Information Systems and Traders' Organizations in West Africa (MISTOWA) project partnered with a private software company in Ghana to develop the TradeNet platform (now known as Esoko). TradeNet used short message service (SMS), or text messaging, allowing farmers and traders to use their mobile phones to post free listings and offers to buy or sell produce or agro-inputs. Funded by USAID, MISTOWA used the TradeNet platform to help users quickly and affordably compare prices of food crops in 15 West African countries.

The Ghana Agro-Dealer Development (GADD) project developed a mobile SMS and Internet application platform to link seed producers to agro-input retailers more effectively. During the 2010 minor cropping season,

agro-dealers were uncertain about where to obtain seeds. GADD sent a mass SMS message to about 1,000 dealers that seeds were available from a seed company in Ghana's Volta region (M&B Seed Company). More than 700 agro-dealers placed orders. To meet demand, M&B expanded its distribution points into nearby regions, which decreased the distance agro-dealers had to travel.

IFDC is now using the mFarms platform to help implement GADD and the Linking Farmers to Markets (FtM) project, both funded by the Alliance for a Green Revolution in Africa (AGRA). mFarms is an integrated ICT platform helping agricultural value chain stakeholders communicate with each other efficiently, establish and maintain business relationships and manage the flow of goods and services. mFarms supports production and supply chain management and permits users to exchange business information using mobile phones or the Internet. mFarms stores information on value chain participants in geo-referenced databases. As of December 2010, FtM had created electronic databases for a number of industrial buyers, 16 aggregators, 29 community warehouses, 20,000 farmers and their organizations and 3,500 agro-input dealers. The databases were then loaded onto the mFarms platform. "We show locations on Google Maps, which help farmers locate the nearest agro-dealer or produce buyer, thereby reducing transaction costs," explains Dr. Kofi Debrah, FtM project leader.

The penetration of mobile technology in developing countries offers practical options to farmers and others in the value chain to access critical information. In addition to utilizing mobile phone technology, IFDC has led the development of other decision-support tools including [www.africafertilizer.org](http://www.africafertilizer.org), a web-based portal created to disseminate and exchange information on various aspects of fertilizer, soil fertility and related agricultural issues that impact Africa. By coordinating programs on agro-input market information systems (MIS), IFDC is helping to build comprehensive, credible sources of information for all stakeholders, resulting in more efficient and transparent markets and ultimately improved livelihoods for those using the technology.



## NWAFD Overview

NWAFD encompasses an area that is sweeping in the size and scope of its agricultural, economic and social needs. NWAFD closely partners with organizations at regional, national and local levels, including regional economic communities (RECs), farmer organizations, government agencies, NGOs, research institutes, financial institutions and the private sector.

Projects address soil fertility, input and output market development and regional and national input policies. Capacity building of value chains and facilitation of enabling environments are key objectives. NWAFD supports the development/implementation of regional agricultural policies within the Economic Community of West African States (ECOWAS) and West African Economic and Monetary Union (UEMOA).

For more than 20 years, NWAFD projects have assisted millions of smallholder farmers, helping to move them away from subsistence farming. They are now agricultural entrepreneurs, able to actively participate in local and regional agricultural trade.

The division's agricultural intervention strategy addresses constraints to agricultural development through four areas of expertise: ISFM; input market development; output market development; and policy support.

### NWAFD Projects in:

Benin  
Burkina Faso  
Cape Verde  
Chad  
Côte d'Ivoire  
Gambia  
Ghana  
Guinea

Guinea-Bissau  
Liberia  
Mali  
Niger  
Nigeria  
Senegal  
Sierra Leone  
Togo



# SUCCESS STORY

## Urea Deep Placement: Expansion into Africa



Rice is the fastest-growing food source in Africa. While rice production on the continent is increasing at an annual rate of six percent, it is still not enough to keep up with rapidly growing demand. The main constraints to higher rice productivity in Africa are low soil fertility and poor management of crop nutrients – mainly nitrogen.

To increase rice production and nutrient efficiency, IFDC launched an initiative in 2009 to expand UDP technology into Africa. IFDC is promoting UDP adoption among resource-poor farming communities in Burkina Faso, Madagascar, Mali, Niger, Nigeria, Rwanda, Senegal and Togo. Project staff are working with the private sector to develop an effective and sustainable supply chain for urea supergranules (USG), USG production machinery and applicators.

Activities in 2010 focused on researching the agronomic and economic viability of UDP in Africa. Results varied among countries, but UDP-assisted rice yields increased by an average of 40 percent while using 30 percent less urea compared with farmers' traditional practices. Depending on the country, climate and fertilizer application rates, UDP used less urea fertilizer – up to 65 percent less, with an average of 33 percent less. Grain yields increased by up to 50 percent, with average increases ranging from 15 to 40 percent over grains fertilized with prilled urea.

"Soil type, water availability, agricultural practices and USG supply capacity differ among countries, making uniform application nearly impossible," says Dr. Bidjokazo Fofana, coordinator of the UDP Initiative. "We're conducting

adaptive research to tailor UDP to local conditions and eventually extend it to other crops such as maize, tomatoes and onions."

To improve access to UDP technology, 16 mt of prilled urea were converted into USG and 18 machines to manufacture USG were purchased from Bangladesh and distributed to program partners. Demonstration plots were established as learning and communications tools in 30 irrigated rice systems. In 2010, the program organized 60 field visits for 20,000 farmers, agro-dealers and entrepreneurs. Participants created business linkages to boost local production of USG and USG machinery. About 600 local scientists, extension agents and rice farmers participated in 30 training-of-trainers workshops held to strengthen technical expertise in fertilizer management.

In July 2010, a regional training workshop was held to introduce local experts to UDP field application. Another workshop was held in December 2010 to share progress on UDP promotion and to discuss a strategic plan for further expansion.

Also, a mechanical working group met in December 2010 to design and produce an applicator adapted for Africa. The group will provide opportunities for local production of USG machines and other UDP-related businesses.

Because UDP increases yields and incomes while saving nutrients, it is a very viable option for small-scale rice farmers in Africa. IFDC is currently working with project partners to develop a strategy for broader extension of the technology across the continent.

# PROJECT IMPACT

## MIR Plus Improves Agricultural Policy and Regulatory Environments

National agro-input markets in West Africa are too small to foster a dynamic and competitive environment. This hampers farmers' access to much-needed agricultural products. The promotion of a broader market that permits free movement of agro-inputs within the West African region will increase farmers' access and potential to increase agricultural production.

The Marketing Inputs Regionally Plus (MIR Plus) project is facilitating the development of a regional agro-input market in West Africa by building favorable policy and regulatory environments for competitive agro-input production and trade. The project is linking more than two million farmers to agro-dealers.

MIR Plus is funded by the Netherlands' Directorate-General for International Cooperation (DGIS) and implemented by IFDC. Operational costs are borne by ECOWAS and UEMOA with an additional contribution from DGIS. ECOWAS and UEMOA share an ongoing mission to create a common market based on the free movement of persons, goods, services and the establishment of common tariffs and trade policies.

MIR Plus is strengthening regulatory measures to protect farmers against unscrupulous vendors and promote fair competition, thus stimulating private investment in agro-inputs. Efforts are also made to increase policymakers' awareness of the importance of compliance with regional agro-input tariffs while advocating for the harmonization of value-added tax rates across countries.

Policy activities in 2010 included finalization of seed and CPP regulations and the development and technical validation of draft regulations on fertilizer quality control. Over 60 trial protocols were validated for testing the biological efficacy of CPPs to be submitted for registration to control pests. MIR Plus facilitated the participation of policymakers at an experience-sharing international



training program on market-friendly alternatives to subsidy administration.

Activities for 2011 include supporting ECOWAS- and UEMOA-validated regulations for seeds, fertilizer and CPPs and supporting the establishment of a West Africa Seed Committee and a West Africa Pesticide Registration Committee. MIR Plus will hold informational workshops on issues affecting the development of a regional market, such as the challenges and opportunities for domestic production and trade of agro-inputs, particularly fertilizers.





## FOCUS FEATURE

### Progress Continues on Phosphate Research and Resources Initiative

In September 2010, IFDC released *World Phosphate Rock Reserves and Resources*, a study estimating the global phosphate rock (PR) supply. Prepared by Steven J. Van Kauwenbergh, a principal scientist and leader of IFDC's Phosphate Research and Resources Initiative (PRRI), the report contains newly compiled data on the amount of PR located around the world. The study also evaluated the reserves of PR concentrate available.

For the last decade, intense speculation has surrounded the amount of phosphate reserves, with many claiming that world supplies are rapidly dwindling in amount and quality. The IFDC study counters assertions that PR production will "peak" in 2033-2034 and then decrease as reserves are depleted. In contrast, the study estimates the global phosphate supply will last several hundred years at current levels of use.

The study was extensively reviewed and deemed fundamentally sound. The U.S. Geological Survey revised its official world phosphate data utilizing the study as a major source. It continues to draw attention from the media and industry experts, and has been referenced in numerous articles, editorials and on various websites.

A primary benefit of the study is the attention brought to the issue of phosphate use efficiency. IFDC's multi-year Phosphate Efficiency Initiative is focusing on increasing efficiency through intensive scientific research and the development of new processing technologies.

Many countries in Sub-Saharan Africa that rely on fertilizer imports also have PR deposits that are not being commercially exploited for phosphate fertilizer production. Reasons for the non-exploitation include deposit size, quality and lack of infrastructure.

As part of IFDC's effort to promote efficient use of PR and to help smallholder farmers gain access to affordable fertilizers, IFDC has an aggressive scientific program

that promotes new technologies to utilize PR deposits as cost-effective fertilizers. IFDC is researching several technologies (i.e., grinding, compaction and combination with plants bioengineered to better absorb phosphorus) to improve the efficiency of directly applied PR.

The relatively low solubility of apatite, the primary mineral in PR – and consequently the low rates of absorption of phosphorus by plants – is the mineral's primary limitation for use as a direct application fertilizer. Only the surface of PR is reactive to extractants in the soil. Thus, large particles have less surface area available for reaction than smaller particles. As particle sizes are decreased, the effective surface area available for reaction is increased.

If higher solubility and agricultural productivity can be attained by increasing the reactive surface area, PR may be more suitable as a direct application fertilizer. In addition, low-value or uneconomical PR deposits might be mined utilizing new techniques that forego expensive processing to water-soluble fertilizer form, resulting in a product suitable for direct application.

IFDC is conducting ongoing experiments to determine processing methods that will decrease particle size, thus increasing the apatite's surface area. One experiment grinds rock samples to nanoparticle size (less than 100 nanometers).

Although results have yet to be released, PRRI researchers are optimistic. Experiments have shown that sedimentary PR with high carbonate substitution has particular promise for higher solubility using the nano-grinding process. Just as important, igneous rock with no carbonate substitution – considered to have little value as a direct application material – might be processed to the point that increased solubility levels make the PR an effective direct application source. Experiments are ongoing and will widen in scope over the next year.



## RDD Overview

Research and Development Division (RDD) activities encompass necessary disciplines associated with fertilizer technology and production, use and market development. RDD engages in and conducts fundamental and applied research required to produce cost-effective and more efficient fertilizers, develops integrated nutrient management strategies for agricultural intensification and addresses policy and supply/demand issues – all of which provide an enabling environment for fertilizer market development. Research is geared toward nutrient use efficiencies while market development initiatives pursue improvement in the fertilizer value chain.

As a result, national governments, private sector organizations, international institutions and development partners seek RDD's input and advice to support decisions in these critical domains. Additionally, IFDC's field programs draw on RDD scientific and technical expertise to assist in implementing projects and programs more effectively.

### RDD Focus Areas:

- Agro-Economics Unit
- Fertilizer Technology Unit
- Market Information Unit
- Agronomics Research
- Support Services
- Engineering Research
- Support Services



# SUCCESS STORY

## IFDC Human Health Focus: Mineral Fortification of Fertilizers



IFDC's research has historically focused on improving fertilizer production and use to generate sustained increases in agricultural productivity and greater access to nutritious food for the world's ever-growing population. In 2010, IFDC research also sought to improve human health through vitamin- and mineral-enriched fertilizers.

Specifically, zinc and iron deficiencies must be addressed to achieve a significant improvement in global human health. These nutritional deficiencies contribute to the death of nearly 500,000 children under five years of age each year. However, adequate levels of zinc prevent and treat pneumonia, diarrhea and other common infections.

Nutritional deficiencies are exacerbated when cereal crops are grown in zinc-deficient soils. For example, 48 percent of soils in India are zinc-deficient, while over 50 percent of Bangladeshi children are zinc-deficient due to soil deficiencies.

Over the last 20 years, various strategies to address this global health issue have been proposed, including mineral supplements, processed food fortification, genetic engineering of staple crops and the application of mineral-fortified fertilizers to crops. Mineral fortification is the most cost-effective and sustainable option. Applying mineral-enriched fertilizers to crops in the field avoids implementation delays due to government regulations and/or farmer resistance to new seed varieties.

In 2010, RDD began greenhouse experiments on a micronutrient-enriched core that is placed inside IFDC's successful deep-placement fertilizer briquette.

Dr. Upendra Singh, principal scientist and head of the new "core" technology project, asserts that the briquettes' increased use efficiency combined with its nutrient enrichment qualities will result in "higher nutrient content cropping." The mineral-fortified core increases the overall health of the crop and offers a sustainable nutrient delivery system to improve human health.

Initial greenhouse trials on spinach, wheat and rice using zinc-fortified urea fertilizer are promising. With the core technology, the zinc concentration in rice increased by 30 percent over urea alone; and increased 23 percent in wheat. Grain yields also increased – 17 percent and 14 percent in rice and wheat, respectively. The research also has shown a dynamic zinc/nitrogen relationship. Maximum zinc enrichment of grains is reached when the crops are supplied with sufficient nitrogen, which also promotes iron accumulation in grains.

The objective of the project is to offer cost-effective deep-placement fertilizers with customized micronutrient cores delivering zinc, iron, boron, iodine and/or selenium on an as-needed, year-to-year basis. The manufacturing process has also been studied extensively, and low-investment factory upgrades have been designed.

In-country field testing will begin in 2011 and will include collaboration with a test country's ministries of agriculture and health. Seed producers, NGOs and universities will also be involved to determine the rate of micronutrient transfer from plant to human. If successful, the IFDC micronutrient core technology will expand to manufacturing and distribution of this advanced fertilizer in both briquette and granular forms.

## PROJECT IMPACT

### RDD Agro-Economics and Marketing

New fertilizer technologies are scrutinized by RDD for viability and suitability based on IFDC socio-economic and marketing analyses of conditions in developing nations, as well as global fertilizer supply, demand and price. In 2010, RDD's Agro-Economics and Market Information units provided a number of analytical and technical support services including:

**Policy Analysis and Reforms** – Policies affecting fertilizer sector development in Côte d'Ivoire, Ghana, Kenya, Mozambique and Tanzania were assessed. Based on recommendations and a companion fertilizer value chain assessment, the Bill & Melinda Gates Foundation (BMGF) will establish an agency to support fertilizer market development in Sub-Saharan Africa.

**The Value Chain Analysis** – On behalf of the BMGF, IFDC conducted an assessment of fertilizer value chain constraints in the countries listed above. Constraints included government policies, inefficient procurement/distribution, inefficient subsidy program tendering, ineffective regulatory systems and limited access to credit. Each constraint negatively affects supply systems' performance, results in higher prices and limits fertilizer access. The BMGF agency will target these constraints, focusing first on improving access to credit.

**The Market-Friendly Safety Net** – In Mozambique, Nigeria and Rwanda, RDD provided guidance in the design, implementation and management of fertilizer voucher programs. The programs benefited more than 500,000 farmers in 2010, strengthening agro-dealer networks, improving fertilizer distribution and improving farmer access to fertilizers through more effective purchasing power support.

**Techno-Economic Assessment** – RDD assessed fertilizer plants in seven southern African nations. The study led Zimbabwe to remove restrictions on fertilizer



exports to neighboring countries, improving fertilizer plant efficiencies. RDD also assessed the viability of a regional fertilizer warehouse at the port of Beira and promoted other private sector investments at the Beira and Dar es Salaam ports.

**Fertilizer Database** – RDD's Market Information Unit maintains fertilizer market data, including plant capacities, fertilizer prices, production costs and fertilizer demand forecasts. IFDC and other organizations use the data in project development, program analyses and for industry outlook reports.







During 2010, IFDC provided field training to nearly 550,000 participants. While this is down substantially from the one million trained in 2009, this decline can be explained by various projects' cycles (closing out and start-up processes) that slowed training activities. The proportion of women trained in 2010 also decreased from 32 percent to 26 percent.

Despite these cyclical fluctuations that affected some projects, the training audience significantly increased in many countries due to new projects (for instance in Ghana, Mozambique and Nigeria) and the expansion of activities (in Bangladesh and central Africa).

Beyond the quantitative data, the most important point about the 2010 field training is the variety of topics covered. The training sessions provided were of great importance to the smallholder farmers and agro-dealers who participated.

#### EurAsia Division

**Bangladesh** – FDP training for use on the wetland rice crop was conducted for farmers and agro-input dealers. All were trained on the balanced use of fertilizers, and the agro-input dealers were also trained on the operation and maintenance of the USG briquette manufacturing machines and the business techniques needed for the manufacture and marketing of USG briquettes. The training program for DAE officials focused on FDP and AWD technologies. In total, 202,755 participants were trained by the three IFDC projects in Bangladesh (Expansion of UDP in 80 Additional Upazilas, ILSAFARM and AAPI). The total trained in 2010 increased by 44 percent over 2009.

**Kyrgyzstan** – The KAED II project increased its training audience by 8.7 percent (from 2,863 in 2009 to 3,112 in 2010). Participants were trained in numerous areas, including: dairy cattle management, CPPs, integrated pest management (IPM) methods, advanced irrigation techniques for value-added crops, PPP business models,

improvement of soil fertility in eroded lands and association and business management.

**Tajikistan** – The USAID Productive Agriculture in Tajikistan (PRO-APT) project organized 64 training courses, and 1,377 farmers and dealers were trained. Among them, 139 were women who made up 10 percent of the total number of participants. Participants received training in IPM (for onion, lemon, tomato, melon and apricot crops), fertilizer use efficiency on vegetables, fertilizer marketing strategies for agro-dealers, beef production and other agricultural techniques.

#### East and Southern Africa Division

**Central Africa** – The CATALIST project's training activities were focused on two types of participants – training-of-trainers (in ISFM, agro-dealer development, market development, business planning, facilitation skills and inventory credit systems) and training of farmers by facilitators (farmer field schools). CATALIST increased the year-over-year number of farmers trained by 82 percent (from 35,504 to 64,529 – of whom 53 percent were women). The SEW project trained 819 participants, mainly in modern carbonization techniques, woodlots and agro-forestry systems management and entrepreneurship.

**East and Southern Africa** – COMESA's Regional Agricultural Inputs Program (COMRAP) is strengthening agro-dealer networks in eight countries. Objectives are to improve farmers' access to quality agro-inputs and agricultural advisory services and to create output market opportunities for agricultural commodities through training and capacity building of national and regional input suppliers. Through training activities that started in September 2010, COMRAP has already reached 1,484 participants from Kenya, Rwanda, Swaziland and Zambia. Women represented 61 percent of the agro-dealers trained. The training programs focused on training-of-trainers under the monitoring and quality assurance of IFDC and regional partner Agricultural Market Development Trust (AGMARK). Once 7,000 agro-dealers

and agents are trained, an MoA-certified inspection and accreditation program will be rolled out to incentivize adherence to accepted standards of agro-dealer business practices.

**Kenya, Uganda, Tanzania** – EADN continued to focus its training activities on agro-dealers in East Africa. Topics covered included: sources of crop nutrients; organic and inorganic fertilizer products (characteristics, nutrient value and selection criteria); fertilizer application techniques; importance of improved seeds; principles of agribusiness marketing; inventory management; demand forecasting; and agro-dealer credit. The training audience increased by 11 percent from 753 to 838 participants.

**Mozambique** – Through the Mozambique Agro-Dealer Development (MADD) project, the number trained increased from 433 to 8,065 participants. The project trained new and existing agro-dealers to enhance their product knowledge and improve their business skills and profitability in the production, importation and distribution of fertilizer, seed and other inputs. Topics covered are in five modules: (1) product knowledge; (2) marketing and salesmanship; (3) business management and networking; (4) logistics management; and (5) delivery and technologies of crop production and input use.

**Uganda** – The USAID-supported Livelihoods and Enterprises for Agricultural Development (LEAD) project reached 1,247 agro-dealers (77 percent of whom were women). Training topics included: product knowledge (fertilizers, seeds and CPPs); crop nutrient uptake; marketing principles; outreach to farmers' and producers' organizations; and access to market information and credit. The trainings were carried out in collaboration with the Ministry of Agriculture, Animal Industry and Fisheries, Uganda National Agro-Inputs Dealers Association, the Uganda Seed Traders Association and others.

#### North and West Africa Division

**Benin** – The Improving Access to Non-Cotton Inputs project aims to increase the crop productivity (by 40 percent) and incomes (by 20 percent) of farmers engaged in rice, maize and pineapple commodity value chains. The project trained 3,032 participants – mainly the leaders of producers' organizations and extension agents working with them. The training focused on agro-business plan development, rice seed production, agro-input management, maize and rice stockpiling and conservation techniques, as well as microfinance loan management.

**Mali** – The Développement Economique à la Base par les Pôles d'Entreprise Agricoles (DEB-PEA) project organized training in business development and agro-input distribution in rural areas. In 2010 there were 10,789 participants (46 percent were women). Training topics included elements of Competitive Agricultural Systems and Enterprises (CASE): environmental

management; financial management; rural cooperative management; and improved agricultural practices (including ISFM, IPM and UDP).

**Ghana** – Three projects trained 19,801 participants, nearly tripling the training outreach of IFDC Ghana in 2009 (6,879 participants).

- **Ghana MCC/CDFO** – Under the Millennium Challenge Corporation (MCC) and Commercial Development of Farmer-Based Organizations (CDFO) projects, there were two stages of training. The first stage, "Farmer and Enterprise Training," is designed to empower farmer organizations in agricultural transformation. Participating organizations produce medium-term business plans for evaluation and review by IFDC. The second stage focused on value chain activities – crop production, increasing crop yields, marketing and processing.
- **Ghana Agro-Dealer Development Project (GADD)** – Implemented in partnership with the Ghana Agricultural Associations' Business and Information Centre with funding from AGRA, the project trained value chain members including agro-input dealers, seed producers and farmers.
- **Linking Farmers to Markets (FtM)** – Launched in mid-2010, the project organized a training-of-trainers program on post-harvest management for 60 partners who work with FtM to aggregate produce from farmers for sale to large buyers. This training was designed to solve post-harvest losses, in which 20 to 30 percent of farmers' produce spoils or is lost to pests and/or poor handling and storage.

**Nigeria (NADS, GFSR, Cassava Plus)** – The three projects reached 6,058 participants, more than double the outreach of IFDC Nigeria in 2009. The Nigeria Agro-Input Dealer Support (NADS) project trained 432 agro-dealers on UDP techniques that will result in 26-36 percent less urea use and a 25 percent reduction in expenditures for hired labor for weeding. The Global Food Security Response (GFSR) project assisted 5,147 state-certified producer associations in Bauchi and Kano states in trainings that prepared these associations for the 2010 Fertilizer Voucher Program. Cassava Plus focused on agro-dealer and farmer training: agro-dealers were trained in the procurement, preservation and distribution of cassava stems; while farmers were trained in cassava planting, field preparation and fertilizer application.

**West Africa Cotton Improvement Program (WACIP)** – The major reason for the decrease in the number of those trained in 2010 (compared with 2009) was because the WACIP program was ending. In 2010, WACIP trained 6,076 persons (3,896 men and 2,180 women), compared with more than 650,000 in 2009. However, training was provided on an array of topics:



- 4,023 (1,036 women) were trained to assess and manage biotechnology and biosafety-related risks and issues of genetically engineered cotton.
- 1,319 artisans (1,072 women) were trained in the basics of small enterprise management, international marketing strategies and requirements, modern textile production methods and measures to reduce occupational and environmental risks.
- Other topics included: application of improved data collection methods; M&E methods; use of global positioning systems; cotton value addition; and cotton pricing mechanisms.

**West Africa** – The From Thousands to Millions project continued to train trainers and support trainings for many farmers. Through this capacity building and multiplier effect, the project reached 152,045 participants (96,220 men and 55,825 women), compared with 157,743 in 2009. Training took place in seven West African nations (Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria and Togo). Training covered diverse topics including CASE, ISFM and other best agricultural practices, improved processing practices, hygiene and quality control, results-based management and M&E.

**West Africa (SAADA-C, IFAD Grant 1174, WARDA-REI, CORAF/KKM)** – Natural Resource Management-related training programs reached 54,704 participants (compared with 8,603 in 2009). The increase was due primarily to the Rice Emergency Initiative to boost rice production in West Africa, the dissemination of the UDP and Chapin bucket drip irrigation system technology and support from the IFAD-funded project (Grant 1174). Training activities focused on participatory learning and action research (PLAR) applied to ISFM at farmer and technician levels.

**West Africa** – MIR Plus trained 10,369 participants, including 2,072 women in Benin, Burkina Faso, Côte d’Ivoire, Ghana, Mali, Niger, Nigeria and Senegal:

- 10,054 farmers and agro-dealers (including 2,010 women) received training on safe handling and the use of agro-chemicals, demand pooling and agro-input procurement.
- 251 agro-dealers and enumerators received training on basic computer skills for agro-input price data collection.
- 56 farmers and agronomists received training in basic ISFM strategies and UDP technology at a regional training-of-trainers workshop.
- Eight representatives of ECOWAS nations were trained in fertilizer quality assessment.

Number of Training Programs and Participants by IFDC Projects in 2010 in Comparison with 2009

		2009				2010				
No.	IFDC Project	#Tr.Pr.	# of 2009 Participants			#Tr.Pr.	# of 2010 Participants			
			Women	Men	Total		Women	Men	Total	Progress (+/-)
	<b>EAD</b>	<b>3,601</b>	<b>6,329</b>	<b>140,883</b>	<b>147,212</b>	<b>4,798</b>	<b>19,970</b>	<b>187,274</b>	<b>207,244</b>	<b>52.67%</b>
1	Afghanistan (ASAP, FARMS)	24	6	3514	3520					
2	Bangladesh (UDP, ILSAFARM, AAPI)	3,537	5,825	135,004	140,829	4,672	18,945	183,810	202,755	44.0%
3	Kyrgyzstan (KAED II)	40	498	2,365	2,863	62	886	2,226	3,112	8.7%
4	Tajikistan					64	139	1,238	1,377	
	<b>ESAFD</b>	<b>1,629</b>	<b>18,404</b>	<b>18,286</b>	<b>36,690</b>	<b>2,120</b>	<b>34,942</b>	<b>41,413</b>	<b>76,355</b>	<b>108.11%</b>
5	Central Africa (CATALIST/SEW)	1,601	17,803	17,701	35,504	2,062	31,491	34,477	65,968	85.8%
6	East & Southern Africa (COMRAP)					22	909	575	1,484	
7	Kenya, Uganda, Tanzania (EADN)	25	564	189	753	29	268	570	838	11.3%
8	Mozambique (AIMS and MIM)	3	37	396	433	7	2,274	5,791	8,065	1762.6%
9	Uganda (LEAD)					40	955	292	1,247	
	<b>NWAFD</b>	<b>792</b>	<b>300,718</b>	<b>527,566</b>	<b>828,284</b>	<b>1,272</b>	<b>89,306</b>	<b>173,568</b>	<b>262,874</b>	<b>-68.3%</b>
10	Benin (Non-Cotton Crops Productivity)					13	443	2,589	3,032	
11	Ghana (MCC/CDFO, GADD, FtM)	27	3,468	3,411	6,879	52	9,481	10,320	19,801	163.2%
12	Mali (DEB-PEA)					66	5,023	5,766	10,789	
13	Nigeria (NADS, GFSR, Cassava+)	98	77	2,695	2,772	51	1,117	4,941	6,058	118.5%
14	West Africa (Thousands to Millions)	576	63,247	94,496	157,743	564	55,825	96,220	152,045	-3.6%
15	West Africa (NRM-related projects)	73	1,679	6,924	8,603	82	13,177	41,527	54,704	535.9%
16	West Africa (WACIP)	18	232,247	420,040	652,287	13	2,168	3,908	6,076	-99.1%
17	West Africa (MIR Plus)					431	2,072	8,297	10,369	
	<b>Total</b>	<b>6,022</b>	<b>325,451</b>	<b>686,735</b>	<b>1,012,186</b>	<b>8,190</b>	<b>144,218</b>	<b>402,255</b>	<b>546,473</b>	<b>-46.0%</b>

Tr.Pr. = Training program

# IFDC Projects

IFDC began new projects and ended others in each of its three geographic divisions. Project overviews begin below. Additional information about the projects can be found at [www.ifdc.org/projects](http://www.ifdc.org/projects).

(The division providing oversight for each project is listed in parentheses following the project name.)

## IFDC Projects that Began in 2010

### Accelerating Agriculture Productivity Improvement (EAD)

IFDC has been working in Bangladesh since 1978. IFDC’s primary objectives in the country continue to be to increase food security and alleviate poverty by improving the agricultural productivity of smallholder farmers. The AAPI project will achieve increased yields and incomes for farmers through improved resource use efficiency. The five-year project (2010-2015) is funded by USAID.

AAPI's focus is on technology diffusion and development of support systems to achieve sustainability. FDP is the primary technology being promoted.

IFDC pioneered FDP and UDP – technologies that substantially improve crop yields using less fertilizer – and introduced them in Bangladesh nearly 20 years ago. FDP is well-suited to rice production and it is also better for the environment because it significantly reduces nitrogen losses over traditional fertilization methods.

Most farmers broadcast urea (the most common nitrogen-based fertilizer) directly into the floodwater of lowland rice fields. This method ultimately wastes two of every three bags of urea. With FDP, farmers insert large urea briquettes into the rice root zone after transplanting, reducing fertilizer use by 40 percent while increasing crop yields by 25 to 40 percent. And because the briquettes are placed beneath the soil, fewer weeds grow.

The FDP/UDP technology also offers entrepreneurs business opportunities. IFDC’s economic strategy to

strengthen the private sector includes establishing village-level businesses to manufacture both briquettes and briquette-making machines.

Working to improve resource use efficiency in agricultural production systems, the AAPI project is also supporting water management techniques such as AWD, a water-saving technology that lowland (paddy) rice farmers can utilize to reduce water use in irrigated fields. With AWD, water from irrigation sources is applied to flood a field when pond water is not available. In addition to saving water, AWD results in higher paddy productivity, less harm to the environment, enhanced nutrient efficiency and lower levels of pest infestation.

AAPI is also facilitating gender equity and opportunities for women. The project has a target of 20 percent participation by women in technology diffusion training (including entrepreneurial and managerial training). Women are also being encouraged to own micro-enterprise briquette manufacturing machines.

The Bangladesh MoA and its DAE are playing key roles in disseminating information, particularly by implementing demonstrations of the FDP and AWD technologies and ongoing farmer education. The Bangladesh Fertilizer Association is also supporting efforts to strengthen the supply system for FDP products.



### Cassava Plus (NWAFFD)

Between seven and eight million Nigerian farming families grow cassava, harvesting over 38 million mt of fresh cassava roots per year. Nigeria is the largest cassava-producing country in the world, and cassava is an important staple food for both rural and urban populations in Nigeria (and other African nations). Nonetheless, agricultural imports continue to rise as Nigeria consumes increasing quantities of imported wheat, Asian rice and other foodstuffs.

As a sustainable alternative to these imports, cassava can be used as a substitute for wheat and maize in the production of bread, pastries, seasoning cubes and snack foods. It is also a prime source for starch derivatives for the soft drink and brewing industries. The Government of Nigeria recognized the potential of cassava and in 2005 passed a law requiring a gradual increase in the cassava flour content in bread to 10 percent.

As a result, the commercial market demand for cassava flour has grown to over 300,000 mt. Yet, even with this progress, the lack of market infrastructure and suitable processing technologies has hindered the scaling-up of cassava to an industrial level. For Nigeria and other countries to make progress in the commercial development of cassava, agricultural value chain intervention was required.

Cassava Plus is a PPP to commercialize cassava production by linking farmers to value-added markets. The three-year project (2010-2012) is financed by the Schokland Fund, which was established by DGIS. Cassava Plus is implemented by IFDC and the Dutch Agricultural Development and Trading Company (DADTCO), a private enterprise specializing in large-volume commercial agricultural products with high trade potential.

The aim of Cassava Plus is to strengthen the market capacities of 164,000 cassava farmers in three Nigerian states. The crop is popular among African farmers because it is relatively drought-resistant and can grow even in poor soils. However, cassava is primarily a subsistence crop, grown for home consumption and for sale in local markets. Cassava has not become a commercial crop for several reasons, including extensive labor requirements, short after-harvest "shelf-life" and few stable linkages to processing and storage facilities.

A major problem is that cassava spoils quickly after being harvested. Deterioration occurs within 48 hours, making it difficult for traditional processing companies to collect and process it prior to spoilage. However, DADTCO has developed Autonomous Mobile Processing Units (AMPUs), which reduces the need for farmers to transport the perishable cassava over long distances. Each mobile unit has a self-sustaining power supply, which allows it to move near farmers' cassava fields and begin processing.

The project is expected to generate a stable supply of cassava for the wholesale market while increasing village-level employment opportunities through expanded cassava production and AMPU operation. To further assist targeted farmers and to motivate others to participate in the project, DADTCO has created a guaranteed-purchase program for those who provide their cassava crop for processing by the AMPUs.

To further build market capacity, IFDC is helping farmers access quality agro-inputs (fertilizers, seeds, CPPs and water), and adopt best management farm practices designed to increase productivity and return nutrients to depleted soils.

IFDC is also training agro-dealers in improved production techniques and high-quality inputs supply. These agro-dealers will then introduce the new technologies and educate their farmer-customers in the proper use of inputs. In addition, to meet the most immediate project challenge, IFDC is organizing and mobilizing farmers to comply with and support the new supply chain, addressing local harvesting, transport and other logistical issues.

The Cassava Plus trial program is focused in Nigeria's Benue, Osun and Taraba states. Cassava farmers in

these areas produce about 13 mt/ha. Through IFDC intervention, production will increase to at least 23 mt/ha. As a result, average annual net income will rise by about \$250 per hectare per farmer, a 62 percent increase from current income levels.

Cassava Plus should also help increase farmers' incomes from rotational and staple crops such as soybeans and pigeon peas, raising annual incomes by another \$250 per farmer, more than doubling average incomes. Cumulatively, the project is expected to generate an additional \$81 million in net income for farmers, and

create an increase in the annual supply of fresh cassava roots by 2.2 million mt, a six percent increase in average national production.

Upon completion of the project's test phase, successes and lessons learned will be transferred to other areas of Nigeria, as well as Ghana, Togo and other West African countries in the region's cassava belt.

See the Special Report which begins on page 35 for more information on the Cassava Plus project.

## COMRAP

COMRAP is responding to rising food prices by increasing agricultural productivity through improved access to finance, fertilizer and seeds.

### COMESA's Regional Agricultural Inputs Program (ESAIFD)

In eastern and southern Africa more than 60 percent of the inhabitants are undernourished. The food security of over 250 million people in the region was threatened when the prices of staple foods doubled during 2007-08. Food prices began rising again in 2010. The Common Market for Eastern and Southern Africa (COMESA) is working to alleviate poverty by promoting regional agricultural integration and removing trade and investment barriers.

COMESA is an REC that encompasses 19 African states: Burundi, Comoros, DRC, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

COMRAP is responding to rising food prices by increasing agricultural productivity through improved access to finance, fertilizer and seeds. COMRAP is a two-year project implemented by the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) and funded by the European Union Food Facility Program.

The project is targeting three million smallholder farmers in Burundi, Ethiopia, Malawi, Rwanda, Swaziland, Uganda, Zambia and Zimbabwe. About 10 to 15 percent of smallholder farmers in each country will be reached by the COMRAP project.

The project is expected to achieve the following: a) financial services are improved; b) agro-dealer networks are strengthened or established and after-harvest trade for key value chains is supported; and c) commodity chains for seed and plant material are supported.

As a facilitating partner, IFDC is implementing the agro-dealer development component of COMRAP in association with AGMARK. Agro-dealers play a crucial role in the delivery of inputs to farmers and are critical to the project's success.

In collaboration with farmer organizations, IFDC is conducting baseline surveys on agro-input distribution, fertilizer and seed use and the identification of appropriate agro-dealers. In addition, IFDC is conducting training needs assessments, developing curricula and holding courses for selected agro-dealers. After completing six months of training, trainees receive agro-dealer certification. Continuing education courses are then held on agricultural extension and marketing.

These agro-dealer networks will facilitate dealers' access to financial services, strengthen their ability to deliver more inputs in a timely manner and improve the quality of technical advice to farmers. This will stimulate smallholder farmers' demand for improved agro-inputs and facilitate the marketing of their surplus production.





Following the successful completion of training-of-trainers workshops in Kenya, Rwanda, Swaziland and Zambia, IFDC began in-country training sessions for agro-dealers and their agents, in association with AGMARK and host-country partners. The first in-country training session was held in Kampala, Uganda. Nearly

100 agro-dealers (including 38 women) and 80 agents (nine women) were trained. The second and third training sessions took place in Swaziland and in Zimbabwe. The in-country training will continue until July 2011, with networks of nearly 5,800 agro-dealers and agents trained across the eight countries.

# Katalyst

Improved soil nutrient management, supported by irrigation and quality seed, is a key component of the Bangladesh government’s strategy to improve yields on a sustainable basis.

## Katalyst (EAD)

Agriculture is the backbone of the Bangladesh economy. The country’s staple food is rice and it accounts for about 77 percent of the country’s total cropped area. Crop diversification to maize and vegetable production has been successful in certain parts of the country; maize has been particularly important as livestock feed.

Despite its crucial role, the agricultural sector is under-performing; actual crop yields remain at 50 percent of their potential. Soil nutrient levels of phosphorus, potassium, secondary nutrients and micronutrients are being depleted through nutrient mining. Therefore, improved soil nutrient management, supported by irrigation and quality seed and fertilizer, is a key component of the Bangladesh government’s strategy to improve yields on a sustainable basis.

To achieve sustainable crop yield growth through soil health and fertility management, the Katalyst project is working to: a) promote correct fertilizer management practices; b) ensure availability of fertilizers at the farm level for balanced fertilizer application; and c) facilitate a market-friendly regulatory framework.

IFDC’s role in the Katalyst project is to provide services and expertise to improve market development in Bangladesh’s fertilizer sector. The project focuses on increasing the yields of rice, maize, jute and potato crops through the effective, efficient and correct use of fertilizer and other agro-inputs.

Katalyst is implemented under the Bangladesh Ministry of Commerce by Swisscontact and the German Agency for Technical Cooperation (GIZ). The project is jointly funded by the Swiss Agency for Development and Cooperation, the United Kingdom’s Department for International

Development, the Canadian International Development Agency and the Embassies of the Kingdom of the Netherlands.

## Kyrgyzstan Agro-Input Enterprise Development Follow-On (EAD)

The Kyrgyzstan Agro-Input Enterprise Development Follow-On project is helping to counter setbacks to agricultural intensification in the wake of political and social disruptions that took place in the country during the spring of 2010. Mirroring predecessor projects which ran from 2001 to 2010, IFDC is mobilizing and supporting private enterprise entrepreneurs, farmers and commodity chains that offer the greatest potential to improve sustainable agricultural production and food security. The two-year (2010-2012) Follow-On project is also focusing on improving employment opportunities, particularly in the southern areas of the country.

The previous two-year KAED II project demonstrated how a private sector, market-based response to the food crisis of 2008 could provide cost-effective support to farmers in need, while simultaneously providing the incentives and foundations for increased production and incomes. Through the award-winning KAED II project, USAID provided emergency relief by funding improved seed varieties, livestock feed and fertilizer, which were distributed at a subsidized cost through private sector value chain participants. Farmers who would use the inputs most effectively to increase production were also included. In 2009, these efforts, combined with favorable weather conditions, contributed to a record wheat harvest that met the nation’s annual demand for the first time in years. The Follow-On project is assisting the Kyrgyz agricultural sector to reach those record harvests again, with a projected one million metric tons (mmt) of

wheat to be produced in 2011. The project is also further expanding distribution systems and networks to achieve sustained agricultural independence.

The Follow-On project is focusing on 20,000 farmers who are planting the USAID-funded improved wheat varieties and an additional 80,000 farmers who are adopting better farming and animal care practices as a result of various project initiatives. Among those initiatives is the public outreach campaign that has made the USAID/KAED brand so widely recognized in Kyrgyzstan. As institutional support, a strategically designed set of interventions is improving farmer awareness of best agricultural practices and knowledge of, and access to, yield-enhancing agricultural production technologies and related support services. The Follow-On project is also introducing a market-friendly voucher system and revolving fund for the distribution of the fertilizer procured by the project. The voucher system will target farmers who have the greatest potential to double the country’s average wheat yields.

The recent Global Development Alliance (GDA) between USAID and the Eurasia Group is a result of persistent efforts to attract international companies to the relatively small Kyrgyz market. The alliance is a prime example of PPPs in promising areas such as poultry production and the related potential for growth in protein-rich crops for feed. The Follow-On project is creating additional PPPs to facilitate technology introduction and business linkage development – both essential to market sustainability.

Components that will support the continued IFDC/USAID successes in Kyrgyzstan include: land rehabilitation; new PPPs to promote poultry and high-value feed crops; continued efforts to improve farming practices and sustainable support systems; collaboration with incentive-based service providers such as the AAK and other organizations; and a solid public outreach program.

## Kyrgyzstan Local Economic Development Program (EAD)

USAID has also launched the Kyrgyzstan Local Economic Development Project (KLDP), and IFDC is a sub-contractor to Chemonics on the project. KLDP is stimulating rapid, diversified and sustained agro-economic growth at the local level through improvements in Kyrgyzstan’s business and investment environment. KLDP is increasing municipal finance and capital investment and improving the competitiveness of sectors with the greatest economic potential – specifically agriculture and agro-processing.

KLDP is upgrading workforce education, replicating best practices and implementing economic and administrative reforms at the national level. Together, the Follow-On and KLDP

projects are working to replicate the earlier Markaz Joint Agricultural Initiative, which transformed degraded land into productive farms and helped to generate lasting employment opportunities.

## Linking Farmers to Markets (NWAFFD)

Agricultural development projects traditionally address the supply side of the value chain, and usually focus on increased productivity through better farm practices and the more efficient use of agro-inputs. However IFDC projects address the demand side of the agricultural sector to ensure that increased production finds its way to market without adversely affecting prices or farmer incomes. In Ghana, recent efforts by the private sector and international donor organizations, NGOs and relief agencies are beginning to address these marketing output issues. The majority of these initiatives assist farmers in storing their grains post-harvest in farmer-managed storage facilities – releasing outputs to the market only when prices are optimal. Other projects ensure that yield-increasing support is accompanied by targeted efforts to link farmers to buyers. These efforts to build linkages have increased the stability of various agricultural value chains. However, more effort is needed to create sustainable progress in a fully functional and farmer-friendly agricultural supply system.





The FtM project is designed specifically to improve farmer-to-market linkages. Through FtM, IFDC is increasing northern Ghanaian rice, maize, sorghum and soybean farmers' incomes and long-term business opportunities by developing new commercial linkages with traders, marketing companies, processors and institutional buyers.

FtM is designed to address the entire value chain, ensuring that no part of the chain is allowed to interrupt the profitable flow of produce from farmers to their markets. By the end of FtM (2010-2013), the project will have affected approximately 50,000 smallholder farmers' livelihoods by creating farmer alliances, training and equipping small- to medium-sized enterprises and building lasting relationships with national, regional and international produce-purchasing companies.

FtM is funded by AGRA and partners with the Savanna Farmers Marketing Company Ltd. (SFMC). SFMC is a farmer-owned company serving as a "Special Purpose Vehicle" to aggregate participating farmers' produce and sell it to large industrial buyers. Between 2005 and 2008, SFMC assisted about 5,000 smallholder farmers in Ghana's three northern regions to sell \$1.4 million in produce.

Building on this model, FtM is training, mentoring and equipping SFMC to provide substantially increased business and marketing services to a larger number of

smallholder farmers who will supply produce to industrial buyers through the company.

The project directly benefits smallholder farmers, produce buyers and consumers. By linking with buyers before production begins, farmers have greater opportunities to work within ensured market environments, and may often engage in pre-negotiated price agreements. These mutually beneficial relationships are the cornerstone of the project – protecting the interests of all members along the value chain, particularly local farmers.

Utilizing this methodology, traders, processors, agro-food industries and large retailers can obtain reliable, regular supplies with greater control over the quantity and quality of the products they purchase – all while continuing to motivate farmers through fair and consistent purchases.

The primary objectives of the FtM project are to: a) increase farmers' organizational management, technical and entrepreneurial skills in a collective environment by building alliances and partnerships; b) strengthen abilities of linkage organizations and local entrepreneurs to provide effective marketing services; and c) build long-term business linkages and commercial relationships between farmers and buyers.

The FtM project is expected to generate a number of capacity-building benefits including: a) rice-, soybean-, sorghum- and maize-producing farmers' organizations adopt and use best practices in the production of quality products; b) SFMC and other local entrepreneurs link farmers with buyers; c) millers and processors supply high-quality and competitive produce to meet market demand; and d) well-developed commercial relationships grow between smallholders and industrial buyers, processors and local entrepreneurs for regular supply of produce.

Among the anticipated outcomes of the FtM project are: a) approximately 50,000 participating farmers will increase their incomes by 15-20 percent through the production and regular supply of high-quality produce; b) SFMC and local entrepreneurs supported by FtM will increase their profitability by up to 30 percent by providing business services and aggregating quality produce for buyers; c) participating agro-industries will obtain 60-75 percent of their raw materials from FtM-supported farmers; d) consumption of local rice will increase by 20 percent; e) farmers will reduce transaction costs by 30 percent through collective action and increased linkages with buyers; and f) access to financing will increase for farmers, marketing companies and local entrepreneurs.



# Mainstreaming Pro-Poor Fertilizer Access and Innovative Practices in West Africa

The project develops best practices (including institutional arrangements, innovation platforms and clustering of participants) to improve access to fertilizers by smallholder farmers.

## Mainstreaming Pro-Poor Fertilizer Access and Innovative Practices in West Africa (NWAFFD)

According to a recent IFAD report evaluating an IFDC pilot project in West Africa, the single most significant factor likely to influence regional agricultural sustainability is access to fertilizer. The evaluation also asserted that if fertilizer is readily available and affordable, it is highly likely that farmers who have used fertilizer or have been trained in advanced technologies will continue to use it.

IFAD recommended that IFDC review all aspects of fertilizer accessibility, including private and public sector distribution, partnerships and subsidy practices, and develop a regional project that facilitates access to improved technologies and inputs. It was also recommended that IFDC continue to explore ISFM options for the drier zones of West Africa, utilizing organic materials that otherwise would not be available to farmers. Another suggestion was the development of methods to address the inability of national extension services to implement new approaches to fertilizer use or facilitate timely access to agro-inputs.

To address the issues outlined in the evaluation, IFDC is implementing the Mainstreaming Pro-Poor Fertilizer Access and Innovative Practices in West Africa project. The project seeks to increase the livelihoods of select smallholder farmers in Benin, Burkina Faso, Ghana and Togo through improved land husbandry and better access to, and more efficient use of, fertilizer. The effort targets female farmers, resource-poor male farmers, farmers' organizations and community associations.

To address localized soil quality issues, the project utilizes a holistic ISFM approach to improve nutrient-depleted soils. The project also focuses on natural resources, improved technologies, competitive markets, private enterprise development and national policy advocacy.

The four-year project (2010-2013) is funded by IFAD, with in-kind cost sharing by IFDC.

The project's objectives are to: a) validate, fine-tune and scale-up innovative approaches for developing site-specific ISFM options and appropriate fertilizer recommendations for smallholder farmers; b) develop and implement pro-poor institutional arrangements, capacity development of participants and public- and private-led initiatives for improved access to inorganic fertilizers and organic inputs; and c) provide technical, economic and social evidence promoting the modernization of national fertilizer policies, with an emphasis on policy dialogue to facilitate reform.

The project develops best practices (including institutional arrangements, innovation platforms and clustering of participants) to improve smallholder farmers' access to fertilizers. Improved access to credit in order to purchase agro-inputs is of particular importance, so the project is working with financial institutions that are partners in other IFAD projects to promote innovative and enabling financial products. Through these loans, the project seeks to increase access to and availability of both organic and inorganic fertilizers. The project also develops multi-stakeholder and participatory approaches to facilitate innovation networks to share information and best practices, engage in policy dialogue and facilitate access to inputs, technology and markets within other IFAD projects.

The project's pilot program demonstrated the need for site-specific recommendations, and successfully tested ISFM in pilot villages. The project is now validating these approaches at full-scale and is fine-tuning the process to remove bottlenecks that might hinder wider use. To



support soil analysis efforts, tools such as portable soil laboratories and soil test kits are being made available. An economic evaluation of the large-scale adoption of these options is also being conducted.

To strengthen producer organizations, methodologies for PLAR are being developed, allowing producer organizations to evaluate and adapt ISFM practices to specific situations while building new market linkages. The project develops individual and collective capacities of farmers to adopt and adapt innovative practices using technologies and managerial and marketing skills. These

linkages also allow smallholder farmers and farmer organizations to interact with other members of the agricultural sector.

The project is also designed to strengthen the capacities of agricultural service providers such as research institutions, government extension officers, agro-dealers, NGOs, financial institutions and farmer organizations involved in existing IFAD projects and programs. The project's training assists farmer and trader organizations to establish linkages, conduct joint input procurement, negotiate input prices and form innovation clusters.

# PReFER

Increased use of both organic and inorganic fertilizer and other agro-inputs is necessary to help increase crop yields and create food security in Rwanda.

## Privatization of Rwanda's Fertilizer Import and Distribution System (ESAFD)

Agriculture represents nearly one-third of Rwanda's GDP and employs 80 percent of its workforce. Therefore, the performance of its agriculture sector has a powerful impact on the country's overall economy. Increased use of both organic and inorganic fertilizer and other agro-inputs is necessary to help increase crop yields and create food security in Rwanda. However, using fertilizer to increase crop yields is in an early stage of development.

The Government of Rwanda (GoR) has enlisted IFDC's assistance to transition away from its previous policy of nationalized procurement and distribution of fertilizer. The Privatization of Rwanda's Fertilizer Import and Distribution System (PReFER) is a USAID-funded project implemented by IFDC.

From 1994 to 1998, the GoR distributed free fertilizers to farmers after the country's civil war. In 1998, the nation initiated market-driven fertilizer importation and distribution. However, the private sector lacked the capacity to implement a sustainable agro-input supply system and fertilizer adulteration was also a problem. In addition, except for the tea and coffee sectors, fertilizer demand was low.

In 2006, the GoR took over procurement and importation of fertilizers but left control of distribution and retailing in the private sector. Since 2006 fertilizer use in Rwanda

has increased significantly. Now, the GoR wants to transfer responsibility for fertilizer procurement and importation to the private sector. For this to be successful, a professional network of private sector agro-dealers must be created and a sustainable fertilizer supply and distribution system must be in place.

USAID and IFDC are providing technical and business assistance through PReFER training programs to develop and professionalize agro-dealers across Rwanda. A market-friendly fertilizer procurement and distribution system aligns with the GoR's private sector development strategy. IFDC identifies policies that support the private sector's involvement in the fertilizer market and contribute to the development of a sustainable supply system. This should stimulate fertilizer demand and will support the project's objectives through agricultural intensification and market development for increased crop yields.

A core project activity is the development of a Fertilizer Business Incubation Center (FBIC), an autonomous center to offer business support and market information to emerging private sector entrepreneurs involved in fertilizer supply. The FBIC will also provide policy advice to the Rwandan government and serve as a one-stop resource center for all fertilizer sector stakeholders. Primary project objectives include: a) transition the

fertilizer procurement and distribution supply chain from the government to a competitive private sector by 2015; b) identify and adopt key policies and specific roles to transition the fertilizer sector from government to private sector control; c) improve the operational efficiency and cost-effectiveness of fertilizer supply chains; d) increase the number of well-trained entrepreneurs/firms and retail market networks by 2012; and e) improve access to and management of trade credit in the fertilizer supply chain.

The five-year project (2010-2015) is collaborating closely with MINAGRI, as well as three other IFDC projects in Rwanda – CATALIST, COMRAP and the Rwanda Agro-Dealer Development (RADD) project.

## Rwanda Agro-Dealer Development (ESAFD)

The RADD project is building, strengthening and professionalizing networks of agricultural input importers and agro-dealers. In turn, these organized and well-trained agro-dealers will provide increased, timely and more cost-effective supplies of agro-inputs to Rwanda's farmers. Funded by AGRA and implemented by IFDC, RADD is improving farmers' access to inputs, decreasing transaction costs and increasing the demand for inputs. This is leading to enhanced agricultural productivity and increases in income for both farmers and agro-dealers.

The three-year project (2010-2012) is strengthening the private sector's role in agro-input supply, a key component of the Rwandan government's Agricultural Development Strategy and its Crop Intensification Program. RADD is complementing the GoR's efforts to increase the supply of improved foundation seed, increase fertilizer importation and use and allow for more private sector sales points. To accomplish these goals, RADD works in close collaboration with IFDC's CATALIST, PReFER and COMRAP projects.

CATALIST introduced approaches that are appropriate in situations with limited input demand and where formal credit systems are out of reach of farmers. RADD is augmenting the work begun by CATALIST in Rwanda through the creation of effective linkages among the different members of the input supply chain. Human capital development is a major activity of RADD, enabling agro-dealers to provide farmers with quality inputs and advice on their appropriate use. RADD, PReFER and COMRAP are in the process of training over 1,000 agro-dealers and extension agents.

RADD is creating an official database of all agro-dealers in Rwanda. Using the database, project staff will map all agro-dealers in the country in order for dealer trainings to be targeted to the correct beneficiaries.

The project is also helping link agro-dealers with financial institutions through the use of a credit guarantee fund. Dealers will then be able to offer credit to farmers for

the inputs they need at the lowest possible cost. RADD is working with MINAGRI to implement a Weather Index Insurance program, which will serve as a risk cover for input loans granted to farmers. Farmers who borrow to buy inputs can also buy insurance to protect against drought. This reduces farmers' risks, as well as those faced by agro-dealers who sell on credit.

In collaboration with MINAGRI's Rwandan Agriculture Development Agency and district extension services, RADD is establishing 390 new demonstration plots. The project will use these plots to show farmers the positive benefits of correctly using improved agro-inputs and best agricultural practices. Using these best practices will increase input demand, which will in turn lead to increased productivity and income at the farm level.

At the end of the project, it is expected that an agro-input dealer association will be established in Rwanda, with a membership of at least 250 agro-dealers and stockists. Also, an incremental 20,000 mt of fertilizers and 7,500 mt of improved seeds will be sold, and Rwanda will have developed a functioning and sustainable input supply system. Ultimately, RADD will enable 200,000 Rwandan farmers to access agro-inputs and technology adoption advice, with 60,000 farmers benefiting from farmer field days and more than 100,000 farmers benefiting from technology transfer advice.





# Special Report

## Cassava Plus



Many in the public and private sectors recognize that cassava has the potential to develop from a subsistence food crop into a commercial cash crop to meet the starch and sugar needs of Africa. As the world's largest producer of cassava, Nigeria is the ideal location to pioneer innovative methods that have the potential to improve the lives of millions of farm families across Africa.

Recognizing the important role that cassava and smallholder farmers play in Nigerian agriculture, the Ministry of Foreign Affairs of the Kingdom of the Netherlands (through DGIS), IFDC and DADTCO launched the Cassava Plus project in late 2009 and began operations in early 2010. The primary mission of Cassava Plus is to strengthen smallholder farmers' access to value-added markets for their increased cassava production. By linking smallholder farmers to attractive markets, the project seeks to reduce poverty and generate economic development.

The objectives of Cassava Plus are to: strengthen the capacities of 162,000 Nigerian farm families to work with the new DADTCO technology and develop sustainable and productive cassava and rotation cropping systems; train and develop agro-dealers and other farm service providers and link them with participating farmers; build a Dutch PPP showcase to prove that the cassava value chain has the potential to provide millions of farming

families in the cassava belts of Africa with higher incomes; and replicate and upscale the results in other cassava-growing areas.

In 2010 the Cassava Plus project began assisting smallholder cassava farmers to boost their crop yields in a sustainable manner. During the project's first year, the focus was on identifying and working with a core group of smallholder farmers in three Nigerian states to increase their yield and profitability and link them to the DADTCO cassava processing factories.

IFDC and DADTCO are convinced that the development of the cassava value chain has an enormous potential to substantially increase farm incomes in a sustainable way. Recent developments in the world food markets support the need for additional and cheaper sources of starch products. This pilot has the potential to be a major "game-changer" for Africa's agricultural sector.

The demand for high-quality cassava flour is expected to rise rapidly due to urbanization and the global increase in grain prices. This provides an opportunity for the seven to eight million Nigerian farm families that currently only grow cassava for home consumption and sale in local markets. To date, an inadequate supply of raw cassava for processing and inefficient processing systems have prevented cassava from becoming a major commercial

crop. However, DADTCO has developed a unique technology in cassava processing – AMPUs – which brings cassava processing closer to the farmers, thereby reducing the need and cost to transport the easily perishable tubers over long distances.

### Project Activities

There are four primary project activities (supported by a number of secondary activities):

- Supporting and building the capacity of organized farm groups and developing logistics solutions for root delivery (activity 1).
- Building organizational and logistical capacity by: conducting training on the organization, leadership, marketing and logistics of farmers' groups; and the development of marketing systems linking factories and farmers.
- Adopting improved farming practices through PLAR and on-farm demonstration (activity 2).
- Improving farmer practices through: field and agronomic trainings; field demonstrations; study tours; mechanization; and geographic information system (GIS) mapping for site-specific farmer field information.
- Strengthening agro-input dealers and service providers (inputs, mechanization and credit) to support improved cassava production (activity 3).
- Supporting the improvement of service providers' business skills, efficiency and profitability, with a focus on agro-dealers, agricultural mechanization specialists and financial institutions working in the project's target areas.
- Providing support for cross-cutting interventions including project management, communications, M&E and gender equity (activity 4).
- Supporting the development of a baseline linked to a comprehensive database of cassava farmers in order to monitor and evaluate the project's success.

The project staff will also address additional cross-cutting issues such as attention to capacity building of farmers' organizations. The lessons learned will be transferred to Ghana and other African countries.

### Year 1 Highlights

#### Identification of Mega-Clusters

Rapid market assessments were conducted to identify appropriate locations where smallholder cassava farmers can produce competitively for DADTCO's factories. Cluster identification determined the location of the AMPUs.

#### Technology Development and Dissemination

Groups of project-supported farmers visited each other at their demonstration sites. These farm visits encouraged farmer group formation, enabled farmers to observe that the "package of practices" being demonstrated can generate major increases in production and income and facilitated farmer-to-farmer learning.

### Adoption of the Package of Practices

Continuous and thorough training prior to and during planting encouraged the project-supported farmers to implement improved technology and ISFM practices. Adopting these methods promises increased crop yield, generated higher quality cassava and improved soil fertility.

### Agro-Dealer Census

In partnership with the NADS project, a census of agro-dealers supplying the intervention areas was completed. The survey helped both projects identify key agro-dealers and provided a basis for establishing linkages between input suppliers, agro-dealers and smallholder farmers.

### Successful PPPs

Partnerships between IFDC, DADTCO, state governments, agro-dealers and smallholder farmers were established. A rapid market assessment was conducted to identify locations where the project will be supporting organized farm groups and linking them to the DADTCO factories. Mega-clusters and sub-clusters within a radius of 45 km of the DADTCO factories will directly supply cassava roots. Areas outside that radius with identified mega-clusters and sub-clusters are the areas where the AMPUs will be placed. The AMPUs will process the cassava produced by these mega-clusters and sub-clusters, then forward semi-processed cassava cake to the factories for further processing into cassava flour.

In year 2, the project will intensify activities in the current intervention areas as well as expand to other potential production areas in and outside Nigeria (Ghana, Benin). This expansion is based on the assumption that the demand for processed cassava cake and flour will grow as expected.

Although a foundation was laid in the first year of the project, adjustments will be made in year 2:

- Increased focus on technical aspects of cassava production (in particular, soil fertility management).
- Expanded cassava production coupled with appropriate mechanization support services.
- Increased support of agro-dealers to guarantee a supply of inputs to cassava production (specifically, cassava stems and fertilizer products).
- Increased focus on organizational and leadership aspects in cassava-growing farmers' groups.
- Intensified collaboration between DADTCO and farmers' groups to develop an effective cassava value chain.

M&E were important tasks during year 1 (and will be important throughout the life of the project). M&E activities will focus on two key stakeholder groups – farmers and agro-dealers – and the key cross-cutting issue of gender equity.



**Project Expansion – Rivers State Cassava Initiative**  
In April 2010, the potential of building a DADTCO factory in Nigeria’s Rivers State was explored.

IFDC conducted a rapid market assessment focused on smallholder farmers to determine the viability of promoting a commercial cassava intervention in Rivers State. A survey was conducted in the eight key cassava-growing areas in the state to determine the willingness of farmers to supply cassava roots for commercial purposes and to identify major constraints. Findings from the survey include:

- Cassava is the major crop in Rivers State. More than 95 percent of the farmers specified cassava as their major crop, grown mainly for their own consumption and local markets.
- Estimates for average yields range from 8 to 10 mt/ha.
- The average size of subsistence farm plots in Rivers State is small, between 0.2 and 1.5 ha.
- The local food market is the primary market for cassava in Rivers State. Cassava processing takes place at the micro-level as a cottage industry.
- All farmers indicated they sell to multiple buyers.

The market assessment showed the willingness and capacity of farmers to supply the required quantity of cassava roots. A working committee solved the financing, land and natural gas supply issues for a factory in Rivers

State. This culminated in a signing ceremony with numerous dignitaries, including the Rivers State governor and the Dutch Ambassador.

The project will start activities in Rivers State in year 2. AMPUs will be dedicated to the SABMiller brewery in Port Harcourt and additional AMPUs will be dedicated to the new DADTCO flour mill.

**Project Expansion – Ghana Exploratory Mission**  
Meetings were held in Ghana to discuss project expansion. SABMiller has expressed a strong interest in converting its breweries to use cassava-based starch. The Ghanaian market would be a high priority for cassava-based beers and other products.

Expected results of the Cassava Plus project after three years include:

- Increased annual income of \$250/ha of cassava and \$500 for 162,000 farm families, for a total of \$81 million in additional net income.
- Improved access to/use of agro-inputs, farming techniques and services.
- Strengthened capacity of over 100 farmers’ groups.
- A highly visible and easily replicable PPP model that changes the lives of participating farmers.

# Africa Fertilizer Efficiency Program in Sub-Saharan Africa

The program dramatically increased yields of targeted vegetables while building soil nutrient amounts to more acceptable levels.

## IFDC Projects that Ended in 2010

### Africa Fertilizer Efficiency Program in Sub-Saharan Africa (ESAFD and NWAFFD)

Malnutrition is rapidly rising in the world’s developing countries, with a dramatic effect on the world’s urban poor. Their access to locally grown nutrient-rich foods is extremely limited, and this trend is very evident across Africa, where chronic undernourishment is widespread. The number impacted continued to rise through 2010 – particularly affecting those who survive on single-source sustenance such as rice. And while malnutrition is an issue for the entire continent, urban populations are particularly hard-hit, because they have limited access to nutrient-rich foods such as fruits and vegetables.

Increased awareness of the role of vegetables in combating malnutrition has led more urban dwellers to use these foods to balance their diets. As crucial sources of Vitamin A and micronutrients such as iron and zinc, vegetables can help promote better health. More urbanites are turning to the garden crops market (farmed land that is less than one-third of one hectare) for access to vegetables. As demand continues to increase, it is expected that peri-urban agriculture will be placed under additional pressure to increase local supplies.

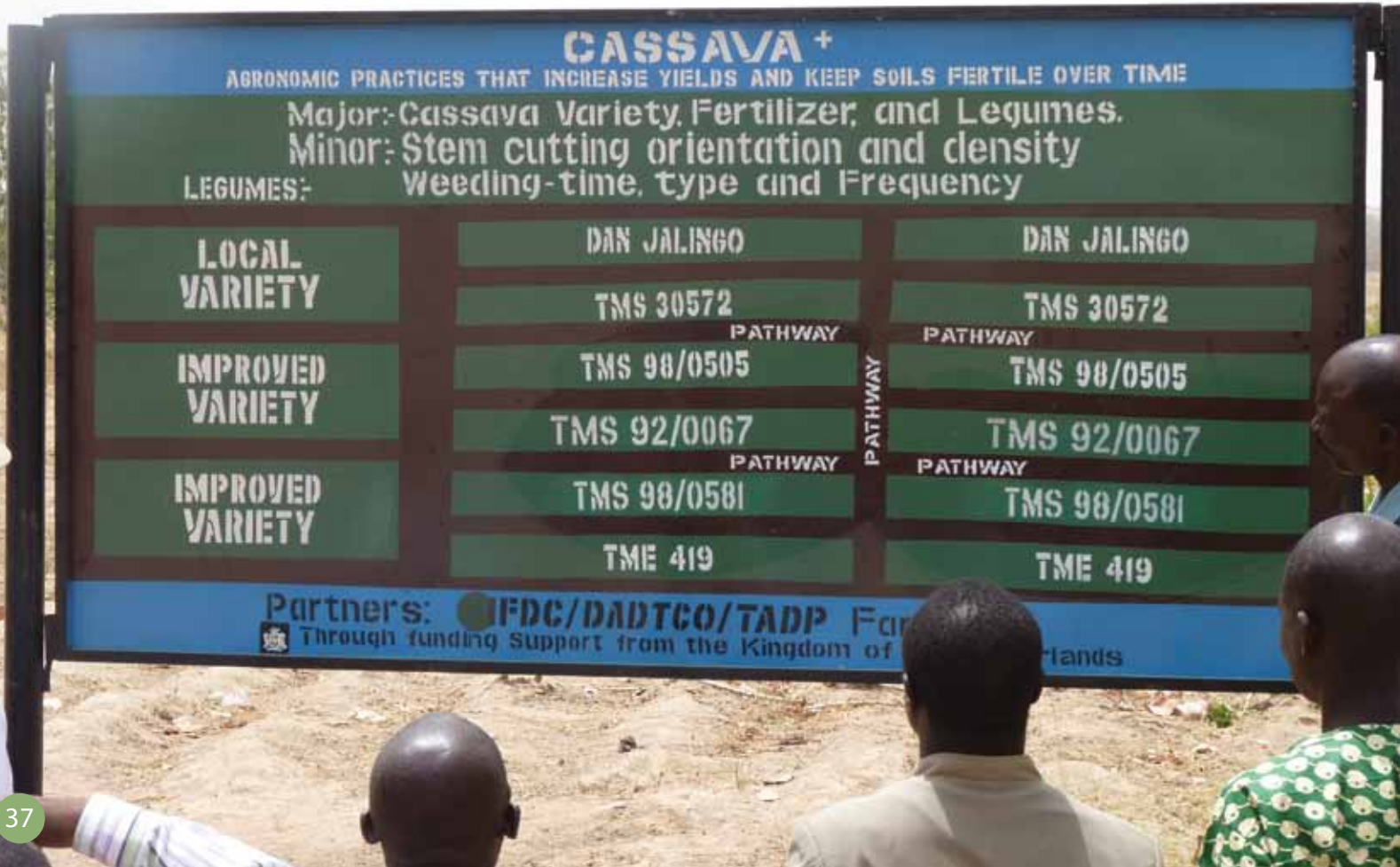
To address this trend, IFDC implemented the Africa Fertilizer Efficiency Program in Sub-Saharan Africa (2009-2010). The program was an agricultural intensification effort targeting peri-urban farmers who increasingly supply locally grown vegetable yields to urban markets. Targeted smallholder farmers with fields immediately

adjoining urban areas were trained by IFDC in new farming technologies and the proper use of quality agro-inputs.

The program dramatically increased yields of targeted vegetables while building soil nutrient amounts to more acceptable levels. The effort also increased vegetable quality, while building linkages and incomes for smallholder farmers. The project’s first phase focused on increasing farmer capacities and incomes through improved resource use efficiency.

Initial field trials were performed throughout 2009 in Bujumbura, Burundi; Kigali, Rwanda; and Ashiaman, a suburb of Accra, Ghana. The trials evaluated high-quality agro-inputs such as fertilizer and hybrid varieties of seed as well as ISFM and other technologies that promote crop intensification.

In 2010, local and regional farmers were actively involved in the project as both implementers and performance evaluators, and quickly grasped the potential benefits of the project. Prior to this intervention, soil nutrient deficiencies required farmers to apply three- to eight-times more fertilizer to vegetable crops than to other food crops. With improved technologies and better agro-inputs, there were substantial increases in crop yields, resulting in more vegetables for local urban markets.





The project increased crop yields and improved the vegetables' nutritional content. Both the peri-urban farmers and their urban customers benefitted from the program.

**Development of Agribusiness Clusters in Mali (NWAFFD)**

The Development of Agribusiness Clusters in Mali project, funded by the Embassy of the Kingdom of the Netherlands in Mali, was an extension of the From Thousands to Millions project and was designed to reinforce and expand agricultural development efforts in the country. The project's primary objective was to increase the number of agribusiness clusters in Mali by 30 percent during 2010, and to further build on the strategy of making agribusinesses economically, organizationally and environmentally sustainable. The project also improved the institutional environment for business development in rural areas by designing and testing innovative rural finance instruments such as contract financing, the inventory credit system and harvest insurance. Attention was focused on agricultural input distribution and building a network of agro-dealers at the agribusiness cluster level.



**From Thousands to Millions (NWAFFD)**

The goals of From Thousands to Millions (1000s+) were to increase agricultural productivity and economic growth for nearly one million farming families (involving about 10 million people) in Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria and Togo. The project was successful in stimulating trade, developing agricultural input and output markets and improving soil fertility.

This project was the main component of the Strategic Alliance for Agricultural Development in Africa (SAADA). 1000s+ began on March 1, 2006, and ran through 2010. The project was funded by DGIS, Agriterro and IFDC. 1000s+ was farmer-led and implemented on a cost-matching basis.

1000s+ linked farmers to markets through expansion of the CASE process, which promotes agribusiness cluster formation, commodity chain development and strengthening of public and private institutions' abilities to enable trade and agribusiness.

The project reinforced the capacities of 2,000 local enterprises, including farmer cooperatives and business development services. A large-scale training and networking program for input dealers and cooperatives was established in Burkina Faso, Ghana, Mali and Niger. This training program was implemented by the International Center for Development-Oriented Research in Agriculture (ICRA).

1000s+ encouraged financial intermediation to help secure access to credit for farmers and local entrepreneurs. More than 100 local service providers worked with 1000s+ in cluster formation and value chain development. These small business owners received hands-on training to strengthen core competencies.

A key component of 1000s+ was ISFM, an IFDC approach to improve soil fertility through the combined use of mineral fertilizers and organic fertilizers, such as crop residues, composts and green manures.

**Improved Livelihood for Sidr-Affected Rice Farmers (EAD)**

See the Special Report on the ILSAFARM project on pages 45-47.

# KAED II

KAED II sought sustainability at all levels, particularly utilizing agribusiness and agriculture value chain members and associations. The project emphasized broad-based stakeholder participation, and this presented opportunities to leverage available USAID resources.

**Kyrgyzstan Agro-Input Enterprise Development II (EAD)**

USAID extended the KAED project for an additional two years, from September 1, 2008, through August 31, 2010. The original project (2001-2008) began in southern Kyrgyzstan, and KAED II implementation was expanded into northern Kyrgyzstan.

KAED II activities were built on the platform of past achievements, lessons learned and relationships developed under the original project, which encouraged Kyrgyz farmers to adopt practices that would increase food production and improve animal health and rural incomes.

KAED II sought sustainability at all levels, particularly utilizing agribusiness and agriculture value chain members and associations. The project emphasized broad-based stakeholder participation, and this presented opportunities to leverage available USAID resources.

In April 2010, a regime change in the country threatened farmer access to agro-inputs because of agricultural supply system disruptions. Through additional USAID funding, IFDC provided seeds and fertilizers to address the immediate agro-input needs of Kyrgyz farmers for their upcoming cropping season. The USAID assistance consisted of 100 mt of spring wheat elite seed, 100 mt of spring barley elite seed, 40 mt of corn seed and 100 mt of compound fertilizers. The seed and fertilizers were delivered to areas of Kyrgyzstan with the most immediate needs, such as farmers in the nation's mountainous regions, and were distributed free of charge.

During 2010, primary activities included:

- New seed varieties entering Kyrgyzstan were registered and 4,000 mt of high-quality seed produced from USAID's 2008 collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA) were certified.

- The GDA with Eurasia Group was established to foster a key PPP. Through the GDA, KAED II increased domestic production of corn (the main component of livestock feed) and edible oil through the productivity and higher yields of maize and sunflower farmers. It is estimated that by the end of 2010, an additional 8,000 mt of corn for livestock fodder and 480 mt of processed, edible sunflower oil were added to Kyrgyzstan's food supply at a reduced cost to the consumer. This narrowed the production gap for both commodities.
- The media, technical brochures, agro-dealer extension services, local service providers and an aggressive public outreach program were channels used to transfer knowledge to farmers about advanced wheat-growing practices. These practices included new varieties, seeding rates, fertilizer application rates and methods, pesticide use, irrigation techniques and harvesting technology. Approximately 100,000 farmers who had the highest potential to double wheat yields (e.g., from two mt/ha to four mt/ha) were targeted. A similar public outreach campaign was conducted to support the GDA program with Eurasia Group on maize and sunflower production.
- A rapid assessment on the situation for winter feed and potential losses of cattle was conducted. More than 2,400 mt of livestock feed were procured and distributed to take care of 70,000 dairy cows (14 percent of the national total). Because of the intervention, dairy cow mortality was reduced by 30-40 percent.
- Dairy cow breeds with high yield and quality milk suitable to Kyrgyzstan were introduced.



**Maximizing Agricultural Revenue and Key Enterprises in Targeted Sites (NWAFFD)**

The Maximizing Agricultural Revenue and Key Enterprises in Targeted Sites (MARKETS) project (2005-2010) sought to transform agriculture in selected areas of Nigeria from low agro-input/low output subsistence farming to commercially competitive agriculture. This was accomplished by targeting consumer demand for locally produced food commodities and by creating specific, defined markets.

Funded by USAID, the project focused on expanding economic opportunities by increasing agricultural productivity, enhancing value-added processing and increasing commercialization through private sector-led and market-driven growth and development.

IFDC helped improve the agro-input supply system and increase the amounts of improved seeds, fertilizers and

CPPs sold. Because the private sector is crucial to agricultural growth, IFDC identified and built a network of trained agro-dealers while developing agro-input markets for targeted value chains.

In 2009, IFDC increased access to fertilizer for nearly 200,000 farmers in Kano and Taraba states through a fertilizer voucher program. Vouchers help smallholder farmers obtain inputs while simultaneously building business for rural agro-dealers.

The program was expanded in 2010 to four states – adding another 200,000 farmers in Bauchi and Kwara states to those participating in Kano and Taraba states.

**Strategic Alliance for Agricultural Development in Africa (ESAFFD and NWAFFD)**

The five-year SAADA project, funded by the Netherlands' DGIS, began in 2006 and ran through 2010. IFDC, as the implementing partner, was charged with organizing a strategic alliance of international NGOs to facilitate regional, national and multinational agricultural intensification and agribusiness programs with an initial focus in West Africa.

The SAADA project was comprised of three components – each addressing a focused set of issues while sharing broader common objectives. These components included: SAADA-A – the implementation of the 1000s+ project in West Africa; SAADA-B – the expansion of these activities to select East and southern African countries; and SAADA-C – agricultural intensification combined with a holistic approach to socio-agricultural issues.

**SAADA-A (NWAFFD)**

Information regarding results of the 1000s+ project can be found on page 39.

**SAADA-B (ESAFFD)**

SAADA-B expanded IFDC activities and best practices developed in West Africa (such as ISFM, CASE, fertilizer resource assessment and MIS) into other regions of Africa. Specifically, this project expansion was designed to replicate the CASE process and other aspects of the IFDC agribusiness model in select countries of East and southern Africa. Prior to the initiation of these SAADA-B activities, IFDC laid the groundwork in a group of East African countries, establishing long-term projects in Malawi, Mozambique and Uganda. In addition, IFDC developed a framework for the Agricultural Input Markets Strengthening (AIMS) project and conducted country assessments in these pilot countries as well as Angola, Ethiopia, Kenya, Rwanda, Tanzania and Zambia (among others). IFDC's methodology in these efforts has been proven over its 36-year history, with agribusiness development models and concepts, approaches and management systems that have been recognized for their effectiveness in West Africa and other parts of the world.

The SAADA-B program included the following components:

- Expanded CASE to thousands of farm families in the Horn of Africa, the Great Lakes Region of Central Africa and other regions.
- Increased awareness of, and progress toward, efficient agricultural input markets.
- Expanded MIS and the use of decision support systems.
- Strengthened the capacities of private sector producer and trade organizations.

- Developed national legislation for the marketing of agricultural inputs and encouraged the adoption of market-friendly policies and regulations for agro-input markets.
- Supported regional organizations and the creation of regional agro-input markets.
- Created PPPs with international and multinational companies.
- Accelerated implementation of Comprehensive Africa Agriculture Development Program (CAADP) plans related to sustainable agribusiness.

**SAADA-C (ESAFFD and NWAFFD)**

This component of SAADA was a holistic approach that focused on socio-agricultural issues across multiple projects. Subjects such as gender equity, HIV/AIDS, natural resources management, school food programs and conflict prevention were among the intervention topics that cut across multiple IFDC projects in Africa.

SAADA-C allowed IFDC and its partners to reach a deeper understanding of social and agricultural challenges facing smallholder farmers and farming communities. Because these issues cut across projects in numerous countries, IFDC had the opportunity to address these concerns in a

# Rice Emergency Initiative

The project boosted total domestic rice production and improved access for 40,000 farmers to certified rice seed and quality fertilizer while expanding knowledge of current rice production technologies and best practices.

**Rice Emergency Initiative (NWAFFD)**

The Rice Emergency Initiative (2009-2010) was funded by the USAID West Africa Mission as a component of the Food Security and Crisis Mitigation Program. The program was established by the Consultative Group on International Agricultural Research (CGIAR) secretariat at the World Bank. The Rice Emergency Initiative was created to boost rice production in Ghana, Mali, Nigeria and Senegal in order to mitigate potential rice shortages. The program was led by the Africa Rice Center (WARDA) and implemented by IFDC, Catholic Relief Services (CRS) and national agricultural research and extension institutions of the countries involved. IFDC also coordinated with numerous regional organizations, government agencies, farmers' organizations and private businesses to implement the initiative.

The program targeted 10,000 rice farmers in each of the four nations – all WARDA member countries. The project boosted total domestic rice production and improved access for 40,000 farmers to certified rice seed and quality fertilizer while expanding knowledge of current rice production technologies and best practices. IFDC provided timely and affordable access to these inputs

through voucher programs and seed fairs, utilizing existing distribution channels including the private sector, government agencies and NGOs such as CRS. After receiving their agro-inputs, targeted farmers were trained in modern rice crop technologies through field training and informational videos. Through community outreach programs such as rural radio and TV broadcasts, improved rice production technologies also reached farmers not directly involved in the program.

The Rice Emergency Initiative focused on:

- In-field demonstrations of fertilizer best practices among targeted farmers.
- Facilitating linkages with other projects in the region that focused on access to agro-inputs (specifically mineral fertilizers) and utilized voucher systems.
- Training in, and coordination of, agro-input distribution systems.
- Training of farmer organizations and the private sector in agribusiness management and marketing, along with fertilizer best management practices.





broader context. IFDC also assessed how to incorporate solutions that will more effectively contribute to long-term agricultural development in Sub-Saharan Africa.

The SAADA-C program:

- Improved regional harmonization of agro-input and other trade policies, leading to increased trade within target regions and greater export opportunities outside of those regions.
- Increased the number of women in target areas who received training and technology transfer while improving their economic power and welfare through production and participation.
- Provided support to the Ghana School Feeding Program by building linkages between female rice farmers and caterers who supplied food to schools.
- Preserved biodiversity and the natural resource base by measuring the impact of thousands of additional farmers who adopted ISFM techniques suited to local conditions.
- Addressed HIV/AIDS in Africa by providing links to HIV/AIDS support programs and information on agricultural practices, nutrition and crop value-addition.
- Generated prevention and governance improvement by increasing the number of agricultural policy reforms stimulated by partner civil organizations.



**Strengthening Trade at the Regional Level in Agricultural Inputs in Africa (ESAFD)**

Over 300 million Africans in the east and southern regions of the continent are highly invested in agriculture. Yet the majority of these individuals who farm for a living lack the tools to move themselves from subsistence into profitability. Access to quality agro-inputs is limited and expensive, current agricultural technologies are not widely understood and market systems lack the synergy to facilitate beneficial trade practices.

The Strengthening Trade at the Regional Level in Agricultural Inputs in Africa (STAR) project improved food security and agricultural growth by building regional trade along East and southern Africa's entire agricultural value chain. With funding from the William and Flora Hewlett Foundation, the project partnered with COMESA, the East African Community (EAC) and the Southern African Development Community (SADC). The project strengthened regional and national trade in agro-inputs and improved market access for agro-dealers and smallholder farmers. The project ended in August 2010.

The primary goals of the STAR project were:

- Build a progressive environment for agricultural trade through policy and institutional reforms.
- Expand market linkages and opportunities for agro-dealers, farmers and their respective associations.
- Disseminate market information and current technologies to promote agricultural trade and cooperation.

Achieving the project's goals and objectives helped develop revitalized national and regional input markets. Improved availability, quality and affordability of inputs for agro-dealers and farmers followed. Targeted consultations with key stakeholders to assess and improve the fertilizer policy environment along with capacity building of RECs, the private sector and farmer organizations were effective. With this atmosphere of cooperation among the most active participants in the value chain, IFDC built a foundation of common interest and a shared commitment to success.

IFDC also organized annual policy and trade workshops to build consensus around regional fertilizer policies and disseminated effective strategies for implementing its workshop recommendations.

For example, in June 2010, IFDC's East and Southern Africa Division and the EAC held a STAR policy workshop in Arusha, Tanzania. More than 60 participants and 29 speakers from 17 countries attended the event. Participants discussed production, trade, market linkages and policy environments with a special focus on subsidies and voucher systems.

Workshop attendees agreed that non-conducive policy environments remain a hurdle to production, trade, investment and market development, as well as fertilizer use by smallholder farmers. Policymakers and development partners were called upon to create an enabling environment to promote fertilizer use and supply in order to spark a Green Revolution in Africa.

STAR implemented one of the key recommendations of the *Abuja Declaration on Fertilizer for an African Green Revolution* – "To reduce the cost of fertilizer procurement...through the harmonization of policies and regulations to ensure duty- and tax-free movement across regions, and the development of capacity for quality control."

# Sub-Saharan Africa Challenge Program (SSA-CP)

The project addressed policy and institutional measures that are needed to enable resource-poor farmers and marginalized groups to access technologies, information and markets and contribute to a transparent and efficient agriculture market.

**Sub-Saharan Africa Challenge Program (NWAFFD)**

The Sub-Saharan Africa Challenge Program helped farmers in Nigeria's Kano, Katsina and Maradi states generate greater crop yields. The project's purposes were to increase agricultural productivity, reduce poverty and contribute to sustainable use and conservation of natural resources in the three Nigerian states.

The IFDC project staff used PLAR and demonstration plots to develop and disseminate information to farmers and to facilitate technology adoption. The project addressed policy and institutional measures that are

necessary to enable resource-poor farmers and marginalized groups to access technologies, information and markets and contribute to a transparent and efficient agriculture market.

Project staff also created models for implementing Integrated Agriculture Research for Development (IAR4D), developed innovative interventions to improve crop and livestock systems based on IAR4D principles and measured the impact and effect of IAR4D on development compared with conventional methods.



# Special Report

## ILSAFARM



In July and August 2007, severe floods affected some 10 million people in Bangladesh, a nation of 156 million. An estimated 13 percent of the country's total rice production was lost. Already reeling from the effects of the flood, Bangladesh was then hit by Cyclone Sidr on November 15, 2007.

Sidr caused catastrophic damage, particularly in the country's south and southwestern districts. The cyclone hit at the peak of harvest for the 2007 Aman crop – a harvest that usually accounts for 70 percent of the annual paddy rice production in the Barisal and Khulna regions. An estimated 2.2 million farm families were adversely affected. The total loss and damage to the crop sector alone were estimated at \$412 million – seriously impacting food security and incomes.

In response to Sidr's devastation, USAID provided financial support for the two-year ILSAFARM project, which ended in December 2010. IFDC implemented the project in collaboration with Bangladesh's DAE.

The project's goals were to improve food security and to alleviate poverty among Sidr-affected small farmers in 35 upazilas (sub-districts) by increasing rice yields through improved nitrogen use efficiency. IFDC's plan was to encourage the rapid diffusion of UDP, a proven technology that enables rice farmers to achieve

significant yield increases of up to 25 percent using one-third less fertilizer. This could be achieved by using urea in compacted briquettes and deep placing them in the soil rather than broadcasting prilled urea.

Other priorities were to strengthen the capacity of DAE to promote UDP and to encourage production of USG briquettes in the private sector. Today, Bangladesh is the prototype for UDP success.

### Economic Returns

Through the ILSAFARM project, farmers extended UDP to an additional 135,000 ha in 2010. In this area, farmers' net incomes averaged \$187/ha higher because of UDP than on comparable plots fertilized with prilled urea.

By supplying farmers with USG for an additional 135,000 ha in 2010, USG producers sold an additional 17,400 mt. Producers' realized average net incomes of \$20/mt (totaling nearly \$350,000 on 17,400 mt) and average returns on investment exceeded 100 percent. On the land fertilized by UDP technology, farmers used an average of 49 kg/ha less urea, saving the GoB \$830,000 in fertilizer subsidies in 2010.

Combining these three items – increases in farmers' and USG producers' net incomes and a decrease in government fertilizer subsidies – the ILSAFARM project

raised the Bangladesh GDP by \$26.4 million in 2010. Assuming that UDP technology spreads in future years as it did in 2010, the project's impact on GDP also continues. With a discount rate of 13 percent, the present value of project-associated gains in GDP from 2010 onward is \$230 million, which is 37 times the \$6.2 million investment by USAID and the GoB in the ILSAFARM project.

### Impact on Farm Households

Through ILSAFARM, approximately 500,000 additional farms used UDP in 2010 compared with 2008. Taking into consideration the size of their landholdings, UDP use has been adopted equally by marginal and small farms (owning less than 0.2 ha and 0.2 to less than 1.0 ha, respectively) as by medium to large farms. Marginal and small farm households that used UDP in 2010 harvested, on average, an additional 165 kg and 402 kg of rice, respectively – sufficient to feed the average household of 5.9 persons for 1.9 and 4.7 months. Across all farm-size classes, households that used UDP in 2010 were more likely to have invested in a broad range of household improvements, farm equipment and livestock during 2009-10 than households that did not use UDP.

### Impact on the Labor Market

Households using USG hired an average eight more days of labor per hectare. This generated a total of 1.04 million labor days, and an additional \$3.0 million in wages.

### Impact on National Food Security

In addition to what happens at the household level, Bangladesh's reliance on grain imports affects national food security. The expansion of UDP technology in the ILSAFARM project increased Bangladesh's rice production – and reduced rice imports – by 74,000 mt. Further expansion of UDP over the next five years could return Bangladesh to rice self-sufficiency.

### Impact on Bangladesh's Budget and Balance of Payments

ILSAFARM impacted the GoB's budget by reducing farmers' use of government-subsidized fertilizers. ILSAFARM improved Bangladesh's foreign exchange account in 2010 by more than \$34 million. Two items – rice and inorganic fertilizers – account for this impact. The 74,000 mt of additional rice produced in 2010 by the ILSAFARM project saved the country \$32.9 million in foreign exchange. Farmers utilizing UDP used less urea fertilizer, saving the country an additional \$1.4 million in foreign exchange.

### Impact on the Environment

Farmers using UDP reduced urea use and increased nitrogen use efficiency (the percent of applied nitrogen absorbed by the rice plants). ILSAFARM reduced nitrogen lost to the environment by an estimated 5,100 mt. Much of this lost nitrogen would have promoted algae and other water weeds, contributing to the eutrophication of local and regional waters. In addition, ILSAFARM – by

reducing annual use and therefore production of urea by 6,600 mt in 2010 – cut annual greenhouse gas emissions by 12,000 mt, worth \$140,000-\$220,000 per year at current prices for emission offsets.

### Impact on Gender Equity

ILSAFARM staff set a target that at least 10 percent of participants in all activities would be women. As of the end of September 2010, this target was achieved in six of seven monitored activities (workshops with stakeholders, farmers' training, motivational field visits, field days, demonstrations and ownership of briquette machines). In only one monitored activity – training of urea briquette producers – did participation of women remain below 10 percent.

### Contribution of Various Interventions in Reaching Project Objectives

ILSAFARM pursued a range of activities to inform farmers about UDP. In the final impact survey, from 45 to 77 percent of respondents who first used UDP in 2009 or 2010 identified DAE extension agents, other farmers and ILSAFARM/IFDC as sources of information about UDP. The next most frequently cited sources of information – cited by 29 percent to 46 percent of new users – were handbills at mosques, fertilizer dealers or USG producers and demonstration plots. One key strategy – partnering with DAE – multiplied the project's field-level workforce by a factor of more than 40. While IFDC employed 22 field monitoring officers (FMOs), these FMOs worked with more than 900 of DAE's Sub-Assistant Agricultural Officers.

No matter how successful an extension program may be in motivating farmers to do something new, it fails if farmers cannot access the necessary inputs. ILSAFARM tackled this issue by recruiting entrepreneurs, subsidizing their purchases of briquetting machines, providing technical and business training and assisting with sales efforts. In two years, ILSAFARM persuaded and assisted more than 200 businessmen and businesswomen to buy briquetting machines.

### Sustainability of Project Achievements Under Different Scenarios

In the ILSAFARM project area, 83 percent of farmers who used UDP in the 2009 Aus cropping season were repeat users in the 2010 Aus season. Similarly, 90 percent of farmers who used UDP in the 2009 Aman cropping season repeated that use in Aman 2010. Benefits of UDP are widely recognized; in the final impact survey, 90 percent of respondents who had used UDP – as well as 74 percent who had never used UDP – reported that UDP use increased yields. UDP use spread farmer-to-farmer: 300 (66 percent) of 457 farmers who had used UDP reported that their use had influenced other farmers to try UDP. Farmers also are extending UDP use to other crops – 69 (15 percent) of 457 farmers who had used UDP on rice reported that they had also used it on one or more other crops.



The final impact survey asked why farmers had not used UDP. Notably, among users who did not use UDP in Aman 2010, only one percent said that they were not happy with results from previous use; 43 percent said that UDP was not available; and 33 to 39 percent said that UDP use is more time-consuming or laborious. Among those who had never used UDP, the most common reason given for not using UDP was not enough information.

Of those who had used UDP, 97 percent said that availability of an applicator would influence them to use UDP or to use it more often. With or without project support, and with or without an applicator, UDP use can be expected to grow – but not nearly as rapidly as with a project helping to solve technical problems, build farmer demand and build and ensure USG supply.

#### Strength of the Small Business Model to Accommodate Growth in USG Demand

With limited initial farmer demand to use the UDP technology, Bangladesh chose the small business model for USG supply, which allows supply to grow with demand. Since the mid-1990s, USAID has supported a series of projects that have assisted local businesses to produce small briquetting machines and rural entrepreneurs to buy and operate these machines. Among surveyed businesses that produced USG in 2010, the obstacle to growth cited most often was lack of

money to expand – mentioned by almost 50 percent of the businesses. Access to urea was an obstacle for 18 percent.

#### Conclusions

Expansion of UDP use can make a major contribution to food security in Bangladesh. The gains achieved by the ILSAFARM project may already be sustainable in a dynamic sense – not only continuing, but also growing on their own. Because Bangladesh is a leader in UDP use, a project such as ILSAFARM provides a good laboratory to identify and to address whatever questions emerge as more farmers adopt UDP.

For UDP use to be sustainable, the initiative for expansion must shift from DAE to USG producers and farmers. To accelerate this shift, more can be done to help USG producers play a larger role extending UDP use. To address agronomic questions that will help farmers reach higher returns with UDP, the GoB and future projects should conduct varied trials and should also liaise with and motivate others to do complementary research.

To avoid a possible obstacle to sustainability, dialogues with organizations at the national and upazila levels must be undertaken. Such organizations would include the MoA, DAE and Bangladesh Fertilizer Association.

# AfricaFertilizer.org

A Tool to Help Fuel the African Green Revolution



Launched in March 2010, [www.africafertilizer.org](http://www.africafertilizer.org) (AFO) is a tool to help fuel the African Green Revolution as outlined in the *Abuja Declaration* at the Africa Fertilizer Summit in Abuja, Nigeria, in June 2006. The website serves as a global Internet forum to disseminate and exchange information on fertilizer production, trade, use and related topics to benefit Africa.

In June 2010, participants at the International Fertilizer Industry Association (IFA) Africa Forum agreed unanimously that [www.africafertilizer.org](http://www.africafertilizer.org) would be the sole public and web-based platform where all existing and new data on fertilizers in Africa will be collected, merged and maintained. Major partners involved are IFDC, IFA, the Food and Agricultural Organization of the United Nations (FAO), AGRA, COMESA, New Partnership for Africa's Development (NEPAD) and international fertilizer research institutes.

A concept note was developed and shared with AFO partners in November 2010, which proposes to: formally establish an AFO consortium in 2011; develop a 2015 strategy with a broadened partnership base; integrate the AFO database and portal with partner databases; and extend data collection to at least 12 countries, including seven in Sub-Saharan Africa that account for more than 75 percent of fertilizer consumption in Africa.

With support from IFA, FAO and IFDC field projects, IFDC has enriched the AFO website with more content, including directories of key fertilizer sector stakeholders, and trade, production and consumption data shared from partners' databases. Other developments include:

- Since August 2010, international prices and market outlook bulletins are being published.
- Since October 2010, monthly retail prices of fertilizers are also available online for eight East African countries and 10 West African countries, based on information collected through the Agricultural Input Market Information and Transparency System for Africa (AMITSA) and the MIR Plus project, respectively.
- The statistics section has been revamped to offer better access to customized reports. [AfricaFertilizer.org](http://AfricaFertilizer.org) should be able to monitor 95 percent of the African fertilizer market by 2013.

**The goal of AFO** is to contribute to the development of sustainable and profitable agriculture in Africa through an increased use of agro-inputs, contributing to poverty elimination and food security.

**The objectives of AFO** are to facilitate and manage the development of a shared source of technical and market information on fertilizers in Africa. These are being done to support the implementation of continental, regional and national agricultural policies, and to benefit the private sector, particularly Africa's smallholder farmers.

**AFO's plans for the next three years** are to further develop this high-quality, Internet-based portal focused on fertilizers in Africa. The website is supported by a consortium led by five internationally recognized institutions – the African Union (and its NEPAD agency), FAO, AGRA, IFA and IFDC (leading the program implementation and day-to-day management of the portal).

**The thematic focus of AFO** covers four main areas:

- Market intelligence, such as international and local prices of a variety of fertilizer products, directories, publications and news.
- Essential statistics, such as production, trade, consumption and fertilizer use per crop.
- M&E data that can support AFO partners' programs, including monitoring the effective implementation of Africa Fertilizer Summit recommendations.
- Related global issues, including food security, climate change and environmental footprints.





# Virtual Fertilizer Research Center

Nourish the Soil, Feed the World



### Food Supply Requirements

The world population is expected to grow by more than 2.5 billion by 2050, increasing from the current 6.7 billion to 9.2 billion. This increase is equivalent to adding nearly one million people to the global population every four to five days (about 95 percent of all births are in developing countries). Currently, more than one billion people are going hungry and one in six people are food insecure.

To meet the food requirements of the world's ever-growing population, it is estimated that food production must increase from between 40 percent to 100 percent over current levels. The lower end of the range is the minimum to maintain the per capita status quo in food production. Intermediate estimates take into account the desire to meet Millennium Development Goal 1 – reducing hunger and poverty. Estimates at the higher end also take into account the likely rise in demand from a growing global middle class, particularly with respect to increasing consumption of animal-based protein which requires greater levels of grain production. Under any scenario, the absolute growth in food supply needs is unprecedented in human history.

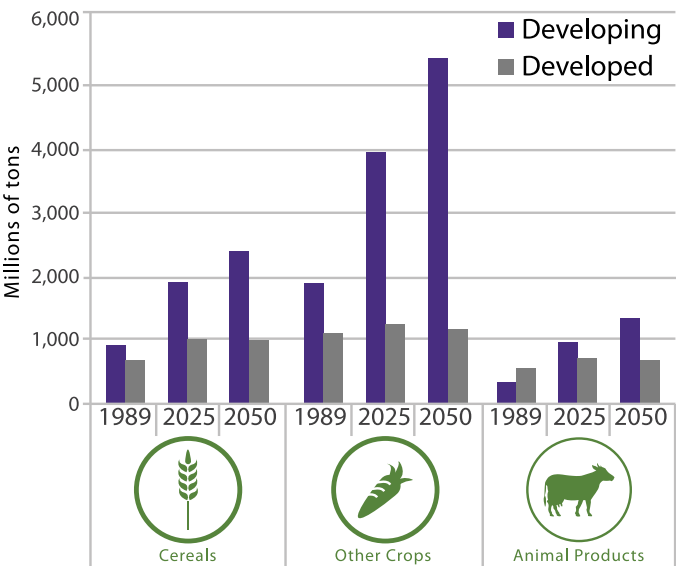
### Meeting the Food Supply Challenge

Food production can be significantly increased by two methods – increasing the area under cultivation and/or increasing crop yield per unit of land. Expanding land area for crop production is problematic for many reasons and the environmental cost of doing so is increasing.

Meanwhile, arable land is being lost to human settlement and other causes and additional agricultural land is being degraded by nutrient mining of the soil.

In the past, agricultural technology advances combined with land expansion kept the food supply growing more rapidly than the population growth rate. Now, with the scarcity of potentially arable land and increasing cost of land use, technological advances are critical.

Projected Demand Growth of Cereals, Other Crops and Animal Products Until 2050



However, such advances cannot be taken for granted and can only be achieved by breakthroughs in either basic or applied research. Currently, the technology does not exist to double the food supply in a sustainable manner.

Since the end of World War II, commercial fertilizer products have played a major role in increasing crop productivity. It is estimated that since the 1960s, fertilizer has accounted for about 56 percent of the rise in average yields and about 30 percent of the rise in total production. It is also estimated that some 40 percent of the protein currently consumed by humans is derived from crops grown with inorganic nitrogen (N) fertilizers.

Despite its critical role, current methods of production and use of fertilizer products are quite inefficient in terms of energy consumption and raw material losses. Crops may consume as little as 30 percent of the nitrogen in applied urea. A portion of this unused fertilizer does not disappear but becomes environmental pollutants.

Since the early 1990s, public funds for new fertilizer technology research and development (R&D) programs have essentially disappeared. Further, fertilizer companies have invested almost nothing in R&D. Over the past 25 years, no new, significantly more efficient fertilizer product has been developed by the fertilizer industry

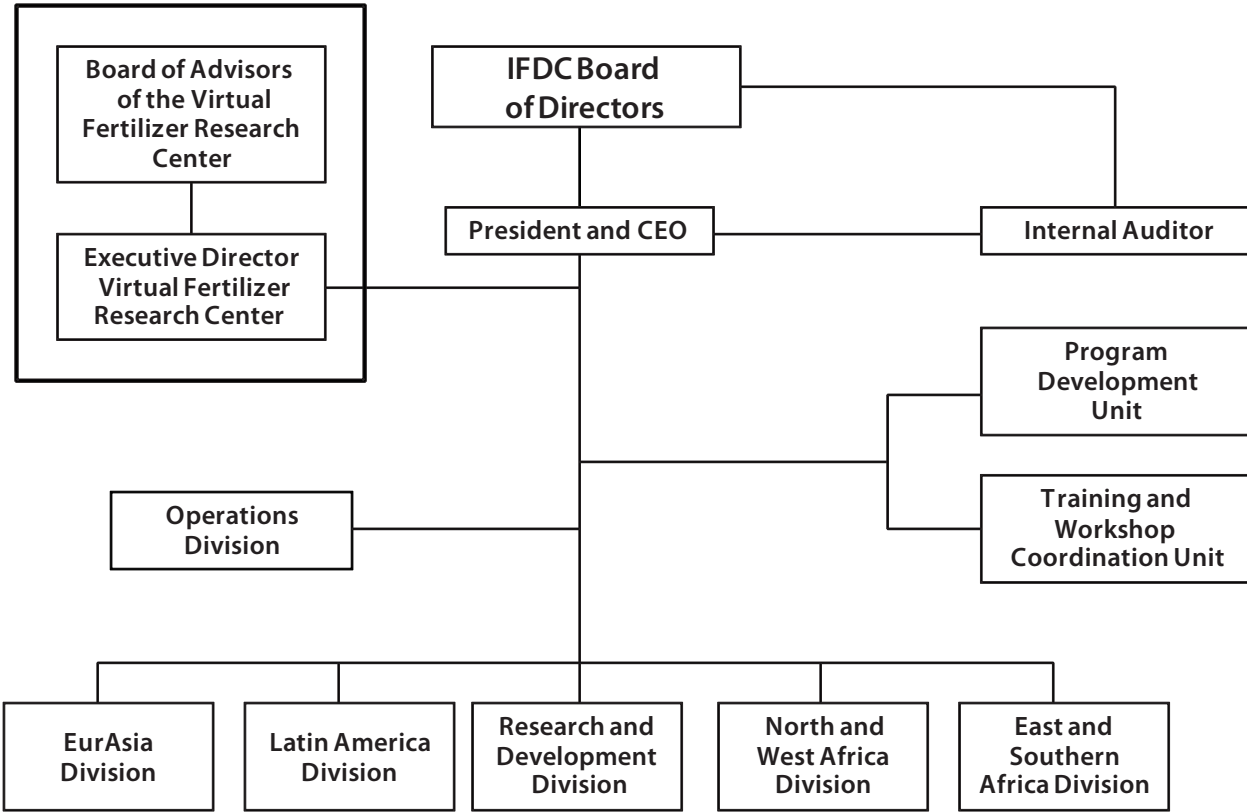
## VFRC VISION

The world's smallholder farmers have ready access to sustainable, affordable, efficient and environmentally friendly fertilizers.

## VFRC MISSION

Through collaborative research and development, the VFRC will develop and introduce the next generation of the world's fertilizer products and technologies necessary to benefit smallholder farmers in the developing world.

IFDC - VFRC Organizational Structure





World Fertilizer Consumption, 2008/09 (mmt)  
Source: FAO

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
Latin America	6.3	4.8	5.5	16.6
Africa	3.4	1.0	0.5	4.8
Asia	62.1	22.2	12.8	97.2
Developing Countries	70.9	27.3	18.4	116.6
Developed Countries	28.3	9.3	7.6	45.2
Total World	99.2	36.6	26.0	161.8

that is cost-effective for use on food crops by farmers in less-developed countries.

The world’s resources of phosphorus (P) and potassium (K) from which to make fertilizers are finite and the production of phosphate concentrate from mined ore results in significant losses. In addition, it takes the energy equivalent contained in four barrels of oil to make one mt of urea (N-based) fertilizer. More than 120 mmt of urea were used in 2008, requiring the energy equivalent of 480 million barrels of oil to produce – and nearly two-thirds of this amount (about 320 million energy-equivalent barrels) was wasted due to fertilizer and crop use inefficiencies.

Current fertilizer technologies require capital-intensive production facilities that make the “one” product the “one” way. There is little market incentive for fertilizer companies to invest heavily in new product development.

It was because of these various circumstances that IFDC created the Virtual Fertilizer Research Center (VFRC) in 2010. The VFRC is a global research initiative to provide global solutions to global problems. The VFRC is focusing on the creation of the next generation of fertilizers and production technologies. New and improved fertilizers are critical to help feed the world’s growing population and ultimately provide food security, while protecting the environment and ensuring the sustainable use of the earth’s non-renewable resources.

The VFRC is a virtual entity, comprised of the work of multiple research institutions cooperating to advance

Global NPK Consumption, 2008/09



a unified research agenda. It would be prohibitively expensive to gather the scientists and equipment needed to achieve this agenda in a single location. In today’s Internet environment, it makes practical sense to engage scientists through their existing institutions, making use of their current facilities.

IFDC expects that the VFRC’s global mission and global, virtual “workforce” will be endorsed and supported financially by multiple international donors. The VFRC will partner with universities, public and private research laboratories and the global fertilizer and agribusiness industries. It will bring together the best scientific, business and government minds to create a research system producing more (and more nutritious) food with fewer wasted resources and a reduced environmental impact.

The VFRC will function as a semi-autonomous unit of IFDC because it would be time- and resource-consuming to create a completely separate institution. As a unit of IFDC, the VFRC can share existing administrative and financial systems. It is semi-autonomous for two principal reasons. The first is that the structure will give prospective donors greater assurance that contributions will be used directly and cost-effectively to advance the agreed research agenda. The second reason is that the VFRC can engage a world-class Board of Advisors (BoA) to focus on the technical and commercialization aspects of the VFRC agenda without taking on fiduciary responsibility, which might dissuade some advisors.

Initial Research Focus

By emphasizing global economic viability and speed to market, the VFRC will pursue research initiatives which fall into the following three categories:

1. Modify and improve existing fertilizer products and technologies with an emphasis on improved efficiency.
2. Develop “next generation” smart fertilizer products and technologies.
3. Pursue paradigm-shifting products and processes that will maximize the recycling of plant nutrients, minimize the use of fossil fuels, decentralize production and have less environmental impact.

Progress to Date

During 2010, IFDC made significant progress moving the VFRC forward:

- A panel of global experts was assembled to serve as the VFRC BoA (see below). The BoA met on May 23-24 and September 27.

- Two major analytical tools were utilized:
  - *World Phosphate Rock Reserves and Resources*, a publication essential to locate and classify phosphate reserves and commercialization.
  - FertTrade, a simulation model which will be used to evaluate the potential impact of research and commercialization project proposals.
- Preliminary research on N and P resources and production issues was initiated.
- Construction of a framework for the sharing of intellectual property began.

In summary, the VFRC will direct and coordinate a long-term international fertilizer research program, emphasizing increased production of nutritious crops, environmental protection and improvements in the lives of farm families in developing countries.

VFRC Board of Advisors

**Dr. Jimmy G. Cheek - Chairman of the VFRC Board of Advisors**  
Chancellor  
University of Tennessee  
Knoxville, TN, USA

**Dr. Marco Ferroni**  
Executive Director  
Syngenta Foundation for Sustainable Agriculture  
Basel, Switzerland

**Mark Huisenga**  
Agriculture Programs Advisor  
U.S. Agency for International Development  
Washington, D.C., USA

**Assétou Kanouté**  
Assistant Professor  
Polytechnic Institute for Rural and Applied Research  
University of Mali  
Katibougou, Mali

**Luc Maene**  
Director General  
International Fertilizer Industry Association  
Paris, France

**M. Peter McPherson**  
President  
Association of Public and Land-Grant Universities  
Washington, D.C., USA

**Honorable Prof. Ruth Oniang'o**  
President, Sasakawa Africa Association  
Founder and Editor-in-Chief  
*African Journal of Food, Agriculture, Nutrition and Development*  
Founder and Leader  
Rural Outreach Programme  
Nairobi, Kenya

**Dr. Roelof (Rudy) Rabbinge**  
Chair, Science Council, CGIAR  
Professor, Wageningen University  
Wageningen, The Netherlands

**Dr. Amit Roy**  
President and Chief Executive Officer  
IFDC  
Muscle Shoals, AL, USA

**Dr. Renfang Shen**  
Director General  
Institute of Soil Science, Chinese Academy of Sciences  
Director, State Key Laboratory of Soil and Sustainable Agriculture  
Nanjing, China

**Dr. A.K. Singh**  
Deputy Director General, Natural Resource Management Division  
Indian Council of Agricultural Research  
New Delhi, India

**Ajay Vashee**  
President  
International Federation of Agricultural Producers  
Ndola, Zambia

**Dr. Juergen Voegelé**  
Director  
Agricultural and Rural Development  
The World Bank  
Washington, D.C., USA

**Dr. Prem Warrior**  
Senior Program Officer  
Agricultural Development Group (Science and Technology Team)  
Bill & Melinda Gates Foundation  
Seattle, WA, USA



# Financial Highlights

The following is a summary of financial information for the year ended December 31, 2010. The full financial statements and the independent auditors' reports are available from IFDC upon request.

	US \$'000
<b>Balance Sheet - For the year ended December 31, 2010</b>	
<b>Assets:</b>	
Cash and cash equivalents	7,042
Restricted cash	1,580
Contributions receivable	1,237
Contracts receivable, net of allowance for doubtful accounts	6,054
Other receivables	1,018
Supplies inventory	158
Prepaid expenses and advances	1,111
<b>Total Current Assets</b>	<b>18,200</b>
Buildings and equipment, net	102
Contributions receivable, noncurrent	
<b>Total Assets</b>	<b>18,302</b>
<b>Liability and Net Assets:</b>	
Accounts payable	817
Accrued annual and sick leave	1,325
Deferred revenue	12,757
Other liabilities	1,580
<b>Total Current Liabilities</b>	<b>16,479</b>
<b>Unrestricted Net Assets</b>	<b>1,815</b>
<b>Permanently Restricted Net Assets</b>	<b>8</b>
<b>Total Liabilities and Net Assets</b>	<b>18,302</b>

	US \$'000
<b>Statement of Revenues and Expenses - For the year ended December 31, 2010</b>	
<b>Revenues and Support:</b>	
ACDI/VOCA	490
Alliance for a Green Revolution in Africa	2,452
Chemonics International Inc.	2,793
Common Funds for Commodities	991
Common Market for Eastern and Southern Africa	1,696
CORAF/WECARD	511
Developing Business Services Markets	223
Dutch Embassies	17,607
Government of Bangladesh	488
International Crops Research Institute for the Semi-Arid Tropics	676
International Fertilizer Industry Association	100
International Fund for Agricultural Development	637
Millennium Development Authority	1,442
National Programme for Food Security - Nigeria	1,797
Netherlands Ministry for Development Cooperation	10,287
Shell Canada Limited	947
The Africa Rice Center	382
The Bill & Melinda Gates Foundation	257
The Fertilizer Institute	142
The William and Flora Hewlett Foundation	454
United States Agency for International Development	8,342
Others	4,451
<b>Total Revenues and Support</b>	<b>57,165</b>
<b>Expenses:</b>	
Research and development	2,645
Agribusiness	29,337
Natural resource management	9,548
Capacity building	8,658
Support activities	7,906
<b>Total Expenses</b>	<b>58,094</b>

Decrease in unrestricted net assets

(929)



# Revenue Sources

ACDI/VOCA  
African Development Bank  
Agrium Inc.  
Agrifos Fertilizer, LLC  
Alliance for a Green Revolution in Africa  
ARD, Inc.  
Bill & Melinda Gates Foundation  
Chemonics International, Inc.  
Common Fund for Commodities  
Common Market for Eastern and Southern Africa  
CORAF/WECARD – Senegal  
Developing Business Services Markets – Bangladesh  
Food and Agriculture Organization of the United Nations  
Forum for Agricultural Research in Africa  
Georgia-Pacific Resins, Inc.  
Government of Bangladesh  
Government of Burkina Faso  
Grupo Fertinal, S.A. de C.V.  
International Crops Research Institute for the Semi-Arid Tropics  
International Fertilizer Industry Association  
International Food Policy Research Institute  
International Fund for Agricultural Development  
International Plant Nutrition Institute

International Potash Institute  
Millennium Development Authority – Ghana  
National Programme for Food Security – Nigeria  
Netherlands Directorate-General for International Cooperation  
New Partnership for Africa’s Development Planning and Coordinating Agency  
Petroleo Brasileiro S.A.  
Royal Embassies of the Kingdom of the Netherlands in Benin, Ghana, Mali and Rwanda  
Shell Research Limited  
Sour Gas Solutions, Inc.  
Taraba State Government – Nigeria  
The Africa Rice Center (WARDA)  
The Fertilizer Institute  
The Sulphur Institute  
The William and Flora Hewlett Foundation  
Uhde GmbH  
U.S. Agency for International Development  
U.S. Department of Agriculture  
Unity Envirotech  
University of Georgia  
University of Michigan  
World Bank

# 2010 Project Portfolio

## East and Southern Africa Division

### Agricultural Input Markets Strengthening (AIMS II)

**Objective** - AIMS II promotes private sector investment in agro-input technologies and marketing in Mozambique. The project is improving farmers’ access to technologies through competitive markets and dealer networks. Key components are business development and capacity building, association building, technology transfer and extension support, increased production of improved seeds and improved policy environments.

**Collaborators** - International Institute of Tropical Agriculture (IITA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Citizens’ Network for Foreign Affairs (CNFA)

**Donor** - USAID

**Location** - Mozambique

### Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST)

**Objective** - CATALIST is increasing food security, reducing poverty, improving regional collaboration and fostering peace and security in the Great Lakes Region of Central Africa. The project enables farmers to increase their crop production and incomes through an integrated approach combining sustainable agricultural intensification technologies with farm-to-market linkages, agroforestry and infrastructure construction.

**Collaborators** - Farmer organizations, national and international NGOs and national ministries of agriculture

**Donor** - Royal Embassy of the Netherlands

**Locations** - Burundi, DRC and Rwanda

### COMESA Regional Agricultural Inputs Program (COMRAP)

**Objective** - COMRAP is responding to rising food prices by increasing agricultural productivity through improved access to finance, training, fertilizer and seeds. Over the course of its implementation, the project will reach three million smallholder farmers in eight countries in ESAFD. COMRAP is a two-year (2010-2012) project.

**Collaborator** - ACTESA

**Donor** - European Union Food Facility Program

**Locations** - Burundi, Ethiopia, Malawi, Rwanda, Swaziland, Uganda, Zambia and Zimbabwe

### Extending Agro-Input Dealer Networks (EADN) in East Africa

**Objective** - EADN strengthens and extends agro-dealer capacities in Kenya, Tanzania and Uganda. The project focuses on building highly functioning agro-dealer networks that can support the introduction of improved production technologies to smallholder farmers. The project also focuses on improving agro-dealer promotion and distribution capabilities for products such as quality fertilizers, improved seeds and CPPs.

**Collaborators** - IFAD, agro-dealers and farmers

**Donor** - IFAD

**Locations** - Kenya, Tanzania and Uganda

### Food and Agriculture Organization (FAO) Voucher Program

**Objective** - In September 2009, IFDC received a grant from the FAO to assist the Government of the Republic of Mozambique (GRM) in the implementation of a fertilizer/seed voucher pilot program. The program initially targeted 25,000 maize and rice farmers. With the successful completion of the pilot program, up-scaling of the program to reach a much larger percentage of Mozambique’s total maize and rice farmers is expected.

**Collaborators** - Agro-dealers, bankers, FAO, farmers and GRM

**Donor** - FAO

**Location** - Mozambique

### Livelihoods and Enterprises for Agricultural Development (LEAD)

**Objective** - LEAD is helping to raise rural agricultural productivity and incomes for smallholder farmers in Uganda, providing support to targeted smallholders who grow food and cash crops. Utilizing the value chain approach to agricultural development, the project improves productivity through training and access to quality agro-inputs, and increases trade capacity and market competitiveness by building better market linkages.

**Collaborators** - Farmer and producer organizations

**Donor** - USAID

**Location** - Uganda

### Maize Intensification in Mozambique (MIM)

**Objective** - The MIM project assists smallholder farmers to increase maize production through better access to quality agro-inputs and specialized training programs. MIM strengthens the entire maize value chain by building linkages between farmers and agro-dealers, maize buyers, NGOs, farmer organizations and agricultural extension services. The project utilizes farmer cluster formation and demonstration fields to promote improved agricultural technologies.

**Collaborators** - International Maize and Wheat Improvement Center (CIMMYT), farmer and producer organizations, marketing companies and NGOs

**Donors** - IFA, International Plant Nutrition Institute (IPNI) and International Potash Institute (IPI)

**Location** - Mozambique

### Mozambique Agro-Dealer Development (MADD)

**Objective** - The MADD project builds on the achievements of the AIMS II project, which promotes private sector investment in agro-input technologies and improves farmers’ access to these technologies through competitive markets and stronger agro-dealer networks. Building on these efforts, MADD is strengthening and expanding agro-dealer networks in Manica and Tete provinces of Mozambique.

**Collaborators** - Agro-dealers, farmers, fertilizer companies and seed supply companies

**Donor** - AGRA

**Location** - Mozambique



**Privatization of Rwanda’s Fertilizer Import and Distribution System (PReFER)**

**Objective** - The PReFER project is developing an efficient, effective and competitive private sector fertilizer procurement and distribution system. The project’s primary objective is to implement the orderly transition of the Rwandan government out of nationalized fertilizer procurement and distribution. To that end, IFDC identifies policies supportive of private sector enterprise in the fertilizer market and contributes to the development of a sustainable supply system. This effort is expected to stimulate fertilizer demand and will support the project’s objectives through agricultural intensification and farm output market development.

**Collaborators** - Private sector entrepreneurs and MINAGRI

**Donor** - USAID

**Location** - Rwanda

**Rwanda Agro-Dealer Development (RADD)**

**Objective** - RADD supports IFDC's CATALIST project, addressing supply-side input issues by building the capacity of agro-dealers and retailers in Rwanda. RADD devotes grant resources to build interest in fertilizer sector development and supports private investments in the importation and distribution of agro-inputs. The project focuses on agro-dealer network development in conjunction with the expansion of the Rwanda Fertilizer Association, the future foundation for the enhanced network. In addition to its support of various CATALIST efforts, the RADD project prepares the Rwandan government for an orderly transition out of nationalized fertilizer procurement.

**Collaborators** - Rwanda Fertilizer Association and agro-dealers

**Donor** - AGRA

**Location** - Rwanda

**Savings, Subsidies and Sustainable Food Security**

**Objective** - This field experiment in Mozambique studies the impact of fertilizer subsidies; the interaction of fertilizer subsidies and savings; and the impact of savings facilities and savings matches. Key assessments include farm output, household consumption and other household indicators (e.g., nutrition, health, child schooling) in the short- and long-term resulting from subsidies, savings and savings matches.

**Collaborators** - University of Michigan and University of Wisconsin

**Donor** - USAID

**Location** - Mozambique

**Strengthening Trade at the Regional Level in Agricultural Inputs in Africa (STAR)\***

**Objective** - The STAR project promoted food security and agricultural growth through improved regional trade along East and southern Africa’s entire agricultural value chain. The project improved market access for agro-dealers and smallholder farmers, including better access to quality agro-inputs and advanced technologies along with improved market linkages, local and regional agricultural policy reforms and greater involvement of agricultural enterprises.

**Collaborators** - Agro-dealers, COMESA, EAC, smallholder farmers and SADC

**Donor** - The William and Flora Hewlett Foundation

**Location** - Eastern and southern Africa

**Sustainable Energy Production Through Woodlots and Agroforestry (CATALIST-SEW)**

**Objective** - More than 90 percent of household energy in Central Africa’s Great Lakes Region is derived from biomass, contributing to rapid deforestation. CATALIST-SEW promotes sustainable energy production through reforestation and the development of wood fuel and charcoal value chains. The project also aims to decrease competition for land use between the energy and agricultural sectors by increasing wood production, agricultural productivity and incomes.

**Collaborators** - Regional NGOs, traders and transporters, wood and charcoal producers, World Wildlife Fund - Belgium, MINAGRI and CATALIST

**Donor** - Royal Embassy of the Netherlands

**Locations** - Burundi, the North and South Kivu provinces of the DRC and Rwanda

**North and West Africa Division**

**Africa Fertilizer Efficiency Program\***

**Objective** - This IFDC program was an agricultural intensification effort targeting peri-urban farmers with the potential to supply increased crop yields to nearby urban markets. These smallholder farmers, who have fields immediately adjoining urban areas, were trained by IFDC in new farming technologies and the use of high-quality agro-inputs, including fertilizer and high-yielding seed varieties. The project increased access to nutritional foods such as vegetables in these heavily populated areas.

**Collaborators** - Agrium, agro-dealers and peri-urban farmers

**Donor** - Agrium Inc.

**Locations** - Burundi, Ghana and Rwanda (additional work in Burkina Faso and Togo)

**Cassava Plus**

**Objective** - Cassava Plus is a public-private partnership to commercialize the cassava production of 160,000 farmers in three Nigerian states by linking them to markets more efficiently. The program assists farmers to plant, harvest and process cassava (utilizing a mobile unit that eliminates crop loss caused by rapid deterioration). The project guarantees farmers payment for delivered cassava and includes access to agro-inputs, training and new technologies. The project is expected to increase these farmers’ incomes by more than 20 percent.

**Collaborators** - DADTCO, farmers and Nigerian state governments

**Donor** - DGIS/Schokland Fund

**Locations** - Benue, Osun and Taraba states in Nigeria

**Development of Agribusiness Clusters in Mali\***

**Objective** - As an extension of the From Thousands to Millions (1000s+) project, the Development of Agribusiness Clusters in Mali project increased the number of agribusiness clusters in Mali by 30 percent and sought to build on the strategy of making agro-dealer clusters sustainable – economically, organizationally and environmentally. The project also contributed to business development in rural areas and agro-input distribution.

**Collaborators** - Agro-dealers, business support services and producer organizations

**Donor** - Royal Embassy of the Netherlands

**Location** - Mali

**Rural Economic Development of the Koulikoro Region/ Développement Économique de la Région Koulikoro (DERK II)**

**Objective** - The DERK II project is building the capacities of the oilseed value chains (jatropha, sesame, shea butter) in Mali’s agricultural sector, focusing on the country’s Koulikoro region. To assist farmer organizations, DERK II provides training, access to agro-inputs and product processing, packaging, transportation and marketing. The project also builds linkages to agro-dealers, financial institutions and import/export enterprises.

**Collaborators** - Agro-dealers, farmer organizations, financial institutions and import/export enterprises

**Donor** - Netherlands Development Organization (SNV) - Mali

**Location** - Mali

**Fertilizer and Sustainable Agricultural Development (F&SAD)**

**Objective** - The F&SAD project improves access to, and the efficient use of agro-inputs in the West African nations of Mali, Niger and Togo. Using the ISFM approach, F&SAD provides agricultural intensification support. In addition to the ISFM strategy, the project includes participatory development of technology packages and facilitation of improved linkages between farmers and input and output markets.

**Collaborators** - Agro-dealers, associations and producer organizations

**Donor** - IFA

**Locations** - Mali, Niger and Togo

**Food Security and Crisis Mitigation Program (Rice Emergency Initiative)\***

**Objective** - The Food Security and Crisis Mitigation Program was created, in part, to boost rice production in Ghana, Mali, Nigeria and Senegal in order to mitigate potential shortages of this staple crop. The program targeted 10,000 rice farmers in each of the nations and sought to boost total domestic rice production by 30,000 mt of paddy rice. IFDC also improved access for the 40,000 farmers to certified rice seed and quality fertilizer.

**Collaborators** - Farmers and GFSR program

**Donor** - WARDA

**Locations** - Ghana, Mali, Nigeria and Senegal

**From Thousands to Millions (1000s+)\***

**Objective** - The 1000s+ project strived to improve the livelihoods of one million farm households, (involving 10 million people), through the up-scaling of IFDC’s CASE approach. The farmer-led initiative, based on agribusiness cluster formation, focused on ISFM, improving soil fertility through the combined use of mineral and organic fertilizers.

**Collaborators** - Agribusinesses, business support services and producer organizations

**Donor** - DGIS and Agriterria

**Locations** - Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria and Togo

**Ghana Agro-Dealer Development Project (GADD)**

**Objective** - The GADD project is building the agricultural productivity and incomes of 850,000 smallholder farmers across Ghana by increasing the availability and affordability of quality agro-inputs including seeds, fertilizers and CPPs. To support these efforts, GADD is building the capacities of 2,200 agro-dealers and training them in the proper support of farmers. The project also builds the capacities of 150 seed producers.

**Collaborators** - AGRA, agro-dealers, farmers and Ghana Agricultural Associations’ Business and Information Centre

**Donor** - AGRA

**Location** - Ghana

**Improving the Access of Non-Cotton Agricultural Producers in Benin**

**Objective** - The Benin Non-Cotton project is increasing high-value crop productivity by a projected 40 percent while increasing 30,000 smallholder farmers' incomes by 20 percent. The project focuses on increasing farmer capacities to produce maize, pineapple and rice through access to quality agro-inputs, training and enhanced market linkages. In addition, lending institutions have established guaranteed micro-financing programs.

**Collaborators** - Farmers, financial institutions and Royal Embassy of the Netherlands

**Donor** - Royal Embassy of the Netherlands

**Location** - Benin

**Linking Farmers to Markets (FtM)**

**Objective** - Through the FtM project, IFDC is increasing northern Ghanaian rice, maize, sorghum and soybean farmers’ incomes and long-term business opportunities by developing new commercial linkages with traders, marketing companies, processors and institutional buyers. FtM will affect approximately 50,000 smallholders’ livelihoods by creating farmer alliances, training and equipping small- to medium-sized enterprises and building lasting relationships with national, regional and international produce-purchasing companies.

**Collaborators** - Farmers, traders, marketing companies, processors and institutional buyers

**Donor** - AGRA

**Location** - Northern Ghana

**Mainstreaming Pro-Poor Fertilizer Access and Innovative Practices in West Africa**

**Objective** - The project improves livelihoods in West Africa with a focus on resource-poor farmers, farmer organizations and community associations through improved land husbandry and better access to, and more efficient use of fertilizer. The project utilizes a holistic ISFM approach to improve depleted soils. The project also focuses on natural resources, improved technologies, competitive markets, private enterprise development and national policy advocacy.

**Collaborators** - Community associations, farmer organizations and smallholder farmers

**Donor** - IFAD

**Location** - West Africa

**Marketing Inputs Regionally Plus (MIR Plus)**

**Objective** - MIR Plus is improving policy and regulatory environments in the 15 nations of ECOWAS. The project is increasing the use and efficiency of agro-inputs, improving the availability of technical and market information and using technology to link producers’ organizations with agro-dealers. The project links 2.23 million farmers to agro-dealers who will help train and supply the farmers. The project should increase maize and rain-fed rice yields by 20 percent for targeted farmers in Ghana and Nigeria, and increase irrigated rice yields in Burkina Faso, Ghana, Nigeria, Senegal and Sierra Leone by 20 percent.

**Collaborators** - ECOWAS, private input importers and dealers, sector ministries and UEMOA

**Donors** - DGIS, ECOWAS and UEMOA

**Locations** - Benin, Burkina Faso, Cape Verde, Côte d’Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo



**Maximizing Agricultural Revenue and Key Enterprises in Targeted Sites (MARKETS)\***

**Objective** - The MARKETS project helped to transform segments of Nigerian subsistence agriculture into commercially competitive markets. IFDC’s role was to improve the agro-input supply system and increase the sale of improved seeds, fertilizers and CPPs. IFDC also created networks of trained agro-dealers while developing input markets to create stronger value chains.

**Collaborators** - Agro-dealers, Chemonics and farmers

**Donor** - USAID

**Location** - Nigeria

**MiDA’s Millennium Challenge Corporation (MCC) Agricultural Project**

**Objective** - The MCC, also known as the Ghana Compact, was implemented in 2006 with the goal of reducing poverty by raising farmer incomes through private sector-led agribusiness development. This project continues the MCC focus on increasing the production and productivity of high-value cash and staple food crops in certain areas of Ghana, and is charged with enhancing the competitiveness of Ghana’s export ban in traditional agricultural crops.

**Collaborators** - Farmers, small and medium enterprises

**Donor** - Millennium Development Authority (MiDA)

**Location** - Ghana

**Nigeria Agro-Dealer Support (NADS)**

**Objective** - NADS provides credit and support to rural agro-dealers across Nigeria. IFDC works with local partners to build dealer capacity and strengthen technical and business knowledge. The project supports trade associations and assists agro-dealers to access investment capital through risk-sharing. Dealers are also trained to provide services such as field demonstrations, soil testing and teaching best practices to farmers.

**Collaborators** - AGRA, agro-dealers and agro-dealer associations, farmers and Fertilizer Producers and Suppliers Association of Nigeria

**Donor** - AGRA

**Locations** - Four states in Nigeria

**Nigeria Fertilizer Voucher Program**

**Objective** - The Nigeria Fertilizer Voucher Program enables farmers to obtain quality agro-inputs in a timely fashion (using vouchers in lieu of cash), while also helping to build the businesses and professionalism of rural agro-dealers. By the end of 2010, more than 400,000 smallholder farmers in four Nigerian states received vouchers. Crops targeted for increased production include maize, rice, yams, sorghum, cassava, soybeans and millet. The project also works to strengthen Nigeria’s private sector fertilizer supply and distribution channels.

**Collaborators** - AGRA, agro-dealers and farmers

**Donors** - AGRA, Nigerian National Food Reserve Agency and USAID

**Locations** - Four states in Nigeria

**Prevention of Seed Cotton Contamination in West Africa**

**Objective** - This three-year pilot project is assisting cotton traders, producer organizations and 27,000 farmers in Burkina Faso, Côte d’Ivoire and Mali to significantly reduce excess cotton contamination. More than 100,000 mt of seed cotton will be affected over the life of the project. The project demonstrates that enhanced efforts to produce uncontaminated cotton lint are rewarded with higher world market prices, increasing revenues for both cotton enterprises and smallholder farmers.

**Collaborators** - Cotton traders, farmers and producer organizations

**Donors** - European Union/Common Fund for Commodities

**Locations** - Burkina Faso, Côte d’Ivoire and Mali

**Strategic Alliance for Agricultural Development in Africa (SAADA)\***

**Objective** - For the SAADA project, IFDC organized a strategic alliance of international NGOs to facilitate regional, national and multi-national agricultural intensification/agribusiness programs with an initial focus in West Africa – with project expansion into select countries of East and southern Africa. The project utilized CASE for agribusiness cluster formation and ISFM to increase agricultural productivity.

**Collaborators** - Agricultural Intensification in Sub-Saharan Africa (AISSA) Network and producer organizations

**Donor** - DGIS

**Location** - Sub-Saharan Africa

**West Africa Cotton Improvement Program (WACIP)**

**Objective** - WACIP is boosting the productivity and profitability of the cotton sector in Benin, Burkina Faso, Chad and Mali, known as the Cotton Four. IFDC works with farmers, researchers, input distributors, private enterprises, inter-professional associations and textile artisans. IFDC activities promote advanced agricultural practices that improve yields, build capacities, provide support to the ginning sector and help train artisans to access regional and international markets.

**Collaborators** - AISSA Network and producer organizations

**Donor** - USAID

**Locations** - Benin, Burkina Faso, Chad and Mali

**EurAsia Division**

**Accelerating Agriculture Productivity Improvement (AAPI)**

**Objective** - The AAPI project is a five-year intervention designed to strengthen and re-orient agricultural production systems in Bangladesh. The project goals are to improve food security and accelerate income growth in rural areas by increasing agricultural productivity on a sustainable basis. The AAPI project emphasis is on technology diffusion and development of support systems to achieve sustainability. The primary technology is FDP, which is well-suited to rice production. To a lesser extent, AAPI will support diffusion of a water use management technology referred to as AWD.

**Collaborators** - Bangladesh Ministry of Agriculture, DAE and the Bangladesh Fertilizer Association

**Donor** - USAID

**Locations** - Bangladesh (68 upazilas in 11 districts)

**Albania Credit Enhancement Fund**

**Objective** - This technical program, funded with monetized proceeds from the U.S. Department of Agriculture (USDA) Food for Progress Program, introduces technology and training to farmers in dairy and livestock operations, while increasing agribusiness enterprises' access to credit. The program trains farmers, builds linkages, facilitates the importation of improved cattle breeds, provides access to quality feed and introduces farmers to modern production and processing equipment.

**Collaborators** - Agro-dealers, dairy farmers, micro-credit enterprises and USDA

**Donor** - USDA

**Location** - Albania

**Expansion of Urea Deep Placement (UDP) Technology in Additional 80 Upazilas of Bangladesh**

**Objective** - Based upon the success of a 2007-08 project designed to increase rice yields in 80 upazilas (sub-districts), IFDC expanded its UDP technology transfer efforts to include an additional 80 upazilas. The project is increasing rice crop yields for 650,000 farmers, with more than 242,000 ha under cultivation utilizing the UDP process. The effort also includes training of nearly 2,000 DAE field officials to monitor long-term farmer progress.

**Collaborator** - Bangladesh DAE

**Donor** - DAE

**Locations** - Bangladesh (80 sub-districts)

**Improved Livelihood for Sidr-Affected Rice Farmers (ILSAFARM)\***

**Objective** - The ILSAFARM project, sponsored by USAID and the government of Bangladesh, helped restore rice farming to 280,000 families whose crops and lands were destroyed by Cyclone Sidr in 2007. At the center of efforts to maximize new crop yields, IFDC conducted ongoing trainings in UDP, a proven technology to increase crop yields while reducing the amount of fertilizer previously required.

**Collaborators** - Government of Bangladesh, DAE, farmers, Ministry of Agriculture and urea briquette producers

**Donor** - USAID

**Location** - Bangladesh

**Kyrgyzstan Agro-Input Enterprise Development II (KAED II)\***

**Objective** - KAED II was an extension of the original KAED project (2001-2008). Its expanded scope included both southern and northern Kyrgyzstan, and encouraged farmers to adopt agricultural intensification practices to increase food production, improve animal health and increase rural incomes. The project created sustainability at all levels, utilizing agribusiness and value chain members along with farmer and dealer associations.

**Collaborators** - Agro-dealers and farmers

**Donor** - USAID

**Location** - Kyrgyzstan

**Kyrgyzstan Agro-Input Enterprise Development Follow-On**

**Objective** - The two-year Follow-On component of KAED I and II will assist 20,000 farmers planting improved wheat varieties and 80,000 others adopting better farming and animal care practices. Follow-On is applying a holistic approach in addressing land reclamation and soil fertility restoration issues because land represents a scarce natural resource, particularly in southern Kyrgyzstan. Efforts to bring unused soil into production are combined with knowledge transfer to farmers and use of quality inputs to maximize the impact of the intervention. The Follow-On project entered into a PPP agreement with Oasis Agro LLC to develop a sustainable poultry feed industry and increase protein-based livestock feed in the country. The program provides farmers with training and access to key business resources to increase soybean acreage, improve production of high-quality edible oil and increase the domestic production of eggs.

**Collaborators** - Agro-dealers and farmers

**Donor** - USAID

**Location** - Kyrgyzstan

**Kyrgyzstan Local Economic Development Project (KLDP)**

**Objective** - This project will stimulate rapid, diversified and sustained agro-economic growth at the local level through advancements in Kyrgyzstan’s business and investment environment. KLDP will increase municipal finance and capital investment and improve competitiveness of sectors with the most economic potential, specifically agriculture and processing. It will upgrade workforce education, replicate best practices and implement economic and administrative reforms at the national level. The project will closely

complement the Kyrgyzstan Agro-Input Enterprise Development Follow-On project.

**Collaborators** - Finance institutions and agro-dealers

**Donor** - USAID

**Location** - Kyrgyzstan

**Market Development in the Fertilizer Sector of Bangladesh (Katalyst)**

**Objective** - Katalyst is a development project that assesses the fertilizer market with particular emphasis on the fertilizer policy framework. As a result of the assessment, strategic areas of intervention are being identified to improve the performance of the fertilizer value chain. Emphasis is placed on promoting appropriate fertilizer management practices, improving farmer access to quality inputs and creating a market-friendly regulatory framework.

**Collaborators** - Swisscontact-Katalyst, agro-dealers, farmers, Ministry of Commerce and policymakers

**Donors** - Canadian International Development Agency, Royal Embassy of the Netherlands, Swiss Agency for Development and Cooperation and United Kingdom Department for International Development

**Location** - Bangladesh

**Productive Agriculture in Tajikistan (PRO-APT)**

**Objective** - The PRO-APT project is increasing the productivity of traditional agricultural crops and strengthening the capacity and profitability of private sector agribusinesses. The Intensify Farm Productivity (IFP) component of PRO-APT is being implemented by IFDC. IFP is increasing crop and beef production along with market-driven opportunities to improve farmers’ living standards through increased income.

**Collaborators** - Agribusinesses and farmers

**Donor** - USAID

**Location** - Tajikistan

**United States**

**Southeast Climate Consortium**

**Objective** - The project is developing a climate information and decision support system for the southeastern United States that will contribute to an improved quality of life, increased profitability, decreased economic risks and more ecologically sustainable management of agriculture, forestry and water resources.

**Collaborators** - Auburn University, Clemson University, Florida State University, North Carolina State University, University of Alabama – Huntsville, University of Florida, University of Georgia and University of Miami

**Donors** - National Oceanic & Atmospheric Administration and USDA’s Risk Management Agency and National Institute of Food and Agriculture

**Location** - United States

*\*Projects that ended in 2010*

*Further information about each of these projects can be found on the IFDC website at [www.ifdc.org/projects](http://www.ifdc.org/projects).*



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