



35 Years of Accomplishments:
Building for the Future



Table of Contents

- 1 2009-2010 Highlights
- 2 IFDC Around the World
- 4 Message from the Chairman of the IFDC Board of Directors and the President and CEO
- 6 Introduction
- 8 Progress on IFDC's Special Initiatives
- 22 Virtual Fertilizer Research Center
- 24 IFDC.org
- 25 AfricaFertilizer.org
- 26 EurAsia Division
- 30 East and Southern Africa Division
- 34 North and West Africa Division
- 38 Research and Development Division
- 42 Training and Workshop Coordination Unit
- 44 Project Portfolio
- 48 Global Offices and Staff
- 57 Board of Directors
- 58 Financial Highlights
- 60 Revenue Sources

Acronyms and Abbreviations

1000s+ - From Thousands to Millions
AGRA - Alliance for a Green Revolution in Africa
AMITSA - Regional Agricultural Input Market Information and Transparency System
CASE - Competitive Agricultural Systems and Enterprises
CATALIST - Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability
COMESA - Common Market for Eastern and Southern Africa
CPPs - crop protection products
DGIS - Netherlands Directorate-General for International Cooperation
DRC - Democratic Republic of Congo
EAC - East African Community
EAD - EurAsia Division
ECOWAS - Economic Community of West African States
ESAFD - East and Southern Africa Division
FAO - Food and Agriculture Organization of the United Nations
ha - hectare

IFA - International Fertilizer Industry Association
ILSAFARM - Improved Livelihood for Sidr-Affected Rice Farmers
ISFM - Integrated Soil Fertility Management
KAED - Kyrgyz Agro-Input Enterprise Development
MIS - market information system
mt - metric tons
mmt - million metric tons
NGO - non-governmental organization
NWAFFD - North and West Africa Division
RDD - Research and Development Division
REC - regional economic community
SADC - Southern African Development Community
STAR - Strengthening Trade at the Regional Level in Agricultural Inputs in Africa
UDP - urea deep placement
USAID - U.S. Agency for International Development
VFRC - Virtual Fertilizer Research Center
WACIP - West Africa Cotton Improvement Program

2009-2010 Highlights

- Donor funding increased by \$8.3 million (a 23 percent increase), illustrating IFDC's value to the global agricultural development effort.
- Projects were begun in several additional nations – Cape Verde, Côte d'Ivoire, Gambia, Guinea, Guinea-Bissau, Liberia, Sierra Leone and Tajikistan.
- The Virtual Fertilizer Research Center (VFRC) began operations. The VFRC is a global research initiative to create the next generation of fertilizers and production technologies.
- The Internet site www.africafertilizer.org was launched. AfricaFertilizer.org is a global forum to disseminate and exchange information on fertilizers, soil fertility and the critical agricultural issues that face Africa.
- The new IFDC website (www.ifdc.org) was also launched. It provides a greater level of detail and information about the Center's programs and projects and those it serves.
- As part of the Phosphate Efficiency Initiative, a major study estimating the amount of world phosphate rock reserves and resources 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 one million smallholder farmers were trained in the use of proven agricultural technologies and better farming techniques.
- The From Thousands to Millions (1000s+) project is increasing agricultural productivity and economic growth for nearly one million farming families (involving about 10 million people) in seven West African nations – Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria and Togo.
- In the 1000s+ project area, average agricultural farm income has risen by 88 percent. In 2009, nearly 600,000 individuals in farm households (which include over 225,000 farmers) participated in 1000s+ agribusiness clusters.
- 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.
- WACIP trained over 730,000 cotton farmers in best agricultural practices. As a result, there were increased yields for seed cotton (17 percent), maize (18 percent) and cowpeas (31 percent).
- Since the inception of the Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST) project in Burundi, the Democratic Republic of Congo (DRC) and Rwanda, over 50 percent of farmers exposed to participatory tests have adopted one or more agricultural intensification technologies.
- In Rwanda, incomes of farmers who adopted Integrated Soil Fertility Management (ISFM) increased three-fold on average.
- Implementation of value chains allowed the CATALIST project to reach 110,000 farmers cultivating 27,000 ha of farmland.
- CATALIST's labor-intensive activities, centering on road-building and establishing woodlot and agro-forestry plots, generated over 250,000 man-days of employment for displaced persons, widows, former combatants and other stakeholders.
- The Economic Community of West African States (ECOWAS), which represents 15 nations, and the West African Economic and Monetary Union (UEMOA) jointly launched the five-year Marketing Inputs Regionally Plus (MIR Plus) project to facilitate the development of a regional agri-input market in West Africa. The project is being funded by the two organizations and the Netherlands Directorate-General for International Cooperation (DGIS) and is implemented by IFDC.

Additional information about each 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.

IFDC

Around the World



Countries With Current IFDC Projects

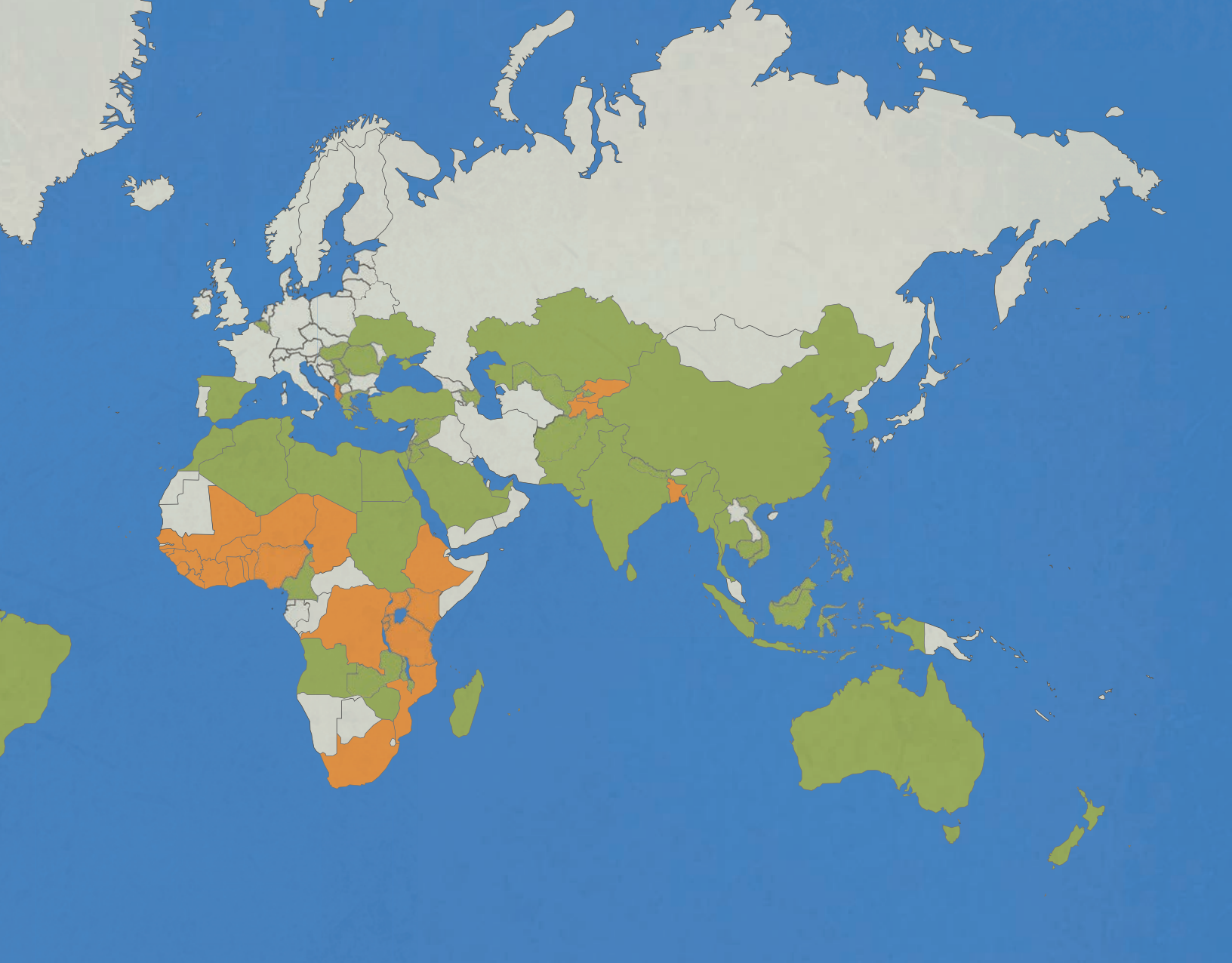
Albania
Bangladesh
Benin
Burkina Faso
Burundi
Cape Verde
Chad
Côte d'Ivoire
Democratic Republic of Congo
Ethiopia
Gambia
Ghana
Guinea
Guinea-Bissau

Guyana
Kenya
Kyrgyzstan
Liberia
Mali
Mozambique
Niger
Nigeria
Rwanda
Senegal
Sierra Leone
South Africa
Tajikistan
Tanzania
Togo
Uganda
United States

Countries With Previous Projects over IFDC's 35-Year History

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

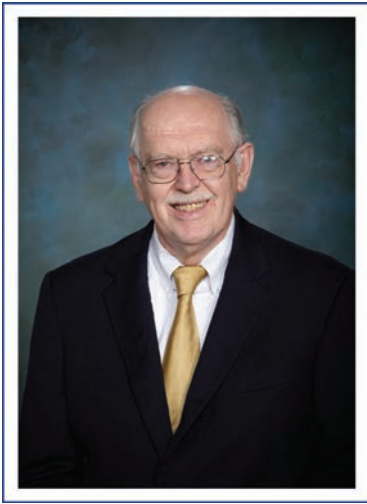


Kosovo
Libya
Madagascar
Malawi
Malaysia
Mexico
Morocco
Nepal
New Zealand
Pakistan
Paraguay
People's Republic of China
Peru
Philippines
Romania
Saudi Arabia
Singapore

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

Zambia
Zimbabwe

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



M. Peter McPherson
Chairman of the Board

For over 35 years, IFDC has helped improve food security and stimulate economic growth in many of the world's poorest countries by addressing both supply- and demand-side issues to increase agricultural sector performance. Agriculture remains the economic growth engine in much of Africa along with numerous countries in Latin America, Asia and the central Asian nations that were previously part of the former Soviet Union.

IFDC programs help develop competitive markets and expand trade because improved agricultural production systems and agribusiness development are inextricably linked. Therefore, IFDC programs address both agricultural input and output issues. In addition, broad-based stakeholder participation and training/technology transfer are priorities in all IFDC development initiatives.

The world's ability to feed its growing population is a looming and serious challenge, and solutions will be difficult to achieve. Moreover, the global energy/food/fertilizer crises of 2007-2008 echo those that had worldwide impact in the 1970s. A number of factors exacerbated these issues, including drought, rising energy and production costs, population growth, increased demand for bio-fuels, and ironically, income growth in China and India. Hitting developing nations hardest, the crises impacted those who must buy much of their food – both the urban poor and the poorest rural dwellers. The lingering global recession slowed these crises. However, since their underlying reasons did not disappear, the crises may reappear as the world economy slowly improves or as natural disasters strike.

The worldwide challenges of food security and poverty also received more attention. In 2000-2001, the United Nations identified eight Millennium Development Goals (MDGs) to spark global development. In particular, recent events emphasized MDG 1 ("Eradication of extreme hunger and poverty by 2015"). With the deadline less than five years away, few believe the goal will be reached. But collectively we must work toward hunger and poverty eradication, and if we do not reach the goal by 2015, perhaps it can be reached in the near future.

In a critically important development, world leaders and global organizations have agreed to coordinate their actions to achieve the MDGs and help the world's poorest people (most who live in rural areas). At their 2009 meeting, leaders of the G8 nations committed to reverse years of underinvestment in agricultural development and endorsed five key principles that were subsequently adopted at the Rome World Food Security Summit. Now known as the Rome Principles, they constitute the foundation for collective, global action.

As a result, agriculture has become the development priority it should be, given that it is the mainstay of the economies and employment in most developing countries. There is widespread agreement now that investments in agricultural development represent the most effective large-scale intervention to promote inclusive economic growth, alleviate hunger and reduce the vulnerability of small producers to external shocks.

Fertilizer is critical to the growth of agricultural productivity. But the soaring prices and energy demands of the recent past demonstrate that we can no longer rely on current products or on the energy-wasteful methods of fertilizer production and use.



Amit H. Roy
President and CEO

We must develop more efficient ways to provide vital nutrients to crops (and therefore to humans). We should also work to develop crops that use scarce resources more efficiently, are more profitable and help protect or even clean our environment.

Needs are especially great in Sub-Saharan Africa, where farmers continually clear more land and yet remain mired in subsistence agriculture, producing barely enough to feed their families. In general, their markets are unreliable and often unprofitable. Compared with the rest of the world, African farmers use relatively small amounts of fertilizers and improved seeds – and Africa’s soils are increasingly depleted of nutrients.

At the other extreme are intensive rice production systems in Asia, where excessive use of inputs, particularly fertilizer, causes pollution and reduces profitability – not only for farmers, but also for the governments that subsidize fertilizer. Further, these farmers are experiencing diminishing returns on their investments in applied inputs.

The world faces two great challenges in the quest to ensure food security and reduce poverty. First, agricultural production on existing low-intensity farmland must be increased through the adoption of high-yielding varieties of grains, an increase in the correct use of fertilizer and other inputs, better farm management and greater market access. Simultaneously, the world agricultural community must lead the effort to conserve the earth’s limited resources and minimize agricultural pollution.

The heightened global commitment to these issues creates additional opportunities for IFDC and other institutions to be vehicles for sustainable change. In this annual report, IFDC illustrates how it is helping to increase global food security, agricultural productivity, poverty alleviation and environmental protection.

We would like to take this opportunity to thank IFDC’s donors for their confidence in our organization. These donors provide IFDC the financial resources to help achieve our mutual objectives. Their generosity is deeply appreciated and never forgotten.

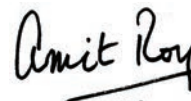
Also, we want to thank each member of the IFDC staff. The Center’s past and present success is a testimony to our staff’s ability to achieve results, often beyond expectations. In the years following its founding in 1974, most IFDC staff members were stationed at its headquarters in Muscle Shoals, Alabama, U.S.A. IFDC became more directly involved in development with the establishment in 1987 of the Africa Division in Togo and the Asia Division in Bangladesh. Simultaneously, IFDC programs began to focus on strengthening agri-input markets. Programs to improve output markets were included later when it was shown that unprofitable markets for farmers’ produce were often a barrier to greater input use.

We would also like to recognize those that IFDC has served and is currently serving. IFDC’s mission has remained unchanged: to increase sustainable agricultural productivity through the development and transfer of effective and environmentally sound plant nutrient technology and agricultural marketing expertise. After 35 years, IFDC looks back with pride at the work that has been done to date. Its staff has worked with millions of smallholder farmers around the world to improve their agricultural productivity and build their economic self-sufficiency.

More importantly, however, the Board of Directors and staff of IFDC look forward, dedicating the Center to programs and projects that will assist additional smallholder farmers increase their agricultural productivity, reduce hunger and poverty, help build strong and effective agricultural value chains and improve the environment.



M. Peter McPherson
Chairman, IFDC Board of Directors



Amit H. Roy
IFDC President and Chief Executive Officer

Introduction

Reflecting on the Past/Planning for the Future

IFDC Remains Committed to Creating Solutions for Sustainable Agriculture Development

IFDC began its 36th year of operations in October 2009. More than 35 years after its founding, IFDC still seeks to fulfill its original mandate of focusing on fertilizer issues to improve global food security. However, both its mandate and reach have expanded, as explained below.

IFDC is an outgrowth of the National Fertilizer Development Center (NFDC) of the Tennessee Valley Authority (TVA). In the early 1960s, a number of the U.S. government's key leaders recognized that NFDC's fertilizer knowledge and facilities were resources that could contribute to foreign assistance efforts in developing countries. As part of a federal agency, the most logical way for NFDC to contribute was through programs offered by the U.S. Agency for International Development (USAID).

NFDC not only furnished fertilizer information to USAID and its missions, but also sent technical assistance missions to developing countries. NFDC had a relatively small core staff, referred to as the International Fertilizer Development staff, dedicated to limited international assistance. NFDC became increasingly involved in agricultural development in developing countries.

Despite NFDC's accomplishments, TVA was very restricted in what it could do for, and in, developing countries. For example, TVA could not engage in research and development specifically for developing countries, and NFDC could perform work only through USAID or the U.S. Department of State. Thus, a definite need arose for an international center that could freely address the fertilizer technology needs of developing countries in the tropics and sub-tropics.

IFDC's Founding

In the early 1970s, there were worldwide food shortages. Oil prices increased rapidly as well, and energy shortages became commonplace. Because fertilizer production is energy-intensive, there were dramatic fertilizer price hikes, as well as product shortages. The combination of these factors put the developing countries at a distinct disadvantage. It was in this period of parallel crises that IFDC was founded.

To address the global food and fertilizer crises, the Food and Agriculture Organization of the United Nations (FAO) proposed that a World Food Conference be held in Rome, Italy, in November 1974. During conference preparations, the United States, in concert with the Consultative Group on International Agricultural Research, decided to offer developed world "know-how" in fertilizers and soil fertility to an international fertilizer research and development effort to benefit the developing world.

In an address to the United Nations General Assembly on April 15, 1974, U.S. Secretary of State Dr. Henry Kissinger pledged the availability of U.S. fertilizer technology and strong material support toward "the establishment of an international action on two specific areas of research: improving the effectiveness of chemical fertilizers, especially in tropical agriculture, and new methods to produce fertilizers from non-petroleum resources."

In the wake of Dr. Kissinger's pledge, the International Fertilizer Development Center – IFDC – was created on October 8, 1974, as a center of excellence with expertise in fertilizers to service the needs of developing countries. TVA transferred the "core" of NFDC to IFDC. First established as a private, nonprofit corporation under the laws of the State of Alabama, IFDC began to qualify for the designation of a "public international organization" with all the privileges and immunities inherent to this designation.

The designation as a public international organization was granted in March 1977 by President Carter, under Presidential Decree 11977. Under U.S. law, this designation allowed IFDC to receive the widespread support, cooperation and backing of the world community for which it was created. As a result, the Center became truly international in composition, financing and operation. This designation has contributed to IFDC's ongoing success. IFDC became the world's premier, science-based nonprofit organization with the mandate to address the integrated

soil nutrient management needs associated with moving toward a sustainable global food system. The organization's initial purpose was to help developing countries solve food-deficit problems by focusing on the development of fertilizers and fertilizer practices to meet the special needs of tropical and sub-tropical climates and soils.

An Expanding Mandate to Meet Global Needs

Since its founding, IFDC's mandate has expanded to include countries in transition from centrally planned to market-oriented economies. IFDC has also evolved into a multi-faceted organization with a much broader focus. The Center addresses critical, global issues such as food security, the alleviation of hunger and poverty, environmental protection and the promotion of economic development and self-sufficiency. The common factor these issues share is the important role that fertilizer plays in each.

Collaborative partnerships combine cutting-edge research and development with training and education. IFDC promotes sustainable agricultural production through the development and transfer of agricultural cultivation techniques and marketing expertise. The organization trains small-scale farmers in the efficient use and environmentally sound management of crop nutrients in conjunction with other agricultural inputs and natural resources.

IFDC's international, multidisciplinary staff and physical facilities are uniquely suited for conducting a broad range of research and development activities to support the development of a sustainable global food system. The Center has specialized research laboratories, greenhouses, growth chambers, laboratory research instruments, bench-scale and pilot-plant units, training facilities, a technical library and scientific information services.

The Challenge Remains

For over 35 years, IFDC has helped increase sustainable food productivity in nearly 100 nations. It has also contributed to the development of institutional capacity-building through training, primarily as part of its long-term agricultural development projects. IFDC staff members currently are serving in nearly 30 nations in Africa, Eurasia and Latin America.

The FAO estimates that there are over one billion starving people worldwide. Moreover, the global population is increasing by 75-80 million people every year. As Dr. Amit H. Roy, IFDC president and CEO, stated in a recent speech, "We face a daunting task – grow more food on less land with changing growing seasons. Simply put, we must not waste anything, and produce more food while using fewer resources."



Update

Progress on IFDC's Special Initiatives

As part of its Board-approved Five-Year Strategy (2009-2013), IFDC began three special initiatives. Progress on those initiatives includes:

Africa Productivity Initiative

Background: Yields of grains and other staple crops in Sub-Saharan Africa are only about 25 percent of the world average. An African Green Revolution, spearheaded by greater fertilizer use and improved seeds and based on good crop management, is urgently needed. In 2006, the African Union Special Summit of the Heads of State and Government adopted the 12-resolution *Abuja Declaration on Fertilizer for an African Green Revolution* at the Africa Fertilizer Summit, held in Abuja, Nigeria, and implemented by IFDC. IFDC's Africa Productivity Initiative captures the essence of the *Abuja Declaration*. IFDC continues to increase its focus on productivity in field-level projects across Africa to generate greater food security and income growth.



Objective: To double crop yields of assisted farmers.

Results to date: Due to decades of soil nutrient mining, Africa's soils have become the poorest in the world. It is estimated that the continent of Africa loses the

equivalent of more than \$4 billion worth of soil nutrients each year, severely eroding its ability to feed itself. No region of the world has been able to expand its agricultural growth rates, and thus tackle hunger, without increasing fertilizer use.

The following are examples of IFDC's projects in Africa that highlight the productivity improvements being accomplished on the continent.

CATALIST

In September 2006, the CATALIST project, funded by the Royal Embassy of the Netherlands, was awarded to IFDC. The five-year project is reinforcing peace and environmental stability by mobilizing local resources while helping farming communities increase agricultural production in Central Africa's Great Lakes Region. Project activities are centered on Burundi, the DRC and Rwanda.

CATALIST staff members stress sustainable agricultural intensification methodologies and commodity value chain development while also helping generate labor-intensive infrastructure improvements such as road-building and agro-forestry. These combined efforts develop accessible and profitable markets for agricultural inputs and crop outputs. The project is generating employment and is helping farmers increase agricultural production and incomes in an area where food security is virtually unknown.

During the last year, the following was accomplished by the CATALIST project:

The promotion and introduction of more intensive, remunerative and sustainable production systems are accelerating. An intensive public awareness campaign about the importance of ISFM to sustainable agriculture intensification was launched. A particular target was the DRC, where misinformation regarding the effects of fertilizer on human and soil health was widespread when the project began. In Rwanda, the income of farmers who adopted ISFM technology increased three-fold on average.

Participatory on-farm trials, involving over 2,300 farmers, were begun to validate and improve current fertilizer recommendations for selected agro-climatic zones. Trials also were initiated to identify intermediate

mechanization options that could ease the farm labor shortage, particularly in areas where most farming activities are carried out by women.

UDP technology, which has shown outstanding results in Bangladesh for more than 20 years, was introduced. Thirty demonstration trials were established to promote the use of UDP in lowland rice production in the area encompassing the common borders of Burundi, Rwanda and the South Kivu province of DRC.

Collaborative trials were also initiated with Vietnamese researchers to identify suitable rice varieties for the region's cooler mountain areas. Harvests from UDP trials in Rwanda resulted in an average yield of 6.1 metric tons (mt) per hectare for the UDP treatment compared to 5.4 mt/ha using traditional methods.

Since CATALIST's inception, over 50 percent of farmers exposed to participatory tests adopted one or more of IFDC's agricultural intensification technologies. In Burundi, results indicate that almost 3,000 farmers adopted fertilizer use and one or more soil fertility technologies during the 2010-A season based on previous participatory trials.

At current market prices and yields, increased fertilizer use on potatoes, maize, rice and beans continues to be profitable in Rwanda. In Burundi and DRC, fertilizer use is profitable for potatoes, beans and rice. In addition to the participatory tests and promotion of ISFM, activities were undertaken to improve the efficiencies of other agricultural intensification technologies, which result in an increase in financial benefits.

Three agronomic activities received attention during the reporting period: a detailed assessment and action plan were completed to introduce intermediate mechanization technologies to support intensification; a workshop focused on the production of a regional fertilizer manual; and another workshop created interest among research institutes to identify and multiply efficient rice varieties for the various ecological zones, with an emphasis on the cooler mountain regions.

Value chain development is the approach for input and output market development, intensification technologies and solving credit and policy impediments. Activities associated with the implementation of 44 value chains began, including 279 demonstration trials. The value chains helped reach 110,000 farmers cultivating approximately 27,000 ha.

Value chain development accelerated with the training of more than 2,000 representatives of value chain-facilitating structures on subjects such as ISFM, inventory credit/warehouse receipts systems, crop profitability, credit access, post-harvest strategies and cooperative/

organizational management. In addition, ISFM "training of trainers" was completed. These trainers will teach thousands of farmers in coming months.



Nearly 70 associations and cooperatives with more than 3,000 members were trained in the establishment, management and rules governing cooperatives. In addition, training was provided to more than 1,000 agri-input retailers and dealers (approximately 25 percent were women), creating opportunities for further input market development.

An increase in agri-input trade occurred in all target areas. Significant increases occurred in Rwanda due to the government's fertilizer policy under the Ministry of Agriculture and Animal Resources' Crop Intensification Program (CIP). Since early 2008, CATALIST has worked closely with CIP to procure and distribute fertilizers.

Between 2006 and 2009, fertilizer inputs have increased from 18,500 mt to 39,500 mt, enough to fertilize crops on more than 200,000 ha annually. Assistance was provided to the federal government of Rwanda to negotiate fertilizer purchase prices, resulting in over \$2 million in savings for the government.

Fertilizer use has also increased in the Kivu areas of DRC. In the 2010-A season, CATALIST partners imported 32 mt of fertilizers, roughly a 10-fold increase since the project began. This is a significant milestone, because the DRC has the highest intensification potential. This is due to the DRC's large population, high urbanization rate, importation

of more than one million mt of food per year and revenue sources beyond agriculture (e.g., mining and forestry).

Private sector players are beginning to recognize and exploit these opportunities. In Burundi, fertilizer use increased from 6,300 mt in 2006 to 8,500 mt in 2010, due in part to the impact of the various partners' participatory tests and demonstration trials that promoted ISFM-based agriculture intensification. Out-scaling activities, ISFM training of trainers from the Ministry of Agriculture and large rural development projects were also contributing factors.



CATALIST organized the Second Regional Fertilizer Conference in July 2009 with 74 participants from six countries taking part. This is the first step in establishing a regional fertilizer association, a key to professionalizing the agri-input dealers.

Output market development activities included: operators of the Soyco soybean mill in Rwanda were linked to producer cooperatives in DRC and Tanzania and to soybean value chains in Rwanda; and CATALIST efforts to identify markets for increased crop yields were successful with the Bralima brewery, which agreed to purchase rice from the "Ruzizi Without Borders" cropping project.

Improving conditions for agricultural intensification is the third strategic objective of CATALIST. Improving conditions involves facilitation and direct action; much of the work is done through direct and indirect policy advocacy. Labor-intensive activities, centered on road-building and establishing woodlot and agro-forestry plots, generated over 250,000 man-days of employment and injected over \$335,000 in laborers' salaries into local economies. Employment was created for displaced

persons, widows, former combatants and other stakeholders who desperately need jobs and incomes.

Positive effects of road development are visible east of Butembo, where more than 800 square kilometers have been opened for intensive agriculture. Finally, sites totaling over 1,000 ha were identified for agro-forestry plots and woodlots in 2010.

CATALIST is concentrating its gender-related activities in collaboration with and in support of LOFEPACO, a women-led producer organization in North Kivu. CATALIST assisted LOFEPACO to create development and management plans for its land, which is linked to a training center for women farmers. The plan will be grafted onto the current curriculum, so that trainees will receive practical on-farm education as part of their training.

CATALIST is partnering with LOFEPACO to introduce intermediate mechanization in North Kivu, and is providing financial support for the training of women farm leaders. CATALIST is also promoting a permanent training center in Kivu for trainers of women farmers.

Work on land tenure issues continues to focus on Kivu, where CATALIST staff believe impact opportunities are best. Action pursuing the adoption of a national agricultural policy, the "Code Agricole," continued. Consequently, CATALIST helped the DRC Ministry of Agriculture answer numerous questions from Parliament regarding agricultural intensification and policy.

Policy advocacy is ongoing at national and regional levels, including direct and indirect advocacy through donors and support to farmers' organizations, private sector associations and enterprises, etc. This has resulted in additional support for input market development in Rwanda. The Alliance for a Green Revolution in Africa (AGRA) and USAID will support the Rwandan government in its "input market support exit strategy" through new IFDC projects.

CATALIST is collaborating with USAID's COMPETE project to develop a market information system (MIS) for Burundi, DRC and Rwanda. Also, a Memorandum of Understanding was signed with the Economic Community of Countries of the Great Lakes to promote and support agricultural intensification and trade. Finally, meetings were held with agri-input suppliers regarding sales in Rwanda and Burundi (which would also serve the Congolese section of the Ruzizi Plain).

The report "Solving Agricultural Problems Related to Soil Acidity in Central Africa's Great Lakes Region" was published by CATALIST and disseminated in English and French. In addition, a manual for crop/livestock integration was drafted.

1000s+

Smallholder farmers in West Africa commonly lack profitable markets for their crops and have limited access to agricultural inputs. They also lack the basic advisory and support services needed to increase the productivity and profitability of their farming.

The 1000s+ project is increasing agricultural productivity and economic growth for nearly one million farming families (involving about 10 million people) in seven nations – Benin, Burkina Faso, Ghana, Mali, Niger, Nigeria and Togo.

“A cluster is a group of local individuals and organizations within a geographic area that have sustainable agribusiness linkages and work together toward producing, processing and supplying a specific market segment.”

- Wim van Campen, 1000s+ project leader

These objectives are being achieved by stimulating trade, developing input and output markets and improving soil fertility.

1000s+ is the main component of the Strategic Alliance for Agricultural Development in Africa (SAADA) grant from DGIS, which began in March 2006 and runs through 2010. 1000s+ is sponsored by DGIS and IFDC.

As the implementing partner, IFDC has organized a strategic alliance of international non-governmental organizations (NGOs) to facilitate regional, national and multi-national agricultural intensification/agribusiness programs.

1000s+ is a farmer-led initiative. In each project country, farmer organizations select agribusiness clusters and value chains to assist. Local farmer organizations are also key drivers in agribusiness cluster formation.

IFDC also works closely with the Network of Farmers' Organizations and Agricultural Producers of West Africa (ROPFA), a key regional producer organization, to implement activities and to ensure the farmer-led approach.

Activities are implemented through sub-grants to more than 100 business development services that support cluster formation and value chain development. Over 270 sub-grants were awarded in 2009. 1000s+ links farmers to markets by expanding IFDC's Competitive Agricultural Systems and Enterprises (CASE) approach, promoting agribusiness cluster formation, commodity chain development and creating/strengthening an enabling agricultural trade environment utilizing public and private institutions.



“A cluster is a group of local individuals and organizations within a geographic area that have sustainable agribusiness linkages and work together toward producing, processing and supplying a specific market segment,” explained Wim van Campen, 1000s+ project leader.

Agribusiness clusters are comprised of those needed to develop profitable value chains, including input suppliers, farmers/producers and their organizations, traders, processors, bankers, micro-finance institutions and business support services.

Effective clusters increase productivity, income and/or access to credit, help reduce transaction costs and improve competitiveness along agricultural value chains.

Clusters also support the development of farmer associations/organizations and strengthen their technical, financial, marketing and managerial skills.

The number of agribusiness clusters increased from 30 in 2006, to 64 in 2007, 128 in 2008 and 216 in 2009. Clusters

focus on different commodities, from maize, rice and soybean, to ruminants, chili peppers and shea butter.

By the end of 2009, nearly 4,000 entrepreneurs were involved in the clusters, along with over 6,500 producer organizations (of which 1,700 were women's organizations). Because of the project, over 1.13 million additional mt in cereal equivalents have been produced.



The project staff assists business support services to design and implement specific training programs. In 2008, over 370 training programs with ROPPA, other producer groups and local entrepreneurs were held. More than 31,000 participants attended these events (including 12,000 women), which included 24 study tours, 14 field days and 17 exchange visits. Also, large-scale training and networking programs for input dealers and cooperatives took place in Burkina Faso, Ghana, Mali and Niger.

Fostering collaboration is a key component of 1000s+. It organized over 80 workshops to enable local cluster and other value chain actors to meet, discuss anticipated demand and supply and negotiate informal contracts and partnerships.

In 2009, nearly 600,000 individuals in farm households (including over 225,000 farmers) participated in agribusiness clusters. Yields of crop and animal products monitored on 25 sampled farms per cluster increased by 84 percent above project expectations.

As a result, average agricultural farm income has risen by 88 percent (compared with the expected 30 percent increment by end of project). Farmer and producer organizations and local entrepreneurs also receive project

support to develop business plans and formulate loan applications. 1000s+ encourages financial intermediation to help secure access to credit; IFDC leveraged credit from the Banque Régionale de Solidarité, allowing producers in Burkina Faso and Togo to procure inputs.

ISFM is a key component of 1000s+. This IFDC approach improves soil fertility through the combined use of mineral fertilizers and organic fertilizers, and other soil- and yield-enhancing practices such as crop residues, composts and green manures. The use of improved seeds and fertilizer in areas served by 1000s+ has increased by 172 percent.

Because of 1000s+ success, efforts now include similar activities in key East and southern African countries. Specialized socio-agricultural programs have been designed and are being implemented in select countries across the continent. These holistic programs aim to address issues such as gender equality, school food programs, conflict prevention and resource conservation – issues common to almost every IFDC project in Africa.

WACIP

The West Africa Cotton Improvement Program (WACIP) was initiated to improve the competitiveness on world markets of cotton produced in Benin, Burkina Faso, Chad and Mali – collectively known as the Cotton-4 (C-4) countries – with selected activities also located in Senegal. The project was launched on December 1, 2006, and ends September 30, 2010.

IFDC leads a consortium implementing the \$19.6 million cooperative agreement awarded by USAID. IFDC's U.S.-based partners are Abt Associates Inc., Aid to Artisans and Auburn, Michigan State and Tuskegee universities. Over 30 cotton-related institutes, organizations and firms in Africa have implemented key activities through a grants program.

WACIP's primary objective is to increase the incomes of:

- Cotton farmers, by increasing the productivity of their cotton and non-cotton crops through increased yields and improved efficiency of agri-input use.
- Cotton processors – ginners, artisans and textile companies – by improving the quantity, variety and quality of cotton products.

To meet this objective, WACIP undertakes a range of interventions under three broad themes: policy and institutional reform, value addition and cotton productivity. Cross-cutting issues of gender, vulnerable populations and environmental management are integrated into interventions under these themes.

Highlights of Results

WACIP has had impressive results during the course of the project. Among the results are:

- **Effective management** of a high-profile, politically sensitive agricultural program, including:
 - Successful management of \$6.7 million disbursed in 39 grants to local African partners.
 - Establishment of a national advisory committee in each C-4 country, with members representing government, the cotton trade associations (called inter-professional associations), producer groups, cotton companies, research institutes, input suppliers, textile and artisan groups and NGOs.
 - Rigorous monitoring, evaluation and reporting of results.
- **Capacity Strengthening in Agricultural Research and Extension**
 - Strengthened the C-4 national agricultural research institutes to generate and share new technologies. With WACIP funding, local scientists: 1) conducted regionally coordinated cotton research; 2) transferred that research into large-scale extension activities; and 3) contributed to an online library of cotton-related documents with the Institut du Sahel (INSAH). Following careful inventories of existing laboratories and research libraries, WACIP worked through INSAH to provide the four national institutes Internet connectivity, computer hardware and software, stable supplies of electricity and key laboratory equipment.
 - Strengthened the C-4 agricultural extension services by: 1) developing/updating materials used to train extension agents and farmers; 2) purchasing global positioning systems (GPS); and 3) training over 1,100 extension agents in integrated pest management, ISFM, environmental risk mitigation, installation/management of demonstration fields and GPS use for better crop estimates. For example, in Chad, emphasis was put on developing forms, databases, software and procedures to allow the national extension service to publish more reliable agricultural production statistics.
- **Increased Agricultural Productivity:** WACIP supported wide-scale trainings of over 730,000 cotton farmers across the region in best agricultural practices for cotton, maize and cowpeas, using a combination of classroom and hands-on methods, including farmer visits to one of the nearly 1,000 WACIP demonstration plots across the region. After two years, WACIP contributed to measurable gains in agricultural productivity for nearly 76,000 WACIP-supported farms (over 670,000 cotton farmers), relative to the baseline in terms of:
 - Increased yields for seed cotton (17 percent), maize (18 percent) and cowpeas (31 percent).
 - Increased gross margins (returns) per ha for seed cotton (43 percent), maize (7 percent) and cowpeas (153 percent).
 - Increased net revenues to nearly \$65 million (a 43 percent increase over baseline).
- **Better Management of Agricultural Inputs:** To avoid the loss of cotton input credit, which serves as a lifeline to all agriculture in the C-4, WACIP supported wide-scale trainings of over 17,800 managers of village cooperatives in Benin, Burkina Faso and Mali in: estimating input needs; handling the associated credit; and mastering the distribution, cost recovery and safe handling of stocks.
- **More Profitable Ginning:** WACIP ran a multi-year ginning program, which involved a diagnostic, a one-week regional ginner training program, and subsequent investments in humidification, better financial management systems and integrated information management systems at two competitively selected gins (Sodefitex in Senegal and ICA in Benin).



As a result, the two target gins experienced:

- A revenue gain of \$70+ per mt of cotton lint.
 - Profits of \$580,000 in 2009-2010.
 - Profits of \$6.5 million when assessed at net present value over 10 years.
- **Textiles:** WACIP worked with a small group of export-ready artisans in each country to: 1) train them in business management, export marketing and environmental risk mitigation; 2) develop new

products; and 3) introduce those products at a number of high-profile regional and international handicraft fairs. As a result, WACIP-supported artisans earned nearly \$800,000 in sales, including more than \$220,000 from the New York International Gift Fair and other international markets, more than \$295,000 from Salon International de l'Artisanat de Ouagadougou (International Crafts Show of Ouagadougou) and other regional events and \$268,000 in domestic sales. They also created and sold more than 700 new cotton-based products.

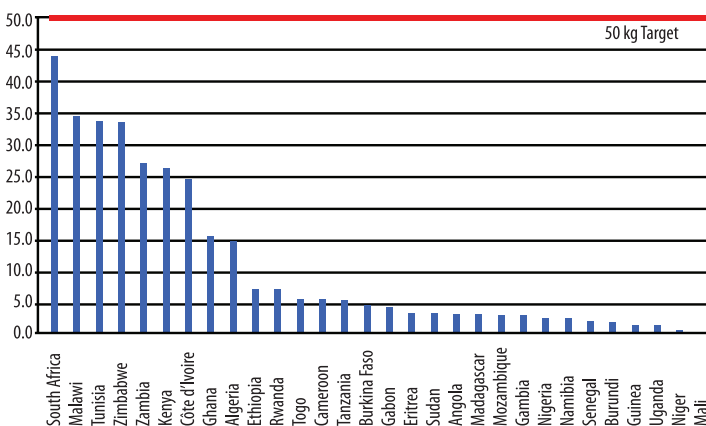
- **Contributing to Food Security:** Using calculations drawn from local surveys, WACIP estimates that the project has benefited over 560,000 rural households and over 290,000 impoverished households vulnerable to food insecurity.

Regional Economic Communities

In addition to the progress of key IFDC projects reported above, various African regional economic communities (RECs) have made progress as well:

In Resolution 1 of the *Abuja Declaration*, African Union member states resolved to increase fertilizer use from 8.0 kilograms per hectare (kg/ha) to 50.0 kg/ha by 2015. The chart below shows progress through 2007.

2007 Fertilizer Use in Africa (by Country)



Although no country in Sub-Saharan Africa achieved Resolution 1, there are signs of improvement in implementation by the RECs. For example:

Within the East African Community (EAC):

- There are no external duties or border taxes on fertilizers imported into the region.
- IFDC's Strengthening Trade at the Regional Level in Agricultural Inputs in Africa (STAR) project was launched in the EAC in February 2009. STAR is strengthening African national and regional trade in agricultural inputs through an improved policy and regulatory environment and capacity building.

- A workshop on "Strengthening Market Linkages in Input Supply" was convened by the EAC in Nairobi.
- A comparative review of fertilizer policy and legal and regulatory frameworks was undertaken.
- Three agri-input working groups have been established to harmonize policies, regulations and standards for agricultural inputs in the region in order to facilitate trade.
- A concept note has been submitted to the African Development Bank regarding a feasibility study for fertilizer production in the region.

The Common Market for Eastern and Southern Africa (COMESA) has taken a number of critical fertilizer-related actions, including:

- IFDC's STAR project was launched in COMESA in November 2007. A workshop targeting importers and manufacturers, "Strengthening Market Linkages in Input Supply," was held in Arusha, Tanzania.
- A Memorandum of Understanding was signed with FAO in March 2009. COMESA has commissioned a review of fertilizer regulations in the region, funded by FAO.
- The East and Southern African Regional Consultative Meeting on the Establishment of the African Regional Fertilizer Procurement Facility was held in March 2009. It was agreed that a pilot project would be launched (with assistance from the African Development Bank) in Rwanda, Tanzania and Uganda.
- Zero-rate import tariffs on fertilizers and raw materials were adopted at the COMESA Heads of State Summit in May 2009 (as an integral part of the COMESA Customs Union).
- A policy workshop and a seminar were organized and held in Zambia in June 2009 on challenges and opportunities offered by the Regional Joint Procurement of Fertilizers.
- COMESA is preparing a Regional Fertilizer Strategy. A regional fertilizer conference on fertilizer policies was held in July 2009. COMESA is also conducting a study on regional fertilizer production.
- The COMESA Regional Agro-Inputs Program (COMRAP) has been established, focusing on: (1) improved financial services; (2) strengthening agro-dealers' networks to improve the supply of agri-inputs to smallholder farmers; and (3) harmonization of seed regulations and standards.

Nitrogen Efficiency Initiative and Phosphate Efficiency Initiative

There are three primary nutrients needed for plant growth – nitrogen, phosphorus and potassium – and fertilizers deliver one or more of these nutrients.

Nitrogen for use in fertilizer is manufactured by combining nitrogen from the atmosphere with hydrogen manufactured from natural gas. Almost all phosphorus is obtained from phosphate rock, and there is an ongoing debate regarding how large the remaining global phosphate deposits are. While it is a non-renewable resource, there are hundreds of years of potash reserves (the source of potassium).

At national and international levels, fertilizer has been a commoditized product for decades. Because of its status as a commodity, research and development activities to develop new and improved fertilizer have been minimal since the primary TVA research ended. (Most of the fertilizer products used worldwide today were originally developed by TVA.)

Much of the research done to date by IFDC's Nitrogen Efficiency Initiative and Phosphate Efficiency Initiative will have an impact on the work of IFDC's VFRC. At its first meeting, the VFRC Board of Advisors discussed disruptive innovation and disruptive technology.

These are terms used to describe a new, low-cost, often simpler technology that displaces an existing technology; or innovations that improve a product or service in ways that the market does not expect, typically by being lower priced or designed for a different set of consumers. Disruptive technology can also be a new technology that radically transforms markets, creates new markets or destroys existing markets for other technologies. Disruptive technologies generally do not come from within an industry.

The VFRC is seeking disruptive innovation or technology options that will improve the efficiency and effectiveness of fertilizer production and the ability of fertilizers to deliver nutrients. IFDC's development of urea supergranules (or briquettes) for urea deep placement and the machines to manufacture the briquettes are examples of disruptive innovation and technology.

Nitrogen Efficiency Initiative

Background: Nitrogen use efficiency (NUE) is as low as 30 percent, particularly in lowland rice, a crop crucial to feeding growing urban populations in developing nations. Therefore, as much as 70 percent of the nitrogen fertilizer applied to crops is unused. Low NUE stems from both outdated fertilizer products and inappropriate application methods. In the short-term, improving

application methods will reduce the amount of unused fertilizer, improve the profitability of smallholder farmer agriculture and decrease nitrogen pollution into water and the atmosphere.

Objective: To increase the efficiency of nitrogen use to at least 45 percent for assisted farmers in developing countries, thus increasing profits while reducing pollution.

Results to date: IFDC continues to conduct ongoing research to increase nitrogen use efficiency, as well as to develop methods to lower the costs of producing and using nitrogen fertilizers. Among the various research projects that IFDC is either conducting or monitoring closely are:



Biologically Fixed Nitrogen – It is estimated that about 82 million metric tons (mmt) of biologically fixed nitrogen (i.e., created by natural means) are produced annually. Most of this nitrogen is produced through bacterial processes by legumes that are grown for food or as “green cropping” (plowed into the soil to add organic matter and nutrients). Nodules on legume roots are “mini-ammonia production facilities” that “fix” nitrogen, taking nitrogen from the air and converting it into a form that plants can use (ammonium and subsequent forms). In addition, a few other plants and green algae in the ocean produce nitrogen.

For more than 40 years, researchers have attempted without success to replicate the nitrogen fixation process in non-legumes. Research continues, but no breakthrough has yet been achieved.

Improvements to the Haber-Bosch Process – This process – the key to manufacturing nitrogen that can be further processed into fertilizers – has been in use for 100 years, and over that time there have been numerous efficiency improvements. However, Haber-Bosch still must operate at extremely high pressures and temperatures (3,000 to 4,000 pounds per square inch, and 500°C) and the process consumes large quantities of energy.

Research to develop breakthrough technologies to lower the amount of energy, temperature and/or pressure required in the Haber-Bosch process continues. For example, at Cornell University, the Massachusetts Institute of Technology and the University of Lyon in France, research is being conducted using alternate

IFDC and partner organizations have spread deep placement technology to hundreds of thousands of rice farmers in Bangladesh, Cambodia, Nepal and Vietnam. In Bangladesh, UDP has increased yields in lowland rice by at least 20 percent while decreasing the need for urea by about 40 percent and reducing the fertilizer's environmental impact. The technology is also increasing the incomes of smallholder farmers who are using it and decreasing the amount of money the government spends to buy and subsidize fertilizer.

UDP/FDP technology is being replicated and scaled-up to benefit many more resource-poor farmers in Asia. For example, in Cambodia, farmers prefer supergranules that combine nitrogen, phosphorus and potassium because of specific soil needs.

In addition, field trials of UDP and FDP are currently taking place in several African nations and in Guyana in South America. In the recent past, IFDC also conducted research trials on FDP in Afghanistan. Additional research is being conducted to develop a low-cost applicator to reduce the labor currently required for FDP/UDP. Field trials of several applicator models are currently underway.

Enhanced-Efficiency Fertilizers (EEFs) – According to the Association of American Plant Food Control Officials, “enhanced efficiency” is a term describing a range of fertilizer products with characteristics that allow increased plant uptake and reduce the potential of nutrient losses to the environment such as gaseous losses, leaching or runoff, as compared to an appropriate reference product. This definition allows for the inclusion of slow-release fertilizer products, controlled-release fertilizer products and inhibited fertilizer products in the category. At this time, however, EEFs are cost-prohibitive for commodity agriculture.

Nitrogen Loss Mechanisms – Nitrogen that is not absorbed by a plant or “stored” in the soil can volatilize into the atmosphere as ammonia, a precursor of smog. Nitrogen in the form of nitrate in the soil and/or groundwater can denitrify and be released to the atmosphere as nitrous oxide, a greenhouse gas that is considered to be 300 times more potent than carbon dioxide. Nitrogen that is not absorbed by a plant can also become water-borne runoff, which can pollute rivers, lakes and oceans. Because nitrogen fertilizers are highly soluble, research to reduce solubility has and is being conducted. Numerous methods have been employed to affect the solubility of nitrogen products.

Slow-Release Products (Reaction Products) – One method to reduce nitrogen solubility is to polymerize urea, making long chains of molecules that then require bacterial action and/or moisture to break down the polymer chains and release the urea. Polymerization slows the solubility process, and fertilizers produced using this



catalysis systems that operate at lower temperatures and pressures. If this research is successful and process temperatures and pressures are lowered, significant savings in the ammonia production process should be achieved through lower capital and operating costs. Research is also being conducted on electro-chemical means of producing ammonia at reduced temperatures and atmospheric pressure. Aristotle University in Greece and Kyoto University in Japan have led this research and it has shown substantial promise.

Fertilizer Deep Placement/Urea Deep Placement (FDP/UDP) – This innovative technology has been promoted by IFDC as an effective and efficient approach to managing fertilizer inputs, particularly for flooded rice in Asia. UDP involves the insertion of large (1.8 to 2.7 grams) urea supergranules into the rice root zone after transplanting. Nitrogen losses are significantly reduced with this technology compared with the conventional method of broadcasting fertilizer into the paddy water.

process are considered reaction products (they react to moisture).

Controlled-Release Fertilizers (CRFs) – CRFs are a class of enhanced-efficiency fertilizers that release mineral nutrients to the soil over an extended period of time because the release profile is controlled by a semi-permeable polymer coating. CRFs generally are manufactured through the application of a continuous coating of polymer on the outside of a urea granule. If a polymer-coated granule is on the soil surface or in the soil and moisture is present, the moisture will migrate through the polymer coating and begin to dissolve the urea into a nutrient solution.

Driven by soil temperature and concentration gradients, nitrogen will move through that coating. The higher the soil temperature and concentration gradient, the faster the nitrogen solution will travel through the polymer coating. These CRFs are a step closer to reaching the synchrony between what the plant needs and the availability of nutrient to the plant. Coated fertilizers are “smart” fertilizers and their release properties are driven mainly by moisture, concentration gradient and soil temperature. Breakthrough CRF technologies had their beginnings at TVA and/or IFDC.

Inhibitors – When urea is on the soil surface, the enzyme urease converts the urea into ammonium. If that reaction can be delayed until moisture is present to solubilize the urea into the soil solution, then more nitrogen is available to provide nutrition for the crop and less nitrogen volatilizes into the atmosphere as a greenhouse gas.

Current urease inhibitors (also known as stabilizers) will slow volatilization. Similarly, nitrification inhibitors will slow the conversion of urea from its ammonium form (which stays in the soil longer) to nitrate (which will move through soil and can leach into groundwater).

IFDC (and others) are conducting ongoing research on inhibitors and stabilizers. For example, less expensive methods to produce inhibitors may be found and/or research may lead to new inhibitors or more effective delivery systems.

Currently, existing EEF products have not proven cost-effective for widespread use in food crop production, particularly in less-developed countries. However, IFDC is combining UDP research and EEF research, providing the potential for inhibitor use in Africa and Asia. With a coated, compound fertilizer supergranule, there are opportunities to minimize solubility, which, in turn has a positive environmental impact by decreasing runoff, volatilization and nitrification.

The Nitrogen Efficiency Initiative is actively pursuing this potentially disruptive technology. Using a coated product, IFDC may be able to reduce the cost of the fertilizer so that it is cost-effective for smallholder farmers.

Integrated Soil Fertility Management (ISFM) – Through ISFM, IFDC has promoted adding organic matter into the soil (in combination with mineral fertilizers) to build soil tilth, the physical structure of soil as it influences plant growth. A soil with good tilth is porous, allowing water to infiltrate easily, and permitting roots to grow without obstruction. Such soil can more easily retain nutrients and moisture in the root zone. IFDC has promoted minimum and no-till practices, manure or compost addition and green cropping. Additional ISFM research seeks to deliver fertilizer in synchrony with plant uptake, minimizing the potential for nitrogen loss into the environment.



Micronutrients – IFDC and others are conducting research that seeks to improve human and plant nutrition. For example, there are areas around the world with significant deficiencies of zinc and boron micronutrients in the soil (and subsequently in human diets). By adding micronutrients to fertilizer products, plants and humans can receive a percentage of the nutrients they need.

Bio-Solids – Every municipality that processes its waste must deal with sewage sludge, and the issue will grow as populations increase. Developing a successful, cost-effective process to extract nutrients from the sludge helps reduce its environmental impact while returning needed nutrients to agricultural fields.

IFDC is researching the feasibility of capturing the nutrients in sludge through innovative processing methods. Issues to overcome include the odor, pathogen content and heavy metals found in the sludge. Also, because of the high moisture content (which adds weight),

it is not cost-effective to transport sludge more than a short distance. However, if the sludge can be dried on-site and the pathogen content decreased, there may be cost-effective opportunities to extract the nutrients.

Fertilizer Quality Control – This is a major concern for developing countries. For example, in West Africa, approximately 50 percent of fertilizer is adulterated. One reason for this is because most of the countries in that area do not have enforceable legislation to protect fertilizer users. IFDC is currently developing a low-cost field-level detection kit that can identify adulterated fertilizer using over-the-counter chemicals. Ultimately, the intention is to develop a solid-state electronic device that can detect adulteration in the field.

Over the last several years there has been intense speculation that world phosphate rock reserves are declining in amount and quality. Some sources even suggest that the world’s phosphate reserves will be almost depleted in this century.

For over 100 years, phosphate rock was a relatively low-cost, low-value bulk commodity. Historically, by comparison, foundry sand, coal and peat were all worth more per ton than phosphate rock. Sudden fertilizer price hikes occurred in 2008 and phosphate rock prices soared. While fertilizer prices have come down from their 2008 peaks, the cost of high-grade phosphate rock is currently over \$100 per mt – much higher than the \$20-\$50 per mt price of the preceding 25 years.

Fertilizer Usage – 2008-2009

	N	P ₂ O ₅	K ₂ O	Total
World	99.2	36.6	26.0	161.8
Developing Countries				
Latin America	6.3	4.8	5.5	16.6
Africa	3.4	1.0	0.5	4.9
Asia	62.1	22.2	12.8	97.1
Total Developing	71.8	28.0	18.8	118.6

Amounts in Million Metric Tons

Phosphate Resources and Research Initiative

Because of uncertainty regarding the amount of remaining global phosphate rock deposits, IFDC launched the multi-year Phosphate Resources and Research Initiative. The report “World Phosphate Rock Reserves and Resources,” by Steven J. Van Kauwenbergh, a principal scientist at IFDC, provides a current estimate of how much phosphate rock exists and should facilitate future compilation work on geological reserve and resource data. IFDC has released the report and it is available through the IFDC website. Some conclusions from that research are outlined below.

For the purposes of the study, IFDC established common definitions for:

- Reserves - the part of the reserve base which can be economically extracted or produced at the time of the determination.
- Resources - a concentration of naturally occurring phosphate material in such a form or amount that economic extraction of a product is currently or potentially feasible. Resources are divided into many categories.

Phosphate Efficiency Initiative

Background: Phosphate reserves are dwindling and conversion to the current suite of water-soluble products is expensive and inefficient. Improving the availability of phosphorus to crops from directly applied phosphate rock in diverse agro-climatic conditions and cropping systems is essential.

Objective: To make directly applied phosphate rock as effective as the more expensive water-soluble fertilizers.

Results to date: Almost all phosphate fertilizers are manufactured from phosphate rock, a non-renewable resource. Global phosphate rock production fluctuates based on demand; approximately 160 million metric tons (mmt) were produced in 2008, the most since 1989.

In 1971, the Institute of Ecology (IOE) in Chicago warned that the world was going to run out of phosphate in about 130 years. Subsequent studies indicated the IOE conclusions were incorrect. Since then, however, others have postulated that phosphorus (phosphate rock) production would peak between 2030 and 2040 and then decline, leading to a global depletion of reserves. Obviously, such an event would have serious implications for the world’s food supply and global food security.

In contrast to speculation that phosphate rock deposits are on the verge of depletion, IFDC research indicates phosphate rock of suitable quality to produce phosphoric acid is readily available. The IFDC study concludes that three to four times the amounts commonly quoted for world phosphate rock reserves exist, and that several

hundred years of world reserves and resources exist at current utilization rates.

To begin the study, Van Kauwenbergh undertook a preliminary literature search and study of this issue. Phosphate rock reserve and resource literature, past world reserve and resource estimates and the methodology of performing reserve and resource estimates were reviewed. Previous studies had reserves estimates ranging from 15,000 mmt to over 1,000,000 mmt. Estimates of phosphate rock resources ranged from 91,000 mmt to over 1,000,000 mmt.

Using the available literature, IFDC assessed the reserves of various countries in terms of reserves of concentrate. The IFDC estimate of worldwide phosphate rock reserves is approximately 60,000 mmt of concentrate.

IFDC-estimated world phosphate rock resources are approximately 290,000 mmt. This figure includes the unprocessed ore of the reserve estimates. If hypothetical estimates of phosphate rock resources are included, the total world phosphate rock resources may be as much as 460,000 mmt.

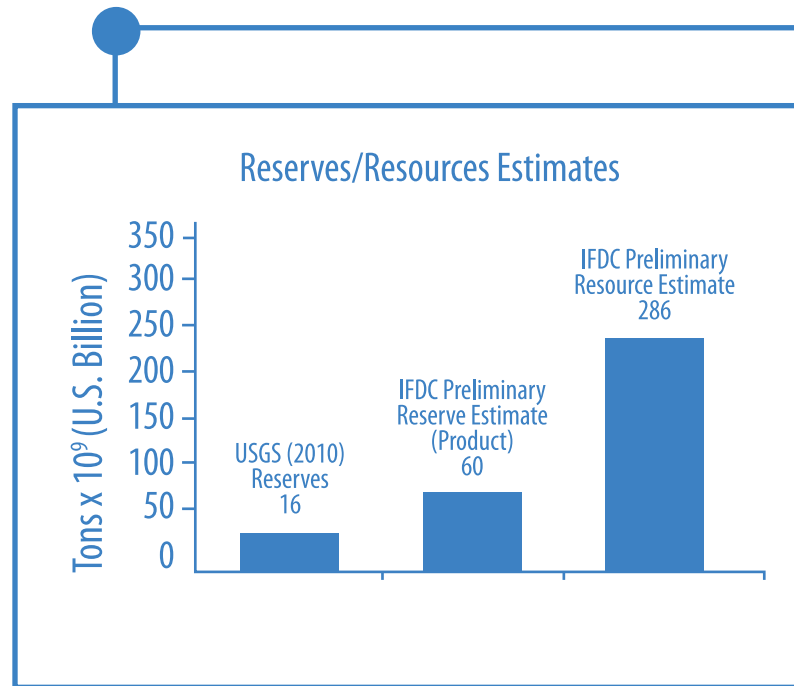
There is no indication that phosphate reserves will reach a terminal point in the near future and then decline (an event some have termed “peak phosphorus”). Again, IFDC research indicates adequate phosphate rock reserves and resources of suitable quality to produce phosphoric acid will be available well into the future.

However, “World Phosphate Rock Reserves and Resources” provides only a preliminary estimate of world reserves and resources. The report was neither a comprehensive nor definitive analysis.

Moreover, the world reserves of phosphate rock are not static. Rather, reserves are dynamic and are not established on an infinite planning horizon. Instead, reserves are only proven or established over a planning horizon based on the amount of concentrate needed for a number of years, as well as on production costs and current and anticipated future prices of phosphate rock. Also, producers do not document reserves they will not use for decades. A resource may be available as a reserve in the future, if production costs are low enough and if prices are high enough to generate an acceptable rate of profit.

The cost of phosphate rock is going to increase as lower-cost deposits are mined out and producers have to move more overburden, process lower grade ores, open new mines and employ increasingly expensive technology and additional raw materials and processing media (such as water) to produce concentrates.

When the price of phosphate concentrate increases, marginal deposits may become viable. New deposits will be opened. Depending on supply and price, new or alternative mining methods may be developed and/or new mines may be opened in challenging environments. While the bulk of phosphate rock is now mined on the surface, the utilization of underground methods may become attractive in many countries if the price of phosphate rock rises to a profitable level.



Over the past few decades, vertical integration of phosphate rock mining and processing has occurred at numerous sites. Because of supply, price and other factors, vertical integration of mining and processing may be necessary to compete in the world phosphate fertilizer market in the future.

Regardless of current or future prices, a definitive, worldwide study of phosphate rock reserves and resources is needed. While its estimate of remaining phosphate was incorrect, the IOE workshop may have been one of the events that led to the establishment of the International Geological Correlation Programme (IGCP) Project 156-Phosphorites in 1977, funded by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

For over 10 years, IGCP brought together a network of geologists from around the world that, through UNESCO, published significant information concerning worldwide phosphate rock resources. However, IGCP Project 156-Phosphorites ceased functioning about 20 years ago, and since that time there has been a general lack of new

and/or updated information regarding phosphate rock deposits, reserves and resources.

The IFDC report provides only a preliminary estimate of world reserves and resources. A combined, collaborative effort by phosphate rock producers, government agencies, international organizations and academia will be required to make a more detailed and accurate estimate. Therefore, IFDC is calling for the establishment of a multi-disciplinary network to regularly update a new and improved database by cataloging all phosphate deposits.



Tanzanian Phosphate Mine

There are numerous benefits to this course of action. Phosphorus is an essential element for both plants and humans. Its importance to world agriculture and food security is obvious. Therefore, information regarding the quantity and quality of phosphate rock deposits is of great value.

With the support and expertise of knowledgeable professionals in the phosphate rock and fertilizer industry, realistic estimates can be made. IFDC calls for a coordinated effort with the objective to explore world phosphate rock reserves and resources. In preparation for such an effort, the following suggestions and observations are offered:

- Common “reserve” and “resource” definitions should be used. Definitions should be as simple as possible.
- Reserve estimates should be made in terms of tons of recoverable phosphate rock concentrate.
- Reserve estimates should be based on mine development data or reasonable planning horizons.

- The term “reserve base” should be discontinued unless definitive production cost criteria can be developed.
- Resource estimates should include material of any P_2O_5 grade that could be processed/utilized.
- Phosphate producers, geologic surveys and/or mining departments in phosphate rock-producing countries should take an active role in producing realistic reserve and resource estimates.
- Phosphate rock producers and trade organizations also must be stakeholders in any phosphate initiatives that may influence government policy on a global basis.

Efficient Use of Phosphate Resources Is Critical

Issues related to current phosphate rock mining technology should be examined. For example, during phosphate rock mining, some phosphate beds are left in the ground because they contain higher levels of impurities or other compounds, and may be too difficult or expensive to process. In regard to the phosphate rock now being mined, a significant percentage of phosphate is typically lost during the beneficiation process (crushing and separating ore into valuable substances or waste by a variety of techniques).

What if cost-effective technologies could be developed to recover that unprocessed phosphate? Acidulation of unbeneficiated phosphate rock has the potential to significantly reduce total phosphate losses. Additional research should be conducted to determine if there are other processes in which phosphate could be directly extracted from unbeneficiated or minimally beneficiated phosphate rock without incurring heavy phosphate losses.

Currently, about 72 to 75 percent of phosphate rock produced is converted to phosphoric acid. Of that phosphoric acid, about 82 percent is used for fertilizer and 18 percent is used for industrial purposes.

Phospho-gypsum is a by-product created during the commercial manufacture of phosphoric acid by the wet process. For every ton of P_2O_5 phosphate fertilizer that is produced, five tons of gypsum are produced as a by-product. While some of the gypsum is used in the construction, cement and gardening industries, there is a growing, global issue of what to do with the excess gypsum. Research into alternate processing methods that do not produce gypsum, new uses for gypsum and recovery of sulfur from gypsum are needed to lessen its environmental impacts.

In the future, phosphate rock or associated deposits may become more important for many reasons other than providing a primary nutrient. Phosphate rock and associated deposits are often rich in several trace

elements important in the manufacturing of steel, computers and car batteries and the processing of fuel for nuclear energy.

Several issues surround phosphate that must be addressed. The IFDC report outlining global phosphate reserves and resources indicates that scarcity of phosphate is no longer a key issue.

However, cost is a key issue. Because of process inefficiencies, costs – of mining, processing, handling of phosphate-containing waste and the phosphate fertilizer available to the farmer – are directly impacted. The price of phosphate rock is rising, which means the price of phosphate fertilizers will increase. Therefore, cost is important, but it is not the only key issue. Environmental degradation is also a key issue. Mining and processing may leave environmental “scars,” and phosphate slime ponds and gypsum by-products also create environmental concerns. Excess phosphorus-based nutrients can leach into watersheds and the oceans. Decreasing the amount of phosphorus that reaches global water resources is critically important and must become an environmental priority.

However, the most pressing issue is thought to be efficiency – in both production and use. It is imperative that efficiency of use of phosphate across the value chain be improved.

When using traditional water-soluble fertilizers, only a portion of the phosphate applied is utilized by the crop in the given cropping year. By improving phosphate mining, processing and crop utilization efficiencies, the overall amount of phosphate rock and fertilizer needed may decrease, which will have major economic implications and may serve to also reduce environmental impacts.

Utilization efficiency ultimately may be the most important factor. IFDC considers improving the efficiency of phosphate use is vital to future world food security.

The Phosphate Efficiency Initiative is seeking new technologies to make phosphate fertilizer products more effective and efficient. Instead of losing large percentages of phosphate in processing, can we modify the phosphate rock and use it directly on crops?

IFDC is conducting promising experiments and trials that focus on the micro-grinding of phosphate rock to nano-size (less than 100 nanometers). This increases phosphate rock solubility, as determined by common solubility tests, and enhances its suitability for direct application – making it more reactive and available to plants.

Micro-grinding may eliminate some of the waste that occurs in phosphate rock processing. When phosphate rock is wet-ground to nano-particle size, it may develop a



consistency similar to toothpaste. A central location could be used to grind phosphate rock to nano-particle size and then the “paste” could be shipped to smaller production facilities which might then blend it with locally obtained phosphate rock for use by nearby farmers.

Most phosphate fertilizers are highly water-soluble and were developed for temperate agricultural conditions. Tropical cropping conditions may involve acidic soils. IFDC research has shown that crops such as canola can effectively achieve phosphorus uptake from direct application of phosphate rock even from very basic soils (soils with a pH level over 7). Water-insoluble but plant-available phosphate fertilizer may be entirely appropriate under these conditions.

Minimal processing of phosphates incurring minimal costs to produce water-insoluble, but effective plant-available phosphate for tropical and semi-tropical climates would reduce their cost and increase their effectiveness.

Another study with considerable potential focuses on greenhouse evaluations of phosphate fertilizers mixed with soil amendments in an attempt to reduce phosphate fixation.

There is no substitute for phosphorus in agriculture – or indeed in life. Therefore, IFDC will intensify and expand its phosphate research initiative. The Center will continue to seek to generate cost-effective and environmentally acceptable results for the world’s smallholder farmers from phosphate fertilizers.



Feature

Virtual Fertilizer Research Center

Nourish the Soil, Feed the World

In a 2008 letter to IFDC President and CEO Dr. Amit H. Roy, the late Dr. Norman Borlaug, 1970 Nobel Peace Prize Laureate and father of the Green Revolution, wrote, "The work of the Green Revolution is not yet finished and I believe it will take a new round of technological advancement, political commitment, commercial development and a lot of hard work to complete the job." He provided a road map for extending the Green Revolution and ensuring sustainable use of resources:

"We need to develop new products that will deliver just the nutrients that the growing plants require and to diminish environmental externalities. We need to invest in this sort of advanced fertilizer research and we need to coordinate it with advanced plant genetic research so that we can achieve synergy between more efficient use of available nutrients by plants and more efficient delivery of nutrients by fertilizer products. And we need to develop systems that can make these products cheaper and more accessible to farmers. We need to cut the cost of food production so that developing country farmers can produce affordable food to feed their growing urban populations."

IFDC accepted Dr. Borlaug's challenge and, in 2010, created the VFRC, a global research initiative focused 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 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 nutritious food with fewer wasted resources and a reduced environmental impact.

Unlike the efforts of the NFDC, which took place on a single campus in Muscle Shoals, Alabama, the VFRC will link researchers together virtually. With the Internet and

other communication technologies, scientists worldwide can collaborate on innovative fundamental and applied research. Virtual collaboration will also allow for fast-tracking of this urgent work.

Global Issues Require Global Solutions and Global Action

With severe population, economic and environmental issues facing it, the world cannot afford the current level of inefficiency in fertilizer production and use. Fertilizers are not cheap, and their production consumes non-renewable resources. And yet fertilizers are critical to improving the world's food security.

Soil fertility rapidly declines when land is used for agricultural production. Nutrients extracted from the soil are restored by fertilizers, which also stabilize and increase crop yields.

It is estimated that nearly 40 percent of the food consumed worldwide results directly from the benefits of nitrogen, the most widely used fertilizer. Other primary fertilizers contain phosphorus and/or potassium. In addition, numerous micronutrients found in fertilizers – such as zinc, molybdenum, boron and manganese – are not only essential for plant growth but are also essential for human health.

Although atmospheric nitrogen is abundantly available, its extraction requires a great deal of energy. To produce one ton of urea, the primary nitrogen fertilizer product, the energy equivalent of four barrels of oil is required.

Moreover, applied but unused nitrogen fertilizer often becomes environmental pollutants, either in the form of potent greenhouse gas or runoff that fouls watersheds. Phosphate is mined, and the world's phosphate rock resources are finite (although greater than generally believed). Inefficiencies in production and use result in less than 20 percent of mined phosphate becoming part of the food chain.

Despite these major issues with currently available products, no broadly effective fertilizer product has

been developed over the past 25 years – particularly no product affordable for use on food crops by farmers in less developed countries.

Renewing the Green Revolution

On a global scale, there are many challenges facing future food production. These challenges include relying primarily on highly intensive agricultural production systems producing the quantity of food needed for the rapidly increasing population, the limited amount of unused arable land and the increasing environmental toll of intensified crop production.

At a local level, challenges are particularly difficult throughout Sub-Saharan Africa, where the Green Revolution never took place. Smallholder agriculture continues to rely on extensive production, with low productivity, poor profitability for farmers and continuous exploitation of new agricultural lands. Agricultural production must be able to produce more with less environmental impact, and with fewer of the world's limited resources.

Implementation of the VFRC Strategy

The VFRC has developed a "Proof of Concept" for the need and role of the Center. It is conducting further review and supplementary laboratory testing before launching

a coordinated long-term research program. The VFRC will focus where the need for increasing efficiency is greatest - nitrogen and phosphate fertilizers. Later, work on micronutrients, including collaboration with plant breeders to ensure effective uptake, will be launched.

The VFRC Board of Advisors is emphasizing the consideration of new, non-traditional paradigms and truly innovative ways to improve efficiencies in fertilizer production/use.

A research agenda will be developed by all partners in consultation with donors. Specific research will be defined with clear targets and timelines, and some projects may be awarded through competitive grants.

This approach will maximize the benefits of synergies and the overall impact of research. Impact and efficiency will be further increased through close coordination, resulting in minimized redundancy.

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
United States

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

Mark Huisenga
Agriculture Programs Advisor
U.S. Agency for International Development
United States

Assétou Kanouté
Research and Teaching Assistant
Polytechnic Institute for Rural and Applied Research
University of Mali
Mali

Luc Maene
Director General
International Fertilizer Industry Association
France

M. Peter McPherson
President
Association of Public and Land-Grant Universities
United States

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

Dr. Roelof (Rudy) Rabbinge
University Professor in Sustainable Development and Food Security
Wageningen University
Netherlands

Dr. Renfang Shen
Director General
Institute of Soil Science, Chinese Academy of Sciences
Director
State Key Laboratory of Soil and Sustainable Agriculture
People's Republic of China

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

Ajay Vashee
President
International Federation of Agricultural Producers
Zambia

Dr. Juergen Voegelé
Director
Agriculture and Rural Development
World Bank
United States

Dr. Prem Warrior
Senior Program Officer
Agricultural Development Group (Science and Technology Team)
Bill & Melinda Gates Foundation
United States

IFDC.org

Launches



IFDC advanced its Internet presence with the launch of a completely redesigned website (www.ifdc.org) in June 2010. The site provides much more information than its predecessor (particularly in terms of video and photography resources) and is drawing new visitors from around the world on a daily basis.

With web development assistance from Keystone Business Solutions, IFDC's Information and Communications Unit designed the site and either created or chose its content from the IFDC archives and other sources.

The new site not only has a robust design but also contains up-to-date news and information about the Center. Content is added to the site daily and is closely monitored by IFDC communications staff members.

The site is more interactive and gives visitors a wide variety of information in a number of different ways. A key area of interest is the IFDC "Map of the World," where users can hover over the nearly 100 countries that IFDC is currently serving or has served in the past. More information about a country and/or IFDC projects within a specific country is available.

Other areas of interest include biographies of IFDC's Board of Directors and key staff, a calendar of events, donor and partner lists and publications.

The newly improved website has specific information on each of the four divisions within IFDC. The division sections link to pages about each project and the nations in which IFDC currently operates.

Nation pages provide information about the specific country as well as slideshows, videos, success stories and current IFDC projects within the country.

Project pages provide similar information but also include brochures, newsletters and links to project websites (if applicable). Updates to these pages are made on an ongoing basis.

A fully revamped training section of the website houses information on upcoming training programs. Those interested can now register and pay online for training programs with ease. A wide variety of IFDC publications can also be purchased online.

Members of the media now have access to media contacts, a media information registration form, press releases, frequently asked questions about IFDC and a press kit. The press kit contains pertinent information about IFDC for media use.

A collection of IFDC photography is also available on Flickr, which is linked through www.ifdc.org (on the home and contact pages) or directly at www.flickr.com/photos/ifdcphotography.

IFDC is also engaging in social networking and has a presence on Twitter and Facebook. Links can be found on the home and contacts pages of www.ifdc.org. Users may also find IFDC directly on Twitter at www.twitter.com/ifdcnews. To "follow" IFDC, click "Follow" (users must be logged in to Twitter). To find IFDC on Facebook, log in and enter "IFDC" in the search bar. Here users can receive updates by clicking the "Like" button.

Another feature of the website is IFDC's employment portal, where job seekers can search IFDC's worldwide employment opportunities. Prospective employees can apply online, attach resumes and share information with others who may have an interest in employment opportunities at IFDC.

AfricaFertilizer.org

Provides Much-Needed Market Information

While information on agricultural inputs is available worldwide, it remains largely inaccessible to smallholder farmers and agro-dealers in Sub-Saharan Africa. In March 2010, IFDC launched www.africafertilizer.org, a global forum to exchange information on fertilizers, soil fertility and the critical agricultural issues that face Africa. The web portal features interactive maps, numerous downloadable publications, a data center of market information and statistics and a directory of African fertilizer producers and traders.

Improving farmers' access to agricultural inputs and market information was recommended in the *Abuja Declaration on Fertilizer for an African Green Revolution*, written at the Africa Fertilizer Summit in 2006. Fertilizer use in Sub-Saharan Africa is the lowest in the world – averaging only 8.0 kg/ha annually. Even more startling, African farmers must pay two to four times the average world market price for fertilizers.

"AfricaFertilizer.org contributes to efforts to increase fertilizer use on the continent by offering a unique combination of information and data on fertilizer and soil fertility issues in Africa," stated Patrice Annequin, IFDC market information specialist. It does this by sourcing, aggregating, filtering and sharing information on fertilizer from and to international, regional and national players

in the sector. Information sources include the FAO, the International Fertilizer Industry Association (IFA), as well as national ministries of agriculture, bureaus of statistics and local agri-input trade associations.

The free, public information available on the site serves several major international and regional bodies and initiatives. These include the African Union, New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency, ECOWAS, COMESA and AGRA. It will also feed many specialized market information systems such as Regional Agricultural Input Market Information and Transparency System (AMITSA) in eastern Africa (www.amitsa.org), local and regional agro-dealer associations and numerous market development projects in Sub-Saharan Africa.

"AfricaFertilizer.org also engages small, local fertilizer dealers and agricultural extension workers who are the 'last mile' link with smallholder farmers," according to Annequin. "There is an ongoing demand from agro-dealers for information on international fertilizer prices and for contact information of producers or importers that can supply the dealers with quality fertilizers at a fair price."



AfricaFertilizer.org



Focus Feature

UDP Technology Changes Lives in Bangladesh for Thousands of Farmers

IFDC has had a presence in Bangladesh for more than 30 years. IFDC's main objective has been and continues to be to increase food security and alleviate poverty by improving agricultural productivity. IFDC pioneered the development of UDP – a technology that substantially improves crop yields using less fertilizer – and introduced it to the farmers of Bangladesh.

Most farmers broadcast urea fertilizer directly into the floodwater of lowland rice, wasting two-thirds of the urea. UDP, the insertion of urea briquettes into the rice root zone after transplanting reduces urea use by 40 percent while increasing crop yields 25 to 40 percent. Also, fewer weeds grow with the briquette application.

UDP offers entrepreneurs business opportunities because farmers must have a briquette supply. Establishing village-level businesses to manufacture briquette-making machines, as well as briquettes, is part of IFDC's strategy to strengthen the private sector. UDP provides benefits for farmers, the environment and the economy.

Expansion of UDP

There have been two successful UDP expansion projects in Bangladesh. Project achievements in the first (Expansion of Urea Deep Placement Technology in 80 Upazilas of Bangladesh), which ended in 2009, include:

- About 1.2 million farmers used UDP technology.
- 480,000 ha were brought under UDP technology.
- Incremental paddy rice production totaled 344,000 mt.

- Per farm income increased by an average of \$116 per year. (This is a significant increase in income; average Bangladesh per capita income is \$520 annually.)
- More than 2,800 Department of Agricultural Extension (DAE) field staff were trained in UDP.
- Farmers used 46,000 mt less urea, saving \$21 million.

Expansion of Urea Deep Placement Technology in an Additional 80 Upazilas of Bangladesh began in November 2008 and ends in June 2011. Progress to date includes:

- 1,800 training sessions for 72,000 farmers were completed in 2009-2010. An estimated 500,000 more farmers now use UDP.
- An additional 225,000 ha were brought under UDP.
- There are 212 briquette machines in use. Urea supergranule briquette production is more than 28,000 mt annually.



- Media campaigns and motivational meetings were held in Dinajpur, Netrokona, Rangpur and Sylhet districts with 400 members of the media participating.

ILSAFARM Restores Livelihoods

The Improved Livelihood for Sidr-Affected Rice Farmers (ILSAFARM) project is helping restore livelihoods for 280,000 families whose crops and lands were destroyed by Cyclone Sidr in 2007.

The project focuses on improving rice yields by improving fertilizer use efficiency. UDP technology is being rapidly introduced to targeted farmers, and supply system development is also a priority. Achievements to date include:

- More than 108,000 ha of paddy rice were brought under UDP technology.
- More than 440,000 farm families adopted UDP.
- Incremental paddy rice production increased by almost 59,000 mt annually.
- Total farmer income increased by \$21 million annually.
- Over 155,000 farmers were trained in 3,882 trainings.
- Training sessions for briquette producers were conducted and 157 briquette machines were purchased by rural entrepreneurs.
- 386 field demonstrations and 109 field days were conducted.

"I have been working for IFDC since November 1992 and have been involved in several IFDC-implemented projects in Bangladesh. However, no project so far has delivered direct benefits to the farmers the way that UDP projects have," said Ishrat Jahan, IFDC resident representative and team leader in Bangladesh.

Usharani Goswami is an example of how UDP is changing lives in Bangladesh.

A Bangladeshi woman farmer, Goswami has been awarded the Bangabandhu National Agriculture Award for her contribution to Bangladesh's agriculture sector. She received a Gold Medal from Bangladesh's Prime Minister, Sheikh Hasina (see photo on opposite page).

A recent widow, Goswami received technical UDP training from the local DAE extension agent and IFDC. Goswami applied UDP technology to paddy rice during the Boro season and generated a yield of 8.4 mt, realizing a net income of \$150. She then applied the technology to her crop during the Aman season with equally good results.

Her success motivated 80 percent of the farmers in her area to apply the same technology to their crops. In addition to UDP, she has influenced area farmers to produce as well as use organic fertilizer for soil health and to use integrated pest management.

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 by private sector enterprises and policy analysis to support market-based development.

Human capacity building and institutional development are core activities in each of EAD's projects. 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 agri-inputs technologies.



EAD Projects in:

Albania
Bangladesh
Kyrgyzstan
Tajikistan

Success Story

Kyrgyz Agro-Input Enterprise Development (KAED II) Project Named “Best” by USAID

USAID recently named the Kyrgyz Agro-Input Enterprise Development (KAED II) project the “best agricultural project” in the Central Asian Republics. KAED II is building on the success of the original KAED project (2001-2008), which served as a beacon for private sector-led agribusiness development.

The original project 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 continues that work and also has expanded activities into northern Kyrgyzstan. Because of the recent political events in Kyrgyzstan, social stability is once again paramount to increasing food security.

One of the most significant successes of the original project was the establishment of the Association of Agribusinessmen of Kyrgyzstan (AAK). AAK coordinates the work of more than 140 producers, suppliers and agro-dealers in the Kyrgyz Republic. Collaborating with AAK, KAED II has opened 35 farm stores throughout the country and organized six international agricultural exhibitions (known as the “Silk Road Agro-Expo”). AAK reaches approximately 300,000 farmers throughout Kyrgyzstan and, in addition to supplying high quality inputs, facilitates technology transfer to its customers.

KAED II addresses food security issues by increasing productivity of staple crops – wheat, corn and sunflower – and improving livestock feed and dairy cow care. The project also is responsible for the production and broadcast of a weekly television program (“Advice to Farmers”) on a community access channel.

More than 1,000 ha were planted with new wheat varieties in 2009, yielding an estimated 5,000 mt of seed. The income generated from the sale of this seed is expected to total almost \$3 million. The project’s distribution of quality winter wheat seed in Kyrgyzstan in 2008 led to the production of enough bread wheat to satisfy domestic needs for the first time in 15 years.

KAED II continues to engage in capacity building for local veterinarians and livestock nutritionists. The project is credited with saving 22,000 cows during the harsh winter by distributing livestock feed at a 40 percent subsidy.



An additional 48,000 cows were able to maintain their body weight. KAED II has provided grants to input suppliers for the development of the Kyrgyz poultry industry. A campaign to support local egg producers was launched.

USAID and Eurasia Group LLC Switzerland signed a Memorandum of Understanding in December 2009 aimed at strengthening the public-private sector partnership through a Global Development Alliance (GDA). It is estimated that GDA activities will result in 8,000 mt of incremental corn production for livestock fodder and 480 mt of processed edible oil.

KAED II implemented a pilot initiative (Markaz Joint Agro-Initiative Project) to restore soil fertility to 35 ha of stony land, making it possible to grow alfalfa, barley and fodder crops. Tenants received more than \$28,000 in income from formerly unused land. This pilot project is serving as a model for the rehabilitation of degraded land in other regions of southern Kyrgyzstan, thus saving scarce natural resources and increasing production capacities for staple crops such as wheat and potatoes.

In addition to USAID’s recognition of the project, Dr. Hiqmet Demiri, KAED chief of party, received an “Outstanding Service Award” from USAID. Demiri said, “Most of the credit goes to the KAED team for the great work, dedication, creativity and responsiveness in implementing the project. The lives of Kyrgyz farmers are changing and this is the best reward for us.”

Project Impact

KAED II Implements Emergency Aid to Kyrgyzstan During Recent Political Upheaval

Political unrest and violence, which began in the Kyrgyz Republic in April 2010 and is still continuing, threatens agricultural productivity in the upcoming harvest season.

Many farmers already lacked access to quality inputs and finance during the planting season. The political uncertainty will have an impact on food production and food security, particularly in the impoverished areas of Batken, Issyk-kul, Naryn, Osh and Talas oblasts (districts).

The country is suffering from a de facto trade embargo because neighboring countries – China, Kazakhstan and Uzbekistan – are keeping their borders closed. Trade volume has dropped by 55 percent and some businesses suffered 70 to 80 percent losses. Shortages increased fuel prices and added to the difficulties of Kyrgyz farmers.

Following the political turmoil, the KAED II project successfully implemented an assistance program addressing the immediate need of 10,000 farmers for agricultural inputs.



With funding from USAID, KAED II worked closely with the Kyrgyz Ministry of Agriculture to distribute the inputs through established market outlets in 16 oblasts.

Farmers in the assisted areas received 100 mt of high quality spring wheat seed, 100 mt of barley seed, 40 mt of high-yielding hybrid corn seed and 100 mt of compound fertilizers.

In June, KAED II distributed 20 mt of high quality hybrid corn seed, donated by Pioneer Switzerland, to 2,800 farmers in Chui, Jalalabad and Osh oblasts. KAED II also prepared and distributed leaflets to help farmers use the correct techniques for growing the hybrid corn.

These interventions will help correct market distortions created by the recent unrest. The current situation follows Kyrgyzstan's first year of positive food balance in 15 years. Winter and spring wheat production in 2009 amounted to 1.1 million mt – enough bread wheat to satisfy domestic demand.

This year, it is estimated that wheat production will total less than one million mt. With proper support, particularly the use of more mineral fertilizer for spring wheat, it is possible to increase the expected yields by 10 to 12 percent, narrowing the food balance gap.



ESAFD

East and Southern Africa Division

Focus Feature

Building Fertilizer Value Chains

About half of the world's population is alive today because of increased food production fueled by mineral fertilizers. However, many smallholder farmers in developing countries struggle to access quality and affordable fertilizers and other agricultural inputs.

"Because fertilizer use in Sub-Saharan Africa is the lowest in the world, we're building and strengthening fertilizer value chains to help farmers access and efficiently use the critical input," said J.J. Robert Groot, director of ESAFD.

The fertilizer value chain encompasses the steps, individuals and organizations leading from the factory to the farm gate.

IFDC helps facilitate coordination and build stronger linkages along the supply chain among fertilizer manufacturers and distributors, input suppliers, agro-dealers, smallholder farmers, financial institutions and MIS.

ESAFD uses IFDC's holistic approach to input market development, which is based on five pillars: Policy Environment, Human Capital Development, Access to Finance, Market Information and Regulatory Frameworks.

Policy Environment

Building a progressive environment for agricultural trade through policy and institutional reforms is one of the primary goals of the STAR project. STAR works with RECs, farmer organizations and the private sector to create policy environments conducive to improved regional trade along the entire agricultural value chain.

Human Capital Development

ESAFD strengthens the capacities of agro-dealers and farmers at every level. Agro-dealers are trained in more productive and effective business practices, including securing a timely supply of quality fertilizers, marketing products and demonstrating the proper use of fertilizers to farmers. For example, about 20,000 farmers will receive information and training from agro-dealers trained through the Mozambique Agro-Dealer Development (MADD) project.

Farmers are trained how to manage their farms more effectively, including the efficient use of fertilizer and soil fertility management practices. Association development is also a powerful tool to assist both agro-dealers and farmers in developing their businesses. Associations provide members with a common voice to affect change in agricultural trade policy.



Access to Finance

Value chains cannot develop and improve without appropriate funding mechanisms. The CATALIST project is utilizing an inventory credit system (known as “warrantage” in French) in Burundi, DRC and Rwanda. This system allows farmers access to credit by using their harvest as a guarantee for the borrowed funds. Farmers can then use the credit to buy much-needed fertilizer and other inputs. Farmers also are able to sell their crops in the months after the harvest, when market prices are higher.

Voucher programs help farmers access fertilizers at affordable prices while building business for agro-dealers. ESAFD is currently collaborating with Rwanda’s Ministry of Agriculture to facilitate farmers’ access to fertilizers via a voucher system that uses electronic identity cards to combat fraud and abuse.

Market Information

The lack of information about agri-inputs is one factor affecting fertilizer use in the region. In collaboration with the EAC and COMESA, ESAFD developed AMITSA. The website www.amitsa.org provides market and

technical data on agricultural inputs and a variety of crop-related information in eastern Africa. AMITSA users include farmers, retailers, extension agents and other participants in the agri-input value chain.

Regulatory Frameworks

Quality assurance of inputs is a key component of ESAFD projects. IFDC has been instrumental in facilitating regulatory reforms in fertilizer quality standards, truth-in-labeling, open trade, common zero tariffs and other individual and common market initiatives.

IFDC helped the government of Mozambique draft a fertilizer regulatory bill (not yet approved as law). In Kenya, ESAFD conducted policy dialogue to remove unnecessary restrictions on the import of diammonium phosphate.

In addition to strengthening the five pillars of input market development, ESAFD is also linking farmers to output markets and improving port facilities in Kenya, Mozambique and Tanzania.

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
Mozambique
Rwanda
South Africa
Tanzania
Uganda

Success Story

STAR's Partnership with COMESA, EAC and SADC

ESAFD is promoting improved regional trade along eastern and southern Africa's entire agricultural value chain through collaboration with COMESA, EAC and the Southern African Development Community (SADC). ESAFD and these RECs are partners in the implementation of the STAR project, funded through a grant from the William and Flora Hewlett Foundation.

STAR has improved food security and agricultural growth by strengthening trade in agri-inputs and improving market access for agro-dealers and smallholder farmers. This includes improved access to quality inputs and advanced agricultural technologies along with stronger market linkages and agricultural policy reforms.

STAR is achieving its goals through targeted consultations with key stakeholders to assess and improve the fertilizer policy environment. The project also has organized annual policy and trade workshops to build a consensus around policy agendas at the regional level.

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."

According to Dr. Balu Bumb, STAR coordinator, "Together, these RECs and ESAFD are facilitating an enabling environment for improved regional trade."

STAR has worked with policymakers in Mozambique, Nigeria and Tanzania to remove policy constraints to fertilizer trade and market development and contributed to capacity development at EAC and COMESA.

Headquartered in Lusaka, Zambia, COMESA is a group of 19 African states dedicated to promoting regional integration by removing trade and investment barriers. COMESA monitors trade policies and whether regulatory systems are trade-enhancing. It also emphasizes professional capacity building.

The EAC is comprised of five countries, with its headquarters in Arusha, Tanzania. The EAC conducted



a comparative review of fertilizer policy and legal and regulatory frameworks. Three working groups were established to promote harmonization of policies for agri-input trade in the region.

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

Workshop attendees agreed that non-conductive 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 for promoting fertilizer use and supply to spark a Green Revolution in Africa.

SADC is headquartered in Gaborone, Botswana, and is comprised of 15 member states. One SADC mandate is to develop food security policies in the region.

IFDC and SADC conducted a study on existing fertilizer production facilities. As a follow-up activity, STAR and SADC co-organized a workshop in October 2009 to discuss and validate the study. More than 40 stakeholders attended.

Project Impact

Maize Intensification in Mozambique

Maize is one of Mozambique's staple foods. However, maize yields in the country seldom exceed 1.0 mt/ha due to low soil fertility, drought, weeds, pests and crop diseases. In addition, Mozambican farmers apply only about one kg/ha of fertilizer and seldom use improved seeds and CPPs on maize crops.



The Maize Intensification in Mozambique (MIM) project has improved maize production by introducing smallholder farmers to quality inputs (fertilizer, improved seeds and certified CPPs). The MIM project started in 2008 and is implemented by IFDC with funding and in-kind technical support from IFA, the International Plant Nutrition Institute and the International Potash Institute.

During the last two agricultural seasons, farmers were trained in the proper use of inputs and other soil fertility management techniques. MIM also helped farmers transition from subsistence farming to commercial-quality maize production and marketing. The project strengthened linkages along the maize value chain by connecting farmers to agri-input suppliers, private enterprises, NGOs, farmer and producer organizations,

agricultural extension services and the International Maize and Wheat Improvement Center.

Project activities include the establishment of trials in three provinces of Mozambique in collaboration with local farmer organizations. To demonstrate the effect of using improved seed and fertilizers, six identical treatments were installed in all locations. At each location, three different varieties of maize were planted to demonstrate that fertilization would result in higher production regardless of which variety was used.

At the same time, the demonstrations provided an opportunity for farmers to see that the traditional saved seed would be less productive than the improved varieties and that a hybrid seed would be superior to an open-pollinated variety (OPV). Farmers were introduced to local input dealers, who supply improved seeds and fertilizers, and to grain dealers, who can buy their increased production.



The results obtained show average yields of 3.5 mt/ha in the first year; with average yields of 4.5 mt/ha, hybrids clearly outperformed the OPVs and farmer-saved seed. Average yield was 2.3 mt/ha in the second year as a result of drought in some areas. Still, this is a dramatic increase compared with the national average, which is on the order of 0.6 mt/ha.

Focus Feature

Linking Farmers to Markets

Smallholder farmers in Ghana are typically poorly connected to national and regional markets, face low and unreliable cash incomes and have little incentive to invest in yield-enhancing technologies.

Farmers are also limited by poor access to labor, financing, market information and post-harvest facilities that would allow them to respond to market opportunities. Investing in agricultural technologies and techniques is necessary to boost the growth of Ghana's agricultural sector, a key economic pillar.

Traditionally, agricultural development addresses the supply side of the value chain, focusing on increased productivity through better farm practices and more efficient agri-inputs use. Few projects address the demand side to ensure increased crop yields reach the market without adversely affecting prices or farmer incomes.

Improving Incomes and Linkages

Linking Farmers to Markets (FTM) is improving key farmer-to-market linkages in three provinces in Ghana and improving farmers' incomes by developing new commercial ties with traders, marketing companies, processors and institutional buyers for crops. FTM addresses each link of the value chain, ensuring that there are no interruptions in the profitable flow of produce from farmers to markets.

By the conclusion of FTM, the project will have positively impacted approximately 50,000 smallholder farmers, increasing their incomes by 15 to 20 percent. Additional benefits include: building alliances among farmers and others in the value chain; equipping farmers, farmers' organizations and

small- to medium-sized enterprises with organizational management, technical and entrepreneurial skills training; strengthening capacities of linkage organizations and entrepreneurs to provide effective marketing services; and building relationships among farmers and local enterprises 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 pooling participating farmers' produce and selling the aggregated yields to large industrial buyers.

Between 2005 and 2008, SFMC assisted about 5,000 smallholder farmers to sell 4,300 mt of produce for \$1.4 million. Building on this success, FTM is training, mentoring and equipping SFMC and other local entrepreneurs to provide substantially increased business and marketing services to more smallholders.



Strengthening the Value Chain

In turn, the farmers are supplying produce to industrial buyers. SFMC and other FTM-supported entrepreneurs should increase their profitability by up to 30 percent by providing needed business services and aggregating farmers' produce. Participating agro-industries will obtain between 60 and 75 percent of their raw materials from FTM farmers through SFMC. Another positive outcome is that access to financing sources will increase for farmers, marketing companies and entrepreneurs.

These various activities are increasing the capacity of rice-, soybean-, sorghum- and maize-producing farmers' organizations to adopt and use best practices to produce quality products. Participating farmers will reduce transaction costs by 30 percent through collective action and increased linkages with buyers.

Concurrently, millers and processing groups are also increasing their capacity to supply high-quality and competitive products to meet market demand. Commercial relationships between smallholders and industrial buyers, processors and local entrepreneurs for the regular supply of produce are being created. The FTM

project lasts only three years; however, these economic development benefits should last for many years.

The project directly benefits smallholder farmers, buyers, processors, consumers and others in the value chain. By linking with buyers before a growing season, farmers have opportunities to work within ensured market environments, and many are engaging in pre-negotiated price agreements.

These benefits-based relationships are the cornerstone of the project – protecting the interests of all along the value chain, particularly the smallholder farmers. Traders, processors, agri-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 purchase pricing.

NWAFD Overview

NWAFD encompasses an area that is sweeping in its size and scope of agricultural, economic and social needs. NWAFD closely partners with organizations at regional, national and local levels, including 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 ECOWAS and 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: integrated soil fertility management; input market development; output market development; and policy support.



NWAFD Projects in:

Benin	Guinea-Bissau
Burkina Faso	Liberia
Cape Verde	Mali
Chad	Niger
Côte d'Ivoire	Nigeria
Gambia	Senegal
Ghana	Sierra Leone
Guinea	Togo

Success Story

Nigeria Fertilizer Voucher Program

Many Nigerian smallholder farmers have access to subsidized fertilizer for the first time in 10 years because of an IFDC-implemented voucher program. IFDC has helped over 1.5 million farmers and more than 1,500 agro-dealers access agricultural inputs, such as fertilizers and improved seeds, through past and present voucher programs in several countries. Voucher programs help smallholder farmers obtain inputs while simultaneously building business opportunities for rural agro-dealers and distribution channels for larger input suppliers.

Vouchers are security-protected coupons that are often called “smart subsidies” because they supply inputs to farmers without disrupting the commercial market. Vouchers enable farmers to obtain quality agri-inputs in a timely fashion (using vouchers in lieu of cash), while also helping to build the businesses and professionalism of rural agro-dealers.

Agriculture employs about 70 percent of Nigeria’s population. Although the federal government subsidized fertilizer procurement and distribution between 1977 and 1996, less than 30 percent of the available fertilizer reached farmers. In 1997, the sector was abruptly liberalized, but without a transition period or the support of the private sector. Fertilizer use fell from 1.2 mmt in 1992 to 56,700 mt in 1997. A 25 percent federal subsidy was reintroduced in 1999, and many of Nigeria’s state governments also added subsidies. Because fertilizer has been so heavily subsidized, there has been no incentive to build a private sector input distribution system. Moreover, fertilizer still often fails to reach smallholder farmers who need it the most.

IFDC previously implemented two small voucher programs in Nigeria in 2004 and 2008. To facilitate a transition and ensure that fertilizer reaches targeted beneficiaries, the federal and state governments of Nigeria requested that IFDC lead a large-scale voucher program in Kano and Taraba states during 2009. Due to its success, the Nigerian government decided to withdraw from fertilizer procurement in 2010. An expanded 2010 program has been implemented in Kano and Taraba, as well as in Bauchi and Kwara states. Kaduna state is expected to be included in 2011.

2009 Program

The 2009 program had two main goals: guarantee that fertilizer reached the farmers who needed it the most; and ensure that a private sector fertilizer supply and distribution channel was in place.



IFDC implemented the program and provided technical support. Funding came from the Nigerian National Food Reserve Agency, Kano and Taraba state governments, USAID and AGRA. Nearly 200,000 farmers in the two states received subsidized fertilizer through the 2009 voucher program. Rigorous identification and inspection systems were established to deter fraud and abuse and to ensure that fertilizer reached the smallholder farmers who needed it.

In addition to helping smallholder farmers access inputs, IFDC voucher programs provide training and technical assistance to both farmers and agro-dealers. Agro-dealers are trained to introduce new technologies and to teach their farmer-customers the correct use of inputs. Nearly 10,000 farm group chairmen, extension officers, agro-dealers and “master” trainers were trained through the 2009 program.

2010 Program

The 2010 voucher program continues to introduce an economical and efficient system for state governments to distribute discounted inputs to targeted farmers while simultaneously strengthening all stakeholders’ capabilities to implement a similar, sustainable program in the future.

By the end of 2010, it is expected that several hundred thousand smallholder farmers in the four states will benefit from the voucher program. Crops targeted for increased production include maize, rice, yams, cassava, sorghum, soybeans and millet. The project will also strengthen Nigeria’s private sector fertilizer suppliers, distributors and retailers. Ultimately, the strengthened private sector channel will be able to operate without outside support and continue its economic development and expansion.

Project Impact

Benin Non-Cotton

The needed increase in agricultural productivity in Africa can only be realized through the use of appropriate agricultural inputs such as fertilizers, high-quality seeds and CPPs. In Benin, smallholder farmers outside the cotton sector have limited access to these inputs. Since few farmers cultivating food crops are organized, they are not able to arrange a supply of appropriate non-cotton inputs or the sources of finance to purchase them. This leads to low food crop productivity and low economic returns, jeopardizing food security and further economic growth.

The Benin Non-Cotton project is seeking to increase the production and productivity of high-value food crops by 40 percent and increase the incomes of 30,000 smallholder farmers by 20 percent during the course of its implementation. The three-year project (2009-2012) is funded by the Royal Embassy of the Netherlands and is implemented by IFDC in a strategic partnership with the Netherlands Development Organization (SNV).

The project focuses on increasing farmers' capacities to produce maize, pineapple and rice – all high-value food crops with the potential to balance Benin's agricultural system, while creating greater opportunities for a large number of farmers. To accomplish this goal, IFDC is training farmers in advanced agricultural technologies

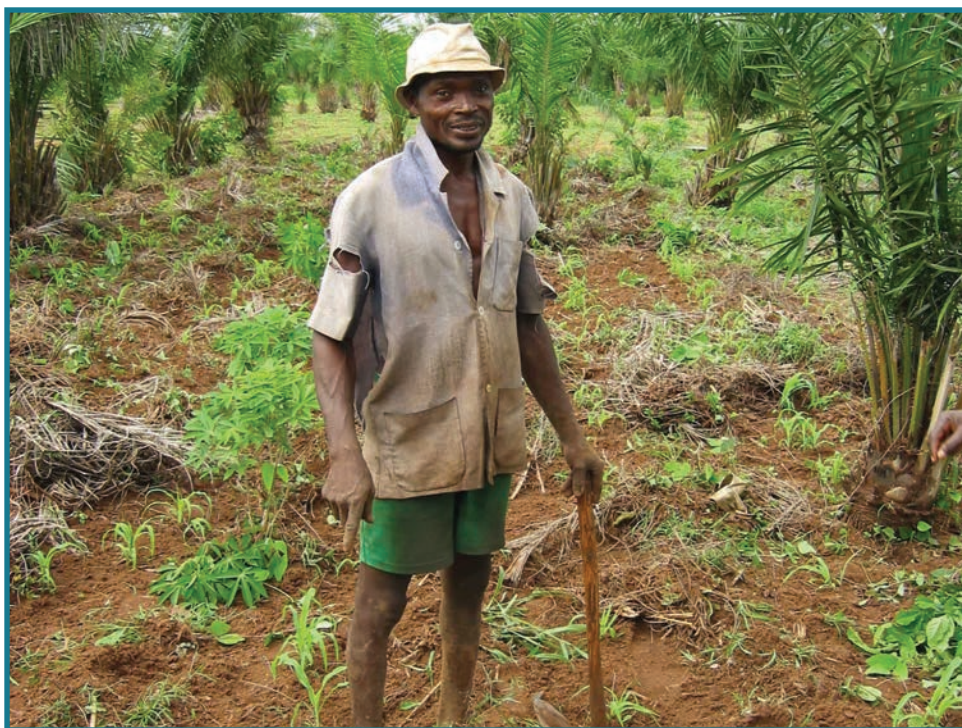


and the proper use of quality agri-inputs. The project also builds stronger linkages between smallholder farmers and agro-dealer organizations, inputs suppliers, financial institutions, processing/storage facilities, transportation sources and private enterprises to facilitate product export.

As a major element of the project, micro-financing is provided by Fédération des caisses d'épargne et de crédit agricole mutuel of Benin and the Belgian Raiffeisen Foundation. These institutions have established inventory credit systems that guarantee loans to select farmers, allowing smallholders to sell their outputs at later dates to take advantage of peak selling-season prices.

The project launched in October 2009, with a ceremony in Bohicon, Benin. Attendees included representatives from participating producer organizations, micro-finance institutions, agro-dealer organizations, the Benin Ministry of Agriculture, SNV and IFDC.

A study tour was organized to Niger to increase participants' knowledge of inventory credit systems. The tour included representatives from the Benin Ministry of Agriculture, dealer associations and producer organizations. Inventory credit system studies were implemented to provide a better understanding of the production and market issues in each intervention zone.



RDD

Research and Development Division

Focus Feature

New Technology Under Development: Bio-Solid Fertilizers

RDD conducts research, product evaluation and engineering functions related to fertilizer raw materials and the production of fertilizer. RDD has been testing and evaluating bio-solid fertilizers for several years.

The U.S. Environmental Protection Agency (USEPA) defines bio-solids as “nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. When treated and processed, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth.”

If properly pre-treated and applied, bio-solids have numerous benefits. Bio-solids are recycled and cause less environmental damage. They consist of complex organic matter and micronutrients beneficial to soil quality. Nutrients are released from bio-solids more slowly than with conventional fertilizers. This means a better synchronization between nutrient availability and the periods of highest nutrient need by the crop.

“Nutrient-enriched bio-solids have low production costs and physical stability that allow for storage, transportation and mechanized application,” according to Dr. Upendra Singh, IFDC principal scientist – systems modeling (soil fertility). They also have the potential for increased agronomic effectiveness.

Greenhouse Evaluations

“While initial studies show that bio-solid fertilizer outperforms conventional fertilizer, little information was available on other key areas,” Singh stated. “We

evaluated bio-solids for mineralization, nitrogen, ammonia volatilization losses, nitrogen leaching and the effect on soil acidification.”

The bio-solid fertilizer products were compared with urea and ammonium sulfate in various soil types. They were manufactured from municipal wastewater bio-solids and transformed into granulated fertilizer through a sterilization treatment process that ensures compliance with USEPA regulations.

The evaluations showed that the bio-solid fertilizer had significantly lower ammonia volatilization losses and nitrate leaching and slower nitrification rates. In other words, more nitrogen was kept in the soil and less was lost to groundwater and the atmosphere.



The study concluded that bio-solid fertilizers could potentially play an important role in restoring the natural nitrogen cycle of soils.

RDD conducted an additional greenhouse study using bio-solids under conditions present during rice production. Rice is the staple food for half of the world's population. Inefficiencies in rice production are due primarily to large nitrogen losses (up to 65 percent) when urea fertilizer is spread by broadcast methods.

The study evaluated whether nitrogen use efficiency was higher when using bio-solid fertilizers. For transplanted rice, bio-solid fertilizer and ammonium sulfate fertilizer proved to be more efficient nitrogen sources in terms of grain yield, nitrogen uptake and recovery of applied nitrogen. With direct-seeded rice, grain yields were similar among all fertilizers tested.

Field Evaluations

RDD recently conducted bio-solid trials on a wheat farm near IFDC headquarters. The trials compared yields obtained using bio-solid fertilizer with yields obtained using the farmer's standard fertilizer in two soils with different organic carbon content.

On the soil with lower organic carbon content, higher wheat yields were obtained using the bio-solid fertilizer.

On the soil with higher organic carbon content, there was no evident advantage in using the bio-solid fertilizer.

Potential Benefits

Most of the soils in Sub-Saharan Africa and the tropical soils of South Asia and Latin America are characteristically fragile and have low fertility. Bio-solid fertilizers could help improve the fertility of these soils because they contain secondary and micronutrients in addition to nitrogen. Bio-solid fertilizers reduce soil fragility by adding organic matter, which improves soil structure, cation exchange capacity (which helps the soil retain nutrients) and water retention capacity. The positive agronomic results of using bio-solid fertilizer need to be subjected to an economic analysis to determine how bio-solids compare with conventional fertilizers when all cost factors are considered.

The local production of bio-solids will likely result in less expensive fertilizers compared with imported synthetic fertilizers. Environmental benefits of the local production and use of bio-solid fertilizers include reducing the accumulation of urban waste and maintaining the natural nitrogen cycle.

RDD Overview

RDD promotes food security, agricultural growth and environmental stewardship through sound and viable fertilizer and crop production technologies, policy development and institutional collaboration. The division conducts research focused on fertilizer materials, soil fertility, nutrient management, socio-economics and market information. RDD is comprised of the Agro-Economics and Fertilizer Technology programs. The agronomy component of the Agro-Economics program focuses on nutrient and water management technologies, while the socio-economic component conducts research on the economic and social relevance of technologies and policy, as well as market development options. The Fertilizer Technology program encompasses all research and engineering functions conducted by IFDC related to fertilizer raw materials and fertilizer production.

RDD programs focus on IFDC's three strategic initiatives: the Africa Productivity Initiative with the objective to double crop yields of assisted farmers; the Nitrogen Efficiency Initiative with the objective to increase, for assisted farmers, the efficiency of nitrogen use to at least 45 percent, thus increasing profits while reducing pollution; and the Phosphate Efficiency Initiative with the objective to make directly applied phosphate rock as effective as more expensive water-soluble phosphate fertilizers.

RDD scientists also provide scientific and technical assistance and backstopping to regional field programs and IFDC-sponsored training events.

Success Story

Field Support for RDD Staff

From headquarters, RDD provides support to IFDC field operations worldwide. Such assistance is provided on issues related to nutrient dynamics, market development and policy dialogue and reform associated with fertilizer products and use efficiency. RDD staff members also provide technical guidance to the developing world concerning the use of indigenous raw material resources and participate in international training programs and workshops concerning world agriculture and fertilizer use, production and safety.

Dr. Deborah Hellums, RDD senior program support specialist, regularly travels to Rwanda to assist the CATALIST and CATALIST-SEW projects. "These are regional projects that target Central Africa's Great Lakes Region," Hellums said. "In this area, we have the twin problems of decreasing food stocks and increasing food and energy prices that are threatening stability and development. Project activities focus on broad-scale agricultural intensification efforts that decrease competition for land use between food and energy (wood) crops by increasing productivity and incomes."

Hellums provides technical assistance to project activities and assists in the preparation of project reports and training. On a recent trip, she facilitated hands-on training of agronomists in the use of soil test kits designed for in-field use and reviewed and analyzed results from CATALIST participatory field trials. She also participated in discussions on the use of electronically generated bar-coded vouchers for fertilizers created for the 2010-2011 wheat and maize crops in Rwanda.

RDD staff also recently visited the ILSAFARM project in Bangladesh. They collected data from UDP trials and on-farm demonstrations and identified partners and facilities for conducting future trials. Meetings were held with stakeholders to discuss progress on the mechanization of UDP application, development of a geographical database of UDP adoption and the introduction of more efficient fertilizers in Bangladesh.

Assistance is often provided to IFDC-sponsored training programs. Earlier this year, RDD staff conducted a training program in Nairobi, Kenya, on decision support tools for agricultural production, fertilizer recommendations and climatic variability. Workshops are provided to improve the technical knowledge of engineers and specialists involved in fertilizer production worldwide. During a



recent policy workshop on improving fertilizer supply in Africa, RDD engineers gave presentations on Africa's fertilizer production potential, issues to consider when building nitrogen and phosphate fertilizer plants and granulation and blending operations.

In order to help farmers access affordable fertilizer, IFDC's RDD staff members have assisted governments in planning and implementing fertilizer auction and voucher programs in Afghanistan, Malawi, Mozambique, Nigeria and Rwanda. These programs help farmers increase incomes and productivity while building business for local agro-dealers. Currently, IFDC is attempting to reduce voucher production costs by replacing paper vouchers with an electronically produced bar-coded voucher unique to each farmer.

To be successful, input voucher programs require careful analysis, transparency and detailed implementation planning. During the past six months Paul Makepeace, IFDC senior specialist – marketing, worked in Nigeria, helping the federal and state governments build and implement a voucher program in four states. "This program has introduced a more economical and efficient system for state governments to distribute discounted inputs to targeted farmers," Makepeace stated. "This is the first time many of the farmers have been able to access fertilizer."

Key RDD Projects

- Development and testing of new nitrogen fertilizer products with the potential to increase nutrient use efficiency for smallholder farmers in the developing world.
- Evaluation and improvement of human health and nutrition through the incorporation of critical micronutrients into fertilizer materials for use in nutrient-deficient areas in developing countries.
- Assessment and application of scientific sampling procedures for assessment of fertilizer quality throughout the value chain in selected African countries.
- Development and application of crop modeling and geographic information systems to improve fertilizer recommendations in developing countries.
- Evaluation of selected phosphate rocks to determine the effect of grinding to nano-particle size and the potential to increase the Neutral Ammonium Citrate (NAC) soluble P_2O_5 .

Impact

The Importance of Fertilizers

No region in the world has ever reached food security without increasing the use of fertilizers. In fact, mineral fertilizers have been credited with keeping alive almost half of the world's population.

Fertilizers consist of combinations of nutrients that plants must have to grow, in a form they can use. Nitrogen (N), phosphorus (P) and potassium (K), often called NPK when they are combined, are the primary nutrients required for plant growth.

Magnesium, sulfur and calcium are secondary nutrients along with micronutrients such as boron, copper, iodine, iron, manganese and zinc; these are also necessary for normal plant – and human – growth.

As plants grow, they absorb and deplete nutrients from the soil. Farmers further deplete those same nutrients when they harvest crops. Fertilizers nourish the soil by returning essential mineral nutrients.



The Green Revolution of the 1970s, which generated dramatic increases in food production in Asia and Latin America, occurred because higher crop yields were made possible through the use of improved seeds and inputs, particularly mineral fertilizers. The Green Revolution is credited with feeding more than one billion people in Asia alone.

RDD conducts research and engineering functions related to fertilizer raw materials and the production of fertilizer materials. New and improved fertilizers are critical to help feed the world's growing population, provide sustainable global food security and protect the environment.

TWCU

Training and Workshop Coordination Unit

Focus Feature

Over One Million Trained in 2009

Training is a strategic tool that helps IFDC fulfill its institutional mission and is the most effective means of agricultural technology transfer and capacity development. Training in the technical use of agricultural inputs and agribusiness skills is important to the local capacity building of IFDC partners in the field. Training is also a method to ensure the sustainability of IFDC research and development work.

IFDC conducts three types of training: international training and workshop programs; specialized programs at the request of other organizations involved in agricultural productivity activities; and programs within its field projects.

IFDC's most significant training programs occur in conjunction with its field projects. With a total of 1,012,186 participants in the IFDC field training programs conducted in 2009, the IFDC audience increased by 2.2 percent over 2008.

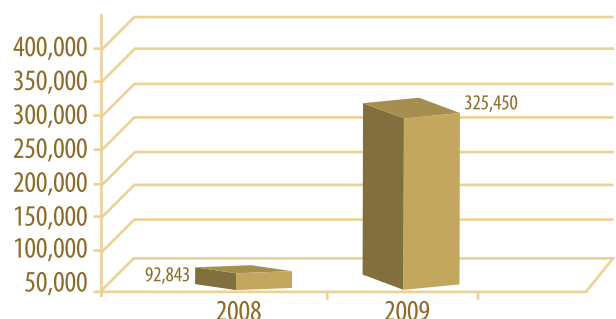
IFDC makes a special effort to reach women, who often do not have the opportunity for training in agricultural technologies, even though they often are critical to the success of a smallholder farm. The number of women enrolled in training programs more than tripled in 2009 compared with 2008, increasing from 92,843 to 325,450. The proportion of women trained increased from 9.4 percent of the total in 2008 to 32.1 percent in 2009.

To reach as many smallholder farmers as possible, IFDC utilizes the "training of trainers" model, employing different levels of cascade training.

IFDC projects start by training master trainers who will in turn train extension agents and/or farmers' representatives who then replicate the training at the grassroots level. To ensure faithful replication of training content at each level, strict attention is paid to the assessment of new trainers' performances before certifying them, with special attention to the quality of the training manuals provided to them.

The training of trainers' model follows the adult learning theory, which recognizes that people who train others remember 90 percent of the content they teach. Additionally, the diffusion of innovation theory states that people adopt new technology through their trusted social networks. Information retention

Number of Female Participants



capabilities enhanced by innovation adoption facilities increase chances of technology transfer.

Across Africa, value chain development is accelerating with the training of more than 2,000 representatives of value chain-facilitating structures. They were trained on subjects such as ISFM, inventory credit/warehouse receipts systems, crop profitability, credit access, post-harvest strategies and cooperative/organizational management.

Moreover, nearly 70 associations and cooperatives with more than 3,000 members were trained in the establishment, management and rules governing cooperatives. In addition, training was provided to more than 1,000 agri-input retailers and dealers (approximately 25 percent were women), creating the conditions for input market development.

Training will continue to be a major IFDC focus. Through its technology and information transfer training programs, IFDC is reaching millions of smallholder farmers, as well as agro-dealers, government agricultural extension agents and other members of the agricultural community. This ensures that although IFDC projects end, those served by IFDC will continue to benefit from the knowledge imparted to them.

International Training Programs

IFDC's latest international training programs provided opportunities for participants to enhance skills and knowledge in three major areas: fertilizer production technologies to minimize the cost of production; fertilizer use efficiency technologies to generate higher returns for smallholder farmers; and fertilizer marketing strategies meant to boost agriculture as an economic growth engine. International training programs over the past year include:

Application of Decision Support Tools for Fertilizer Recommendations & Integrated Soil Fertility Management – The two-week workshop took place in Burkina Faso and was designed to help scientists understand the intricacies of modeling in order to apply it to the daily challenges of agricultural production systems. The emphasis was the use of computer-based decision support tools (DSTs) to make fertilizer recommendations. As an unanticipated benefit, participants agreed to form a user network to help promote DSTs in Sub-Saharan Africa.

Phosphate Fertilizer Production Technology – Participants from 16 countries attended this joint IFA/IFDC workshop. Its objective was to improve the technical knowledge of engineers and others involved in the production of chemical fertilizers, helping them improve the operation and profitability of fertilizer production facilities.

Linking Farmers to Markets – Fifty participants from 11 countries were trained in input and output market linkages, agribusiness cluster development, building and strengthening agribusiness associations, market information services and agricultural policies. The training took place in Kenya and CASE was the backbone of the training aimed at improving the livelihoods of producers.

Managing Risks in the Fertilizer Value Chain in West Africa – Participants from seven countries attended the training, which focused on developing effective fertilizer value chains and the risk management aspects of such value chains. Held in Ghana, the training program consisted of presentations, lectures, panel discussions and field visits.



Improving Fertilizer Supply in Africa: Opportunities for Production and Trade – This international policy workshop was co-organized by IFDC and the EAC. Held in Tanzania, 63 participants and 29 speakers from 17 countries discussed issues related to fertilizer production, trade, investment, market linkages and policy environments.

The workshop included a keynote address by the Secretary General of the EAC on the creation of a common market for East Africa and sessions on food security, agricultural development, fertilizer production and technology, fertilizer trade, market linkages and policy issues affecting fertilizer sector development.

Project Portfolio

East and Southern Africa Division

Agricultural Input Market Development II (AIMS II)

Objective - AIMS II promotes private sector investment in agri-input technologies and marketing in Mozambique. AIMS II 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 for Tropical Agriculture, International Crops Research Institute for the Semi-Arid Tropics, Citizens' Network for Foreign Affairs

Donor - U.S. Agency for International Development (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 Central Africa's Great Lakes Region (CAGLR). CATALIST 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 non-governmental organizations (NGOs), national Ministries of Agriculture

Donor - Royal Embassy of the Netherlands

Locations - Burundi, the North and South Kivu provinces of the Democratic Republic of Congo and Rwanda

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 dealer networks to support the introduction of improved production technologies to smallholder farmers. EADN also focuses on improving agro-dealer promotion and distribution capabilities for quality fertilizers, improved seed and crop protection products.

Collaborators - International Fund for Agricultural Development (IFAD), agro-dealers, farmers

Donor - IFAD

Locations - Kenya, Tanzania and Uganda

Food and Agriculture Organization (FAO) Voucher Program

Objective - IFDC is assisting the Government of Mozambique to implement a fertilizer/seed pilot program. The program initially targeted 25,000 maize and rice farmers. With the successful completion of the pilot program, up-scaling to reach a much larger percentage of Mozambique's total maize and rice farmers is expected.

Collaborators - Agro-dealers, bankers, FAO, farmers, Government of the Republic of Mozambique

Donor - FAO

Location - Mozambique

Livelihoods and Enterprises for Agricultural Development (LEAD)

Objective - LEAD is helping raise rural agricultural productivity and incomes for targeted smallholder farmers in Uganda, providing support to those who grow food and cash crops. Utilizing the value chain approach to agricultural development, LEAD improves

productivity through training and access to quality agri-inputs, and increases trade capacity by building better market linkages.

Collaborators - Agro-dealers, ARD, Inc.

Donor - USAID

Location - Uganda

Maize Intensification in Mozambique (MIM)

Objective - MIM assists smallholder farmers to increase maize production through better access to quality agri-inputs and specialized training programs. MIM strengthens the maize value chain by building linkages among farmers and agri-input suppliers, maize buyers, NGOs, farmer organizations and agricultural extension services. MIM uses cluster formation and demonstration fields to promote improved agricultural technologies.

Collaborators - International Maize and Wheat Improvement Center, farmer and producer organizations, marketing companies, NGOs

Donors - International Fertilizer Industry Association (IFA), International Plant Nutrition Institute, International Potash Institute

Location - Mozambique

Mozambique Agro-Dealer Development (MADD)

Objective - MADD builds on the achievements of AIMS II. The project is strengthening and expanding agro-dealer networks in Manica and Tete provinces of Mozambique.

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

Donor - Alliance for a Green Revolution in Africa (AGRA)

Location - Mozambique

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 - STAR promotes food security and agricultural growth through improved regional trade along East and southern Africa's entire agricultural value chain. STAR is improving market access for agro-dealers and smallholder farmers. This includes better access to quality inputs and advanced technologies along with improved market linkages, local and regional agricultural policy reforms and greater involvement of agricultural enterprises.

Collaborators - Agro-dealers, Common Market for East and Southern Africa (COMESA), East African Community (EAC), smallholder farmers, Southern African Development Community (SADC)

Donor - The William and Flora Hewlett Foundation

Locations - Eastern and southern Africa

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

Objective - More than 90 percent of household energy in the CAGLR is derived from biomass, contributing to rapid deforestation. CATALIST-SEW promotes sustainable energy production through reforestation and development of wood fuel and charcoal value chains. SEW 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, Ministries of Agriculture

Donor - Royal Embassy of the Netherlands

Locations - Burundi, the North and South Kivu provinces of the Democratic Republic of Congo and Rwanda

North and West Africa Division

Africa Fertilizer Efficiency Program

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

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

Donor - Agrium, Inc.

Locations - Burkina Faso, Burundi, Ghana, Rwanda 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 transport crops (utilizing a mobile processing unit that eliminates crop loss). The project guarantees payment for delivered crops and includes access to agri-inputs, training and new technologies. The project is expected to increase these farmers' incomes by 22 percent.

Collaborators - Dutch Agricultural Development and Trading Company (DADTCO), farmers

Donors - Netherlands' Directorate-General for International Cooperation (DGIS)/Schokland Fund

Locations - Nigerian states of Benue, Osun and Taraba

Development of Agribusiness Clusters in Mali

Objective - As an extension of the From Thousands to Millions (1000s+) project, Development of Agribusiness Clusters in Mali aims to increase the number of agribusiness clusters in Mali by 30 percent, and build on the strategy of making agro-dealer clusters sustainable. The project also contributes to business development in rural areas and agri-input distribution.

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

Donor - DGIS

Location - Mali

Rural Economic Development of the Koulikoro Region (DERK II)

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

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

Donor - Netherlands Development Organization (SNV)-Mali

Location - Mali

Establishment of the Cocoa Abrabopa Association (CAA)

Objective - This association-building project began in December 2007 to increase incomes and improve livelihoods of resource-poor cocoa farmers in Ghana by strengthening the CAA. This public-private partnership is helping the CAA become more financially sustainable, build members' business skills and technical knowledge, improve access to agri-inputs, improve cocoa quality and create a favorable trade environment.

Collaborators - Crop Research Institute of Ghana, TechnoServe, Wienco

Donor - Royal Embassy of the Netherlands

Location - Ghana

Fertilizer and Sustainable Agricultural Development (F&SAD)

Objective - F&SAD improves access to, and the efficient use of agri-inputs in the West African nations of Mali, Niger and Togo. Using Integrated Soil Fertility Management (ISFM), F&SAD provides agricultural intensification support. In addition to ISFM, the project includes participatory development of technology packages and facilitation of improved linkages between farmers and input and output markets.

Collaborators - Agro-dealers, associations, 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 to boost rice production in Ghana, Mali, Nigeria and Senegal in order to mitigate potential shortages of this staple crop. The program targets 10,000 rice farmers in each nation and aims to boost total domestic rice production by 30,000 tons of paddy rice. IFDC is also improving access for the 40,000 farmers to certified rice seed and quality fertilizer.

Collaborators - Farmers, Global Food Security Relief Program

Donor - Africa Rice Center (WARDA)

Locations - Ghana, Mali, Nigeria and Senegal

From Thousands to Millions (1000s+)

Objective - 1000s+ is improving the livelihoods of one million farm households, involving 10 million people, through the up-scaling of IFDC's Competitive Agricultural Systems and Enterprises (CASE) approach. The farmer-led initiative, based on agribusiness cluster formation, focuses on ISFM, improving soil fertility through the combined use of mineral and organic fertilizers.

Collaborators - Agribusinesses, business support services, producer organizations

Donor - DGIS

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

Ghana Agro-Dealer Development Project (GADD)

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

Collaborators - AGRA, agro-dealers, farmers, Ghana Agricultural Association of Business and Information Center

Donor - AGRA

Location - Ghana

Improving the Access of Non-Cotton Agricultural Producers in Benin

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

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

Donor - Royal Embassy of the Netherlands

Location - Benin

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

Objective - The project improves livelihoods 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, smallholder farmers

Donor - IFAD

Locations - Benin, Burkina Faso, Ghana and Togo

Marketing Inputs Regionally (MIR Plus)

Objective - MIR Plus is improving policy and regulatory environments in the 15 nations that make up the Economic Community of West African States (ECOWAS). The project is increasing the use and efficiency of agri-inputs, improving the availability of technical and market information and using technology to link producers' organizations with agro-dealers. MIR Plus links 2.23 million farmers to agro-dealers who are helping train and supply the farmers.

Collaborators - ECOWAS, private input importers and dealers, sector ministries, West African Economic and Monetary Union (UEMOA)

Donors - ECOWAS, UEMOA, DGIS

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 - MARKETS is helping to transform Nigerian subsistence agriculture into a commercially competitive market. IFDC's role is to improve the agri-input supply system and increase the sale of improved seeds, fertilizers and crop protection products. IFDC is also creating networks of trained agro-dealers while developing input markets to create stronger value chains.

Collaborators - Agro-dealers, Chemonics, farmers

Donor - Chemonics

Location - Nigeria

MiDA's Millennium Challenge Compact (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 food staple crops in certain areas of Ghana, and is charged with enhancing the competitiveness of Ghana's export base 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. NADS 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, Fertilizer Producers and Suppliers Association of Nigeria

Donor - AGRA

Location - Four states in Nigeria

Nigeria Voucher Program

Objective - The Nigeria fertilizer voucher program enables farmers to obtain quality agri-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 300,000 smallholder farmers in four Nigerian states will have received vouchers. The project also works to strengthen Nigeria's private sector fertilizer supply and distribution channel.

Collaborators - AGRA, agro-dealers, farmers

Donors - AGRA, Nigerian National Food Reserve Agency, USAID

Location - 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 high cotton contamination. 100,000 tons of seed cotton will be affected during 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, producer organizations

Donors - Common Fund for Commodities (CFC) and European Union

Locations - Burkina Faso, Côte d'Ivoire and Mali

Strategic Alliance for Agricultural Development in Africa (SAADA)

Objective - Under SAADA, IFDC has 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 utilizes CASE for agribusiness cluster formation and ISFM to increase agricultural productivity.

Collaborators - Agricultural Intensification in Sub-Saharan Africa Network (AISSA), 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 (C-4). IFDC works with farmers, researchers, input distributors, private enterprises, inter-professional associations and textile artisans – promoting advanced agricultural practices that improve yields, building capacities, supporting the ginning sector and training artisans to access regional and international markets.

Collaborators - Abt Associates, Aid to Artisans, Auburn University, Michigan State University and Tuskegee University

Donor - USAID

Locations - Benin, Burkina Faso, Chad and Mali

EurAsia Division

Albania Credit Enhancement Fund

Objective - Funded with monetized proceeds from the U.S. Department of Agriculture (USDA) Food for Progress Program, this program introduces technology and training to farmers in dairy and livestock operations, while increasing agribusiness 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, 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, 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 Bangladesh Department of Agricultural Extension (DAE) field officials to monitor long-term farmer progress.

Collaborators - DAE

Donor - DAE

Location - Bangladesh (80 sub-districts)

Improved Livelihood for Sidr-Affected Rice Farmers (ILSAFARM)

Objective - ILSAFARM, sponsored by USAID and the government of Bangladesh, is restoring 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 is conducting 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, urea briquette producers

Donor - USAID

Location - Bangladesh

Kyrgyz Agro-Input Enterprise Development (KAED II) Project

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

Collaborators - Agro-dealers, farmers, Government of Kyrgyzstan

Donor - USAID

Location - Northern and southern Kyrgyzstan

Market Development in the Fertilizer Sector of Bangladesh (KATALYST)

Objective - KATALYST is a development project that assesses the fertilizer market with an 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 - Agro-dealers, farmers, Ministry of Commerce, policymakers

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

Location - Bangladesh

Productive Agriculture in Tajikistan (PRO-APT)

Objective - PRO-APT 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, farmers

Donors - 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, University of Miami

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

Location - United States

** Further information about each of these projects can be found on the IFDC website at www.ifdc.org.*

Global Offices and Staff

U.S.A.

IFDC Headquarters

P.O. Box 2040
Muscle Shoals, Alabama 35662
U.S.A.
Telephone: +1(256) 381-6600
Telefax: +1(256) 381-7408
E-Mail: general@ifdc.org

Staff

Office of the President

Amitava H. Roy, President and Chief Executive Officer
Melissa L. Clark, Specialist – Proposal Development
Donald R. Crane, Jr., Senior Development Officer – Washington, D.C.
Cynthia A. McComas, Senior Secretary
Debra E. Rutland, Executive Secretary

Operations Division

Charles W. Snipes, Jr., Director
Kaye F. Barker, Senior Budget/Procurement Officer
Catherine J. Basham, Coordinator – Information Technology
Kelly M. Battles, Secretary
Doyce E. Couch, Coordinator – Maintenance Services
C. David Edwards, Senior Human Resources Officer
Ronnie L. Faires, Senior Purchasing Officer
Amber N. Hammock, Human Resources Officer
Christopher B. Holt, Budget Officer
Kelly K. Kelley, Contracts Officer
Nell R. McGee, Accountant
Bethany A. Morris, Accountant
Brenda G. Peden, Receptionist
Wendell C. Rhodes, Senior Technician – Maintenance Services
Leslie K. Richardson, Associate Accountant
Juanita L. Schultz, Accountant
Debra S. Shedd, Supervisor – Accounting Services
Kasta L. Staggs, Associate Accountant
Michael O. Thompson, Senior Visitor Relations Officer
Xia Wan, Coordinator – Computer Services
David B. Wright, Senior Technician

Information and Communications Unit

Scott Mall, Coordinator
Cheryl W. Bennett, Librarian
Heather R. Gasaway, Graphic Artist/Web Designer
Jane L. Goss, Senior Word Processor
Courtney B. Greene, Editor
Vickie J. Hollandsworth, Senior Word Processor⁵
Julie D. Kohler, Word Processor
Kathryn Robinson^{6,1}
Lisa L. Thigpen, Editor
Donna W. Venable, Coordinator – Word Processing/Graphics

Research and Development Division

John T. Shields, Interim Director
Price D. Abernathy, Technician – Pilot Plant Services
E. Rick Austin, Coordinator – Analytical Services
Janice T. Berry, Coordinator – Market Information Unit
Wendie D. Bible, Senior Analyst – Laboratory
Bobby W. Biggers, Senior Technician – Pilot Plant Services/Physical Properties
Robert C. Bosheers, Coordinator – Greenhouse and Pilot Plant Services
Danny M. Brown, Analyst – Laboratory
Balu L. Bumb, Principal Scientist and Program Leader – Policy, Trade and Markets Program²
Celia J. Calvo, Senior Analyst – Laboratory
Omprakash Choudhury, Specialist – Engineering
Adam C. Crosswhite, Associate Engineer
Luisa M. De Faría, Senior Specialist – Engineering
Thomas E. Evers, Senior Technician – Pilot Plant Services
Jacob N. Frye, Student Assistant
Porfirio A. Fuentes, Senior Scientist – Economics (Trade)
Job Fugice, Jr., Analyst – Laboratory
Olivia J. Gist, GIS Specialist
Robert P. Gray, Specialist – Engineering
Murray P. Hasinoff, Coordinator – Virtual Fertilizer Research Center
Deborah T. Hellums, Senior Program Support Specialist
Vaughn K. Henry, Senior Technician – Greenhouse Services
Brandon S. Holaway, Technician – Pilot Plant Services
Andrea D. Hovater, Specialist – Engineering
Phillip G. Humphres, Senior Specialist – Engineering¹
Christopher A. James, Analyst – Laboratory
Sabeshan Kanagalingam, Senior Research Project Leader
Deborah B. King, Senior Secretary
J. Ramón Lazo de la Vega, Senior Scientist and Interim Program Leader of Fertilizer Technology Program
Paul K. Makepeace, Senior Scientist – Marketing
Benjamin C. Malone, Jr., Senior Analyst – Laboratory⁴
H. Resha McCarley, Secretary
James Rea Phyfer, Technician – Pilot Plant Services
Flavia Rey de Castro, Associate GIS Specialist¹
Henry Russaw, Jr., Senior Technician – Pilot Plant Services
Joaquin Sanabria, Scientist – Biometrician
Upendra Singh, Principal Scientist/Specialist
G. Ronald Smith, Senior Technician – Greenhouse Services
Thomas P. Thompson, Senior Scientist – Sociology
Steven J. Van Kauwenbergh, Principal Scientist and Project Leader – Phosphate Research and Resources Initiative
D. Chadwick Waide, Technician – Pilot Plant Services
Linda D. Walsh, Specialist – Data Management
Paul W. Wilkens, Scientist – Programmer

Training and Workshop Unit

Timothy Karera, Director
Deborah S. Garrison, Senior Secretary
M. Patricia Stowe, Senior Secretary⁴



Short-Term Staff

Dilshod Abdulhomidov, Monitoring Specialist
E. Lina Adzoh-Vinyo, French Translator
Vas D. Aggarwal, Project Closeout Specialist
Sydul Alam Alam, Briquetter Mechanic
A.M.M. Shawkat Ali, Fertilizer Policy Specialist
Carlos A. Baanante, Economist
James H. Beardsley, Voucher Specialist
Clyde R. Beaver III, Communications Specialist
M. Feisal Beig, Marketing Specialist
Ylli Bicoku, Livestock Specialist
Peter S. Bloch, Market Development Specialist
Jan W. Bulthuis, Voucher Specialist
Balu L. Bumb, Policy Economist
Valerie H. Buschman, Communications Specialist
Jerry J. Cape, Minerals Deposit Advisor
Jean-Claude Camaleonte, Agronomist
Bob Corsby, Agriculture Scout
Steve Dauphin, Business Plan Development Specialist
Martin Drevon, Fertilizer Supply Specialist
Yves Duplessis, Marketing Specialist
Regine Dupuy, Communications Specialist
Calvin Fambisayi, Voucher Survey Coordinator
D. Ian Gregory, Agribusiness Specialist
Alicia K. Hall, Clerical Support
Lawrence L. Hammond, Economic Analysis Specialist
Thomas R. Hargrove, Agricultural Communications Specialist
Cornelia H. Heflin, Internal Auditor
R. Gary Howard, Laboratory Analyst
Amy E. Hylinski, Communications Assistant
Md. Mofizul Islam, Agronomist
Bartholomeus H. Janssen, Soil Fertility Specialist
Richard A.T. Kablan, Soil Testing Specialist
Henry J. Lamb, Phosphate Deposit Specialist
Joël Le Turioner, Marketing Specialist
Eben M. Makonese, Facilitator
Robert T. McCutcheon, Project Evaluator
David P. McNally, Administrative Specialist
Lavina M. Mehra, Human Resources Specialist
Marcos Melaku, Budget Information Specialist
M. R. Motsara, Fertilizer Assessment Specialist
Ruth K. Oniang'o, Proposal Development Specialist
Filip L.M. Taylor Parkins, Project Evaluation Specialist
Nathan A. Ryan, Legal Counsel
Jason A. Scarpone, Input Market Specialist
Alan C. Schroeder, Environmental Specialist
Har Bhajan Singh, Input Marketing Specialist
Carol S. Slaton, Word Processor
Cindy H. Thornton, Travel Agent
Sekou Traore, IT Specialist
Lawrence E. Tweed, Voucher Specialist
Ralph J. Valente, Nitrogen Emissions Specialist
Antonius van der Krabben, Training Specialist
Suzanne A. Valkveld, Rice Value Chain Specialist
Willem A. van den Andel, Survey Specialist
Daniel F. Waterman, Development Specialist
Russell S. Yost, Soil Testing Specialist
Aziza U. Yuldasheva, Association Development Specialist
Tom Zeppenfeldt, Monitoring & Evaluation Specialist

Africa

East and Southern Africa Division (ESAFD)

J.J. Robert Groot, Division Director (based in Kenya)



IFDC Burundi

IFDC Burundi
Rohero II - 3, Avenue Bweru
B.P. 1995 Bujumbura
Bujumbura
BURUNDI
Telephone: +257 22 25 78 75
E-Mail: ifdcburundi@ifdc.org

Staff

CATALIST

Josée Harerimana, Janitor
Marie Manirabona, Administrative Assistant³
Jean Ndimubandi, Trainer of Value Chain Development Facilitators³
Raphaël Nkuzimana, Driver
Emmanuel Nshimirimana, Project Evaluation, Burundi³
Alexis Ntamavukiro, National Coordinator
Zacharie Nzobahabonayo, National Agronomist
Christian Simbananiye, Project Evaluator, Burundi³
Cyriaque Simbashizubwoba, National Agronomist
Médiatrice Siniremera, Administrative Assistant

SEW

Consolée Barikore, Training Officer
Venant Barindogo, National Value Chain Officer
Espérance Bigirimana, Secretary to the Director
André De Groot, International Value Chain Advisor
Jean Pierre Kisamare, Communications Officer
Jan Willem Molenaar, Agroforestry Specialist³
Albéric Ndayisaba, National Agroforestry Officer
Richard Ndizeye, Driver
Hussein Ahmed Nduwimana, Driver¹
Jean Marie Nintije, Driver
Gloria Nsabimana, Janitor
Rémy Christian Ntirurikure, Translator
Innocent Nzeyimana, Driver
Cyriaque Nzojibwami, Regional Expert Agroforestry
Pierre Rosseau, Project Coordinator
Léonie Rudaguza, Office Manager
Théogène Sindayigaya, Administrative and Logistics – Assistant
Elias Vyamungu, Accountant

IFDC DR Congo

IFDC DR Congo
Avenue du Musée, Quartier Himbi,
Goma, North Kivu Province
DEMOCRATIC REPUBLIC OF CONGO
Telephone: +243 813 134 697 / 243 811 821 661
E-Mail: ifdcrcd@ifdc.org

Staff

CATALIST

Antoine Bakangadio, National Coordinator
Samson Chirhuza, National Coordinator
Georges Fikiri, Administrative Assistant
Fiston Muisha Kahakwa, Driver
Jean-Marie Kamale Kambale, National Agronomist
Shemuhombo Kibira, IFDC Duty Free and Taxes Exemption Expert³
Jean Pierre Kirimwami Kashangabuye, Project Evaluation³
Fiston Kombi Tavughanamolo, Driver
Sandra Kavira Tawitemwira, National Agronomist
Vagheni Tumbira, Project Evaluator³

SEW

Philippe Bauma, National Agroforestry Officer
Gaston Saidi Pene Katambwe, Administrative Assistant
Aimé Kikuru, National Value Chain Officer
Patrick Otokwe Malisawa, Driver

IFDC Kenya

IFDC Kenya
(Divisional Coordination Office)
c/o ICIPE Duduville Campus, Kasarani
Thika Road
P.O. Box 30772-00100
Nairobi
KENYA
Telephone: +254 20 863 2720
Telefax: +254 20 863 2729 / 001/2
E-Mail: ifdckenya@ifdc.org

Staff

Richard Jones, Program Leader – Agribusiness
Phillip Karuri, Project Leader, EADN
Elisha O. Kongere, Driver/Field Assistant
Eric Macharia, Database Administrator
Linnet Masiwe, Office Assistant
Charity Mathenge, Secretary to Division Director
Pamela Mwajuma, Administrative Assistant
Kevin Nyalwal, Trainee Accountant⁶
Charles O. Ngutu, Regional Coordinator, Administration and Finance
Bridget A. Okumu, MIS Specialist
Francis Shivonje, EADN National Coordinator

IFDC Mozambique

IFDC Mozambique
Avenida Amílcar Cabral, 1512
Maputo
MOZAMBIQUE
Telephone: 258 21 419 433
Telefax: 258 21 419 434
and
Caixa Postal 474
Beira
MOZAMBIQUE
Telephone: 258 23 326 090
Telefax: 258 23 326 089
E-Mail: ifdcmozambique@ifdc.org

Staff

Marcel van den Berg, Chief of Party AIMS / Country Representative
Carlos Zandamela, Policy Specialist – AIMS³
Paulino Bernardo, Economist/Finance and Administration Manager – AIMS
Manuel Ginga Gonçalves, Association Development Specialist – AIMS
Eduardo Vilanculos, Driver – AIMS
Rebello Xavier Estevão, Driver – AIMS
Ismael Assane, Office Maintenance Assistant - AIMS
Salomao Chilaule, Security/Custodial – AIMS
Fenias Cossa, Security/Custodial – AIMS
Natal Pita, Security/Custodial – AIMS
Julião Saguete Chipe, Security/Custodial – AIMS
Gil Francisco Mucave, Project Manager – MADD
Manuel Sibanda, Driver – MADD
José Viagem, Security/Custodial – MADD
José Chapo, Security/Custodial – MADD
Francisco Damião, Security/Custodial – MADD
Elsa Campira, Finance and Administration Manager – AIMS/MIM
Antonio Rocha, Agribusiness Specialist – MIM
Daniela Salite, Project Coordinator / Agronomist – MIM
Aniceto Matias, Project Manager – BASIS

IFDC Rwanda

IFDC Rwanda
730, Kimihurura 2, Gasabo District
P.O. Box 6758
Kigali
RWANDA
Telephone: +250 (0) 255 10 42 11
Mobile: +250 (0) 78830 28 31
E-Mail: ifdcrwanda@ifdc.org

Staff

CATALIST

Henk Berman, Principal Scientist and Chief of Party
Innocent Baragahoranye, Trainer – Integrated Soil Fertility Management³
Venant Bavakure, Senior Regional Accountant
Vital Bizimana, Translator³
Joseph Désiré Dusabimana, Imbaraga Agronomist³
Olivier Habimana, Librarian
Jean Marie Pierre Habineza, Administrative and Logistics Assistant
Emmanuel Harerimana, Gardener
Thomas Hatangimana, National Agronomist
Raphael Havugimana, Driver
Innocent Iyamuremye, ARDI Agronomist³
Bert Jansen, Wageningen Professor³
Marie Claire Kagwera, Office Manager
Marie Claire Kalihangabo, Regional Expert in Administration and Finance
Camille Karangwa, Regional Coordinator for Communications and
Public Relations
Emile Kalume, Driver
Ancilla Kayitesi, Office Manager³
Joël Kayumba, Consultant – CATALIST Project Evaluation Rwanda³
Thierry Hitimana Kayumba, Computer Science Engineer³
Révérien Lindiro, National Agronomist
Marie Manirabona, ARDI Consultant³
Danielle Mbesherubusa, Communications and Translation Officer

Josiane Mukamana, Data Entry & Filing Clerk³
Laurence Mukamana, CATALIST National Coordinator
Béatrice Mukamasoni, Driver
Arthur Mupenzi, Janitor
Françoise Murekatete, Janitor³
George Mwandalalo, Mechanization Expert³
Jean Damascène Ndayambaje, Agroforestry Expert³
Joséphine Ndayisenga, Secretary to the Director
Jean Marie Ndizeye, Driver
Marie Nirere, Imbaraga Agronomist³
Célestin Nizeyimana, Agricultural Economist³
Kagabo Nkubito, Regional Expert in Agricultural and Business Credit
Jean Paul Nyabyenda, Soil Analysis Assistant⁶
Jean Damascène Nyamwasa, Regional Training Coordinator
Carine Rukera, Monitoring, Evaluation and Contact Management Officer
Jean Pierre Ruvuzandekwe, Training Officer
Serge Rwamasirabo, Agricultural Economist³
Bruce Smith, Deputy COP and Market Development International Advisor
Solofonirina Tiana, Trainer – Market Development³
Noël Ujeneza, Regional Expert in Business Cluster Development
Chantal Umuhire, Small Grants Evaluation Expert³
Aann Aarbert Wanders, Mechanization Expert³

SEW Component

Fabien Kayitare, National Value Chain Officer
Ancilla Kayitesi, Administrative Assistant
Yan Willem Molenaar, Planning Facilitator³
Asmini Murekatete, Janitor
Ernestine Mushimiyimana, Accounts Assistant
Bonaventure Nduwayezu, National Agroforestry Officer
Jerome Nkunduje, Driver
Joel Timyan, Planning Facilitator³
Yves Zawadi, Workshop Facilitator³
Bitoga Jean Paul, Workshop Facilitator³

AGRIUM Component

Landouard Semukera, Agronomist

South Africa

NEPAD Secretariat
International Business Gateway
Block B, Gateway Park
Corner Challenger and Columbia Avenues
Midridge Office Park
Midrand 1685
SOUTH AFRICA
Telephone: +27 11 256 3600 (operator); +27 11 256 3644 (direct line); +27 76 604 5437 (cell)
E-Mail: mwanzala@ifdc.org

Staff

Maria Wanzala, Senior Lead Specialist – Agricultural Markets

Ethiopia

IFDC c/o African Union Commission
Agriculture and Food Security Division
Dept. of Rural Economy and Agriculture
P.O. Box 3243
Addis Ababa, Ethiopia
Telephone: Office (+251 -11) 551 77 00 ext 6-1824
Mobile (+251) 912 96 30 65
Telefax: (+251 -11) 55 25 835

Staff

Oumou M. Camara, Scientist – Economics

IFDC Tanzania

IFDC Tanzania
c/o AMSDP
Livestock Building near AICC
P.O. Box 14416
Arusha
TANZANIA
Telephone: +255 27 2544580
Telefax: +255 27 2544562
E-Mail: fmzee@ifdc.org
and
O/C East Africa Community
EAC Secretariat,
AICC Bldg, Kilimanjaro Wing, 5th Fl,
P.O. Box 1096
Arusha
TANZANIA
Telephone: 255-2504588/4253-8
Telefax: 255-2504255/2504481

Staff

Filbert Mzee, EADN Project Country Coordinator
Doreen Isoke, Regional Agri-Inputs Trade Specialist
Josephine Mkunda, Regional Agri-Inputs Trade Specialist

IFDC Uganda

IFDC Uganda
c/o Uganda National Agro-Dealer Association
Plot No. 137, Namuwongo Rd
Namuwongo
P.O. Box 7634
Kampala
UGANDA
Telephone: +256 312 293475
Telefax: +256 414 3402677

Staff

Rogers Walamaku, EADN Project Country Coordinator
Daniel Kikoyo, Market Specialist – LEAD
Lawrence Mwebesa, Market Specialist – LEAD



North and West Africa Division (NWAfD)

Marjatta Eilittä, Division Director (based in Ghana)

IFDC Benin

IFDC Benin
10 BP 1200
Cotonou
BENIN
Telephone: (229) 21 30 59 90 or (229) 21 30 76 20
Telefax: (229) 21 30 59 91
E-Mail: ifdcbenin@ifdc.org

Staff

Comlan Grégoire Houngnibo, Country Representative and Country Coordinator – WACIP
Virgile Adigbe, Janitor
Enock Ulrich M. Agbidinokoun, Accountant
Mathias Ahounou, Cluster Advisor – 1000s+
Jérôme Bankole, Driver
Irma Cledjo, Assistant Country Coordinator – WACIP³
Larissa S. Aurélia Dakpogan-Gbaguidi, Rural Finance Specialist –
Input Non Cotton
Constant Dangbégnon, Postdoctoral Scientist – Social Science/Agronomy – KKM
Kokou Koumagli Djagni, Cluster Advisor, 1000s+¹
M. Nicaise Dossouhoui, Driver
Galbert Ehouzou, Driver
Denis Gnakpenou, Agronomist, ISFM Specialist – 1000s+
Evelyne A. T. Guidigbi, Research Assistant/Cluster Advisor, 1000s+³
Marie Angèle C. Katary, National Administration and Finance Officer
Michel Kpodanhoue, Driver
Bruno Ouedraogo, Coordinator – Input Non Cotton
Alain Cohovi Soglo, Marketing Specialist, Input Non Cotton
Clarisse Toho, Administrative Assistant

IFDC Burkina Faso

IFDC Burkina Faso
11 BP 82
Ouagadougou 11
BURKINA FASO
Telephone: (226) 50 37 45 03 or 05
Telefax: (226) 50 37 49 69
E-Mail: ifdcburkina@ifdc.org

Staff

Sourabie I. Noubie, Acting Country Representative and Country
Coordinator – WACIP
Isabelle Adzoh-Freitas, Human Resources Manager, NWAfD

Ablassé Serge Barry, Driver
Aziz Boly, National Administration and Finance Officer
Bocar N. Diagana, Policy Economist – MIR Plus
Asseta Diallo, Regional Coordinator Agribusiness Cluster Development – 1000s+
Abou I. Diawara, M&E Specialist – MIR Plus
Bidjokazo Fofana, Postdoctoral Scientist – Coordinator, UDP Initiative
Gustave Kabore, Driver
Moussa Kabore, Marketing Specialist – 1000s+
Salif Kiedrebeogo, Driver/Logistician
Lamine Konfe, Field Technician – NRM Program
Rufine Meda, Secretary-Receptionist
Honoré Moyenga, Assistant Country Coordinator – WACIP³
Jerome Nassa, Janitor
Francine Patricia Nezien, Assistant Accountant
Abel Sana Nikiema, Driver
Palobde E. Nonguierma, National Administration and Finance Officer^{4,1}
Sougalo Sanon, Rice Agronomist – PADL/CLK
Daouda Traoré, Assistant Country Coordinator – WACIP¹
Sansan Youl, System Agronomist – DMP
Zacharie Zida, Ph.D. Research Assistant – IFAD
Issa Zongo, Driver – MIR Plus
Hortense Zoungrana, Accountant

IFDC Chad

IFDC Chad
BP 1823 – Avenue de Behagle
Arrondissement 3, 0005, Rue 3021
N'Djamena
CHAD
Telephone/Fax: (235) 252 4208

Staff

Hamadou Boubakari, Country Coordinator – WACIP
Parfait Koingar, Janitor/Messenger³
Djimasbe Ngaradom, M&E Specialist – WACIP

IFDC Ghana

IFDC Ghana
3, Orphan Crescent, Labone
PMB CT 284, Cantonments
Accra
GHANA
Telephone: (233) 21 78 08 30 / 21 78 60 69
Telefax: (233) 21 78 08 29
E-Mail: ifdcghana@ifdc.org

Staff

S. Kofi Debrah, Chief of Party – MCC Northern Agricultural Zone Project and
IFDC Country Representative, Ghana
Salma Abdulai, M&E Specialist – FTM
Harrison Abu, ICT Specialist
Abdul Halim Abubakari, Tropical Agronomist/Horticulturist¹
Emmanuel Adzam, Driver – FTM
Rowland Aggor, Perishable Trade Advisor – MCA
Alhassan Amadu, Ghana School Feeding Program – Coordinator – SAADA
Kouadio Amavi, ICT Support – GADD and MCA
Frank Ananga, Driver
Paul Yao Anani, Value Chain Linkages Specialist, FTM
Ayaah Emmanuel Annan, Agronomist – MCA and GADD
Patrice H.P. Annequin, Market Information Specialist – MIR Plus
Isaac Kwadwo Asare, Project Leader – GADD
Emmanuel Asiamah, Driver
Benjamin H.K. Atidjah, Business Development and Credit Specialist – MCA and
GADD
Emmanuel Edem Awude, Assistant M&E Specialist – MiDA
Yayra Kofi Bansah, Accountant
Joseph Bapule, Deputy Regional Manager (Secondment – SAARI) – MCA
Dabir David Chimah, Driver – MCA
Victor A. Clotey, Postdoctoral Scientist – Coordinator, AISSA – 1000s+
Birgitta Yaa Adoma Daaku, Technology Transfer Specialist – MIR Plus
Adjowa Alice Dayang, Janitor – MCA and GADD
André de Jager, Program Leader – Agribusiness
Yvonne Kafui Dennis, Bilingual Secretary – Agribusiness Program



Dodji Djagni, Accounts Intern^{6,1}
 Wilson Dogbe, Cocoa Agronomist (Extension) – Abrabopa¹
 Manon M. Dohmen, Coordinator – Special Projects, NWAFFD¹
 Ekwe Dossa, Agronomist (Soil Fertility) – (posted to Lomé, Togo)
 Joël Mafoya Dossoumon, ICT Specialist, Web Editor – TradeNet/AISSA – SAADA¹
 Regine Dupuy, Communications/PRO – 1000s+^{3,1}
 Eunice Ekor, Janitor/Office Assistant
 Judith Fagbegnon-Kodjo, National Administration and Finance Officer
 Kadir Osman Gyasi, Cluster Advisor – 1000s+¹
 Samuel Insaïdu, Driver
 Ibrahim Baba Inusah, Irrigation Advisor (Secondment SAARI) – MCA
 Florence Esi Jonfiah, Administrative Assistant
 Stephen Magsia Kabange, Financial Controller – MCA
 Laar Emmanuel Kinansua, Driver
 Juliet Akweley Kofi, Janitor/Office Assistant
 Alexandra Lydia Koffi, Office Receptionist
 Japhet Nii Ayaa Lartey, Database & Website Specialist
 Malick Ben Idriss Lompo, MIS Specialist – MIR Plus
 Genevieve Mante, Administrative Assistant
 Lavina Masand Mehra, Operations Manager, NWAFFD
 Zecharia Biimi Naandam, M&E Specialist – MCA
 Robert Nettey, Driver
 Abass Karim Nyo, Deputy Manager – FTM
 Asana Osman, Administrative Assistant – FTM
 Robert Owusu, Post-Harvest Advisor (Secondment SAARI) – MCA
 Pius Kyaabe Sanyare, Cluster Advisor – 1000s+
 Osman Damba Tahidu, Business Development Officer – FTM
 Musa S. Taylor, FBO Business Training Coordinator – MCA
 Kenneth Wujangi, Literacy and Numeracy Training Coordinator – MCA²
 Joseph Yambori, Driver

IFDC Mali

IFDC Mali
 BP E103 Badalabougou-Est Fleuve
 Rue 33, Villa Lot #6
 Bamako
 MALI
 Telephone: (223) 44 90 01 22/05 61 / 05 62 (Main building);
 (Building B) – (223) 44 90 13 01 / 02 – WACIP
 Telefax: (223) 44 90 01 21
 E-Mail: ifdc mali@ifdc.org

Staff

Wim van Campen, Chief of Party – 1000s+ and Country Representative, Mali
 Sarah Gavian, Chief of Party – WACIP
 David Benafel, Program Administrator – WACIP¹
 Yves Duplessis, Agribusiness Team Leader – 1000s+¹
 David Galaty, Regional Programs Coordinator – WACIP
 Oulie C. Keita, Postdoctoral Scientist – Bilingual Communications Specialist – WACIP¹
 Mohamed Ali, Rural Finance Specialist – DEB-PEA
 Kodjo Emmanuel Alognikou, Grants Manager – WACIP
 Diahara Berthé, Communications Specialist – DEB-PEA
 Hamza Camara, Assistant/M&E Specialist – 1000s+
 Mahamadou Laryea Cissé, Training Coordinator – DEB-PEA
 Mama Coulibaly, Administrative Assistant³
 Mahamadou Daouaye, MIS Specialist – MIR Plus
 Néné Fatoumata Diakité, National Administration and Finance Officer and Office Manager
 Siriba Diakité-Keita, Janitor – WACIP
 Cheick Oumar Diallo, Administration and Finance Officer – WACIP¹
 Issa Diarra, Driver
 Fatima Dipama, Accountant – WACIP
 Djibril Doucoure, Monitoring and Evaluation Specialist – WACIP¹
 Blaise Fadoegnon, Country Coordinator, Mali – WACIP
 Amadou Gakou, Soil Fertility Initiative Activity Coordinator – DERK II
 Djènèba Keita, Bilingual Secretary – WACIP
 Fatoumata Keita, Research Assistant – 1000s+
 Seydou Keita, Janitor
 Kady Kone-Keita, Assistant Accountant
 Mamy Koita, Agronomist – Field Technician Rice, UDP
 Kodjo Kondo, Monitoring and Evaluation Specialist – 1000s+
 Ibrahim Kouyaté, Assistant Grants Manager – WACIP¹
 Viviane Oumou Maiga, Assistant Secretary – WACIP
 Aissétou Nobre, Cluster Advisor – 1000s+
 Amadou Ouadidje, Assistant Country Coordinator – WACIP

Alassane Samake, Driver
 Haoua Sanon-Kanouté, Administrative Assistant
 Sory Soubatran, Driver
 Blandine Bintou Toure, Janitor
 Ibrahima Touré, Coordinator, Partnership PCDA – IFDC
 Hamidou Traore, Driver
 Youssouf Traoré, Research Assistant – 1000s+³

IFDC Niger

IFDC c/o GAP (NGO)
 BP 10424
 Niamey
 NIGER
 Telephone: (227) 20 74 09 07 / 94 75 40 30

Staff

Ali Aboubacar, Driver – 1000s+
 Ibrahim Beidou Issifou, Research Assistant – 1000s+³
 Garba Mahaman, Cluster Advisor – 1000s+



IFDC Nigeria

IFDC Nigeria
 No. 6/Plot 1413 Ogbagi Close,
 Off Oro-Agu Crescent,
 Cadestral Zone, Garki II
 Abuja
 NIGERIA
 Telephone: (234) 94 13 08 74 or 94 13 08 73
 Telefax: (234) 94 13 00 37
 E-Mail: ifdcnigeria@ifdc.org

Staff

Scott J. Wallace, IFDC Country Representative, Nigeria
 Lapodini Marc Atouga, Policy Economist – MIR Plus
 Georges Dimithè, Project Coordinator – MIR Plus
 Brian Kiger, Project Coordinator – GFSR
 Femi Benjamin Abimbola, Driver – GFSR
 Nura Abba Abubakar, Training & Demonstration Specialist – Cassava+
 Idenyi E. Abudo, Office Receptionist
 Abdullahi Hassan Adamu, Driver
 Samuel Adejoh, Driver – Administration
 Theodora Adebusola Adene, Project Assistant, IFPRI
 Tolulope Adetoro Aderere, Administrative Assistant
 Habibu Zakary Aminu, Technology Transfer Specialist – MIR Plus

Samuel Olorunfemi Baiyeri, Agronomist Southwestern – Cassava+
 Francis N. B. Dabiré, Communications Specialist – MIR Plus
 Abdul-Mojeed Olakunle Dabiri, Credit Specialist – NADS
 Musa Danlami, Organized Farm Group Assistant – Cassava+
 Iliya Bagro Duniya, Cluster Advisor – 1000s+
 Essien Henry Ekpiken, Project Coordinator – AND
 Charles Gamde, Office Assistant – IFPRI
 Ali Adamu Garba, Agronomist – NADS
 Bature Maksason Gyoja, Driver
 Bakari Yahaya Hamajoda, Field Coordinator – GFSR
 Hashim Mohammed Ibrahim, Driver
 Mohammed Ibrahim, Input Specialist – MARKETS
 Idongesit Idong, Secretary
 Kobi P. Ikpo, Communications Specialist – NADS
 Mohammed Mamman Iliya, Extension Officer – Cassava+
 Abigael Bunmi Ipinlaiye, Program Assistant – IFPRI
 Yahaya S. Bello Kura, Technology Transfer Specialist – MIR Plus
 Danjuma Makama, Research Specialist – GFSR
 Ahmad Muhammad Makarfi, Agri-Input Coordinator – MARKETS
 Sunday Mangai, Driver
 Ernest Ebere Mbabie, Demonstration & Trials Specialist – Cassava+
 Emmanuel Zaure Meda, Driver
 Bala Afiku Namu, Driver
 Ikechukwu O. Odiaka, Intern Accounting⁶
 Henrietta Nkechi Obiayo, M&E Specialist – MIR Plus
 Amos Ogah, Janitor
 Sunday Ogah, Janitor
 Blessing Ukoh Oghale, Project Assistant – MIR Plus
 Sunday Paul Ogidi, Association Development Specialist – NADS
 Ademola Taiwo Ogundapo, Agronomist – NADS
 Ayodele Oluwatosin Ogunyemi, National Administration and Finance Officer
 Ikechukwu Odiaka Okolie, Field Accountant – GFSR³
 Eugenie N. Okoye, Project Assistant – GFSR³
 Babatunde Oluwasegun Olaniyan, Senior Research Assistant – IFPRI
 David Oluwasegun Omotayo, Producer Group Assistant – Cassava+
 Onawu Alobi Onawu, Driver
 Vera Ukamaka Onyeaka, Communications Specialist – MIR Plus
 Helen Ijeoma Onyemobi, Assistant Accountant
 Feyikemi Osho, Training Coordinator – GFSR
 Sheu Adekunle Salau, Senior Research Assistant – IFPRI
 Benjamin Echono Samuel, Accountant
 Matilda Nonye Umeji, Administrative Secretary – MIR Plus
 Bello Abba Yakasai, Project Leader – NADS¹
 Hadiza Yaro, Research Assistant – 1000s+³
 Yahaya Yusuf, Driver

IFDC Senegal

IFDC c/o ISRA
 Centre de Recherches Agricoles (CRA)
 B.P. 240
 St. Louis
 SENEGAL
 Telephone: (221) 33961 17 51
 Telefax: (221) 33961 18 91

Staff

Sadibou Gueye, Input Expert – Rice Project/WARDA

IFDC Togo

B.P. 4483
 Lomé
 TOGO
 Telephone: (228) 221 79 71 / 221 72 02 / 222 13 13
 Telefax: (228) 221 78 17
 E-Mail: ifdctogo@ifdc.org

Staff

Abdoulaye Mando, IFDC Country Representative and Program Leader – Natural Resources Management (NRM)
 Jean Mianikpo Sogbedji, Postdoctoral Scientist – Agronomy
 Adodo Sewavi Abalo, Research Assistant – 1000s+³
 Tchilalou E. Abissi, Assistant Secretary
 Ketline M. Adodo, Communications Officer Africa
 Messa Agbedinou, Driver
 Kwame Senyo Agbotame, Administrative Assistant and Logistics
 Kouassi Amegnido, Driver
 Ayayi Apedo-Amah, Librarian
 Yawa Eméfa Atri, Division Director's Secretary
 Fogan Ayikpe-Konou, Driver
 José A. Ayivi-Togbassa, IT, Network Administrator
 Assani Bello Lawani, Human Resources Officer – NWAFFD
 Dodzi Biakou, Office Receptionist
 Binouwé Bitalatam, Bilingual Secretary – NRM
 Ekwé L. Dossa, Agronomist, Soil Fertility – NRM
 Dodji Dovi, Sociologist – SAADA
 Kodjovi Séna Ezui, Agronomist – NRM
 N'Taré Kokouvi Gaglo, IT Support, Computer Maintenance
 Kokou Gayi, Accountant
 Amatevi R. Klutse, Agroeconomist – MIS¹
 Matieyedou Konlambigue, Rural Finance Specialist – 1000s+¹
 Kossivi Koukoudé, Field Technician – NRM
 Kossi Kounoudji, Driver
 Afi Edi Kpogan, Gender Specialist – 1000s+
 Adjowa Lassou, National Administration and Finance Officer
 Komi Moussa, Janitor
 Meg Ross, Graphic and Web Design Specialist
 Udo Rudiger, Postdoctoral Scientist – Cluster Advisor – 1000s+
 Adonko Tamelokpo, Scientist – Agronomy – NRM
 Kwame Wisdom Tenge, Translator
 Amivi M. Tsikplonou, Assistant Librarian



EurAsia Division (EAD)

John H. Allgood, Division Director (based at Headquarters)
Kathy Pannell, Secretary (based at Headquarters)

IFDC Bangladesh

IFDC Bangladesh
Road 54A, House #2, Apt. # 5 and 6
Gulshan 2
Dhaka 1212
BANGLADESH
Telephone: (880) 2 881 7617
Telefax: (880) 2 882 6109
E-Mail: ifdcbangladesh@ifdc.org

Staff

Ishrat Jahan, Scientist Economist and IFDC Resident Representative, Bangladesh, Team Leader USDA UDP Project, Catalyst FMDB Project and Project Coordinator – ILSAFARM
Grahame D. Hunter, Chief of Party – ILSAFARM
Md. Mofizul Islam, Senior Agriculture Specialist, ILSAFARM and Catalyst FMDB
Md. Razu Ahmed, Field Monitoring Officer – ILSAFARM
Md. Sultan Ahmed, Field Monitoring Officer – ILSAFARM
Md. Lokman Ali Akhand, Field Monitoring Officer – ILSAFARM
Quzi Rezwana Akhter, Administrative Officer – ILSAFARM
Md. Mahabub Alam, Field Monitoring Officer – ILSAFARM
Md. Mahbul Alam, Training, Implementation and Monitoring Officer – USDA UDP
Md. Manirul Alam, Field Coordinator – ILSAFARM
Md. Saiful Alam, Training, Implementation and Monitoring Officer – USDA UDP
Md. Shamsul Alam, Agriculture Specialist – USDA UDP
A.K.M Alauddin, Technician – ILSAFARM
Abu Abdullah Al-Musa, Field Monitoring Officer – ILSAFARM
Md. Abdullah Al Zahid, Accounts Officer – ILSAFARM
Md. Abul Kalam Azad, Training, Implementation and Monitoring Officer – USDA UDP
Md. Razaul Karim Bhuiyan, Field Monitoring Officer – ILSAFARM¹
Md. Shafiqul Islam Bhuiyan, Accounts Officer – Catalyst FMDB
Md. Shahidul Haque Bir, Field Monitoring Officer – ILSAFARM¹
Krishna Gopal Biswas, Field Monitoring Officer – ILSAFARM
Md. Bodiuazzaman, Training, Implementation and Monitoring Officer – USDA UDP
AFM Saleh Chowdhury, Chief Accountant – ILSAFARM
Bishnurup Chowdhury, Administrative and Finance Officer
Kh. Makbul Elahi, Field Coordinator – USDA UDP
Md. Nusrat Ferdous, Field Monitoring Officer – ILSAFARM¹
Ram Gopal Ghosh, Mechanical Engineer – ILSAFARM
Md. Zaglul Haider, Field Monitoring Officer – ILSAFARM
Md. Ariful Haque, Field Monitoring Officer – ILSAFARM
Md. Zahidul Haque, Field Monitoring Officer – ILSAFARM
Md. Tariq Hassan, Agriculture Specialist – ILSAFARM
Md. Alamgir Hossain, Data/Word Processor – ILSAFARM
Hemayet Hossain, Office Assistant – ILSAFARM
Md. Iqbal Hossain, Field Monitoring Officer – ILSAFARM
Md. Iqbal Hossain, Training, Implementation and Monitoring Officer – USDA UDP
Khondaker Mir Hossain, Data/Word Processor – USDA UDP
Mosaref Hossain, Field Monitoring Officer – ILSAFARM¹
Md. Nazmul Hossain, Field Monitoring Officer – ILSAFARM
Mohammed Zakir Hossain, Business Management Training Officer – ILSAFARM
Shamim Hossain, Field Monitoring Officer – ILSAFARM
Syed Afzal Mahmood Hossain, Data Management Specialist – ILSAFARM
Syed Arshad Hossain, Field Coordinator – ILSAFARM
Md. Imam Husain, Field Monitoring Officer – ILSAFARM
Mahmood Hussain, Training Specialist – ILSAFARM
Md. Al Mobasher Hussien, Junior Agronomist – USDA UDP
Md. Mydul Islam, Training, Implementation and Monitoring Officer – USDA UDP
Md. Rafiqul Islam, Training, Implementation and Monitoring Officer – USDA UDP
Md. Rafiqul Islam, Training, Implementation and Monitoring Officer – USDA UDP¹
Rubinal Islam, Gender Specialist – ILSAFARM
Shahida Islam, Administrative Officer – Catalyst FMDB
Md. Zahadul Islam, Field Monitoring Officer – ILSAFARM¹
Zahidul Islam, Field Monitoring Officer – ILSAFARM
Khawja Shah Jalal, Field Monitoring Officer – ILSAFARM
Paltu Ranjan Karmaker, Field Monitoring Officer – ILSAFARM
Mohammad Masum Khan, Field Monitoring Officer – ILSAFARM
Sonia Kutubuddin, Fertilizer Sector Coordinator – Catalyst FMDB

Abdul Malek, Data/Word Processor – ILSAFARM
Md. Abdul Mannan Mallick, Training, Implementation and Monitoring Officer – USDA UDP
Md. Shafiqul Islam Manir, Field Officer – FMDB
Majid Miah, Soil Scientist – ILSAFARM
Md. Abul Hossain Mollah, Training Specialist – ILSAFARM
Sanjay Kumar Mondal, Field Monitoring Officer – ILSAFARM¹
Md. Moniruzzaman, Field Monitoring Officer – ILSAFARM
Shariful Alam Mony, Field Monitoring Officer – ILSAFARM
Abu Jafor Muhammad Nur Nabi, Field Monitoring Officer – ILSAFARM
Md. Abu Naser, Training, Implementation and Monitoring Officer – USDA UDP
A.K.M. Ashadur Rahman, Training, Implementation and Monitoring Officer – USDA UDP
Khan Ataur Rahman, Training, Implementation and Monitoring Officer – USDA UDP
Mahbubur Rahman, Field Officer – Catalyst FMDB
Md. Mustafizur Rahman, Training, Implementation and Monitoring Officer – USDA UDP
Mohammad Masu Rana, Training, Implementation and Monitoring Officer – USDA UDP¹
Muhammad Masud Rana, Training, Implementation and Monitoring Officer – USDA UDP
Md. Aminur Roshid, Training, Implementation and Monitoring Officer – USDA UDP
Md. Abdur Rouf, Training, Implementation and Monitoring Officer – USDA UDP
Sangita Roy, Assistant Accountant – ILSAFARM
Md. Abu Sayed, Training, Implementation and Monitoring Officer – USDA UDP
Md. Mojammel Shaikh, Field Monitoring Officer – ILSAFARM
Abu Bakr Siddique, Training, Implementation and Monitoring Officer – USDA UDP
Abu Nadir Shahab Uddin Ahmed Siddique, Field Monitoring Officer – ILSAFARM¹
Bimal Krishna Sikder, Field Monitoring Officer – ILSAFARM
Nahid Yasmin, Data Analyst – ILSAFARM



IFDC Kyrgyz Republic

IFDC Kyrgyz Republic
Bishkek Office
219/1, Moskovskaya Str.
Bishkek
KYRGYZ REPUBLIC
Telephone: +996 (312) 343531
Telefax: +996 (312) 343532
E-Mail: hdemiri@ifdc.org

Osh Office
323, Lenin Street
Osh
KYRGYZ REPUBLIC
Telephone/Fax: +996 3222 57774

Staff

Hiqmet Demiri, Chief of Party – KAED II
Ubaidulla Abdullaev, Agronomy and Animal Husbandry Manager
Niyara Alakhunova, Finance and Administrative Manager
Kanyim Asanakunova, Office Manager/Logistical Officer
Arsen Aslanov, Business Development Specialist
Daniya Baisubanova, Public Relations/Outreach Specialist
Dalil Batyrov, Program Assistant
Guljamal Chokmorova, Southern Area Coordinator
Djahongir Djumabaev, Education Program Manager/Government Liaison Officer
Alisher Kasymov, General Manager
Vasiliy Kim, Driver
Sergey Lyapin, Driver
Maksatbek Mamytbekov, Animal Husbandry Specialist
Jyrgal Musaev, Agronomist
Jyldyz Niyazalieva, Public Relations Assistant

IFDC Tajikistan

IFDC Tajikistan
ACDI/VOCA Office
Tolstoy Street, #66
Dushanbe
TAJIKISTAN 734003

Staff

Ylli Biçoku, Input Supply Advisor
Husnidin Kuziboev, Training and Agronomy Specialist
Sulhiya Rashidbekova, Office Manager and Procurement Specialist¹
Rano Rustamova, Communications Specialist
Jumaboy Shomurodov, SME Specialist
Lola Ukumatshoeva, Office Manager and Procurement Specialist

¹Left during 2009/10.

²Retired during 2009/10.

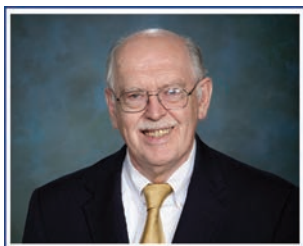
³Short-term staff 2009/10.

⁴On extended leave.

⁵Deceased 2009/10.

⁶Student Attachment.

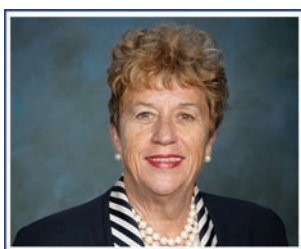
Board of Directors



M. Peter McPherson
Chairman of the Board
President, Association of Public and
Land-Grant Universities
United States



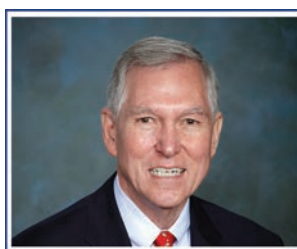
G.J. Doornbos
Vice Chairman of the Board
President, Rijnland District Water
Control Board
Chairman of the Board, Agri-Profocus
The Netherlands



Margaret Catley-Carlson
Patron
Global Water Partnership
Canada



Soumaila Cissé
Chairman
West African Economic and
Monetary Union (UEMOA)
Mali



Dr. John B. Hardman
President and CEO
The Carter Center
United States



Dr. Osamu Ito
Director, Crop Production
and Environment Division
Japan International Research
Center for Agricultural Sciences
Japan



Dr. Agnes M. Abera-Kalibata
Minister of Agriculture and Animal
Resources
Rwanda



Patrick J. Murphy
Director and Manager (Retired)
International Private
Banking Office
Bank of America
United States



Dr. Mortimer Neufville
Chairman of the Board
ACDI/VOCA
United States



Rhoda Peace Tumusiime
Commissioner for Rural
Economy and Agriculture
African Union
Uganda



Dr. Vo-Tong Xuan
Vice President for Academic
Affairs
Tan Tao University
Vietnam



Dr. Amit H. Roy
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

Financial Highlights

The following is a summary of financial information for the year ended December 31, 2009. The full financial statements and the independent auditors' reports are available from IFDC upon request.

	US \$'000
Balance Sheet - For the year ended December 31, 2009	
Assets:	
Cash and cash equivalents	11,704
Restricted cash	2,037
Contribution receivable	2,275
Contracts receivable, net of allowance for doubtful accounts	4,652
Other receivables	814
Supplies inventory	114
Prepaid expenses and advances	1,953
Total Current Assets	23,549
Buildings and equipment, net	168
Contributions receivable, noncurrent	
Total Assets	23,717
Liabilities and Net Assets:	
Accounts payable	2,003
Accrued annual and sick leave	1,143
Deferred revenue	15,782
Other liabilities	2,037
Total Current Liabilities	20,965
Unrestricted Net Assets	2,744
Permanently Restricted Net Assets	8
Total Liabilities and Net Assets	23,717

US \$'000

Statement of Revenues and Expenses - For the year ended December 31, 2009	
Revenues and Support:	
Agriterra	2,386
Alliance for a Green Revolution in Africa	2,281
Chemonics International Inc.	1,060
CORAF/WECARD	377
Royal Embassies of the Netherlands	9,680
Government of Bangladesh	549
International Crop Research Institute for the Semi-Arid Tropics	451
International Fertilizer Industry Association	150
International Fund for Agricultural Development	565
Millennium Development Authority	1,126
National Programme for Food Security - Nigeria	1,104
Netherlands Minister for Development Cooperation (DGIS)	5,738
The Africa Rice Center	387
The Fertilizer Institute	163
The William and Flora Hewlett Foundation	569
Shell Canada Limited	1,891
U.S. Agency for International Development	12,846
U.S. Department of Agriculture	218
Others	2,651
Total Revenues and Support	44,192
Expenses:	
Research and development	2,341
Agribusiness	19,687
Natural resource management	6,556
Capacity building	8,767
Support activities	6,099
Total Expenses	43,450
Increase in Unrestricted Net Assets	742

Revenue Sources

ACDI/VOCA
African Development Bank
Agriterra
Agrium Inc.
Alliance for a Green Revolution in Africa (AGRA)
ARD, Inc.
BARIVEN, S.A.
Bill & Melinda Gates Foundation
Chemonics International, Inc.
Common Fund for Commodities (CFC)
CORAF/WECARD, Senegal
Croplife Africa Middle East (CLAME)
Developing Business Services Markets
(DBSM), Bangladesh
Esoko Networks Ltd.
Food and Agriculture Organization (FAO)
Forum for Agricultural Research in Africa (FARA)
Georgia Pacific Resins, Inc.
Government of Bangladesh
Government of Burkina Faso
International Crops Research Institute for the
Semi-Arid Tropics (ICRISAT)
International Fertilizer Industry Association (IFA)
International Food Policy Research Institute (IFPRI)
International Fund for Agricultural Development (IFAD)
International Plant Nutrition Institute (IPNI)
International Potash Institute (IPI)
Jacobs Engineering
Millennium Development Authority (Ghana)
MITCO Sdn Bhd
National Programme for Food Security – Nigeria
Netherlands Directorate-General for International
Cooperation (DGIS)
New Mexico State University
Petroleo Brasileiro S.A.
Projet d'Appui à la Gestion de Forêts Communales
(PAGEFCOM) – Government of Benin
Royal Netherlands Embassies in Rwanda, Benin, Ghana
and Mali
Shell Canada Energy
Taraba State Government, Nigeria
The Africa Rice Center (WARDA)
The Fertilizer Institute (TFI)
The Sulphur Institute
Uhde GmbH
U.S. Agency for International Development (USAID)
U.S. Department of Agriculture (USDA)
Unity Envirotech
University of Georgia
University of Michigan
William and Flora Hewlett Foundation
World Bank

Photography Credits

Front Cover

Meg Ross

Page 8-9

Scott Mall

Page 12

Serena Polverigiani

Page 13

Oulie Keita

Page 15

Ron Smith

Page 16

Ross Everson

Page 20

Patrice Annequin

Page 24

Middle Photo - Meg Ross

Page 26

The Destiny (Bangladesh)

Pages 28-29

Daniya Baisubanova

Page 30

Meg Ross

Page 32

Tom Hargrove

Page 33

Meg Ross

Page 34

Cathy Basham

Page 36

Paul Makepeace

Page 38

Ron Smith

Page 41

Feisal Beig

Page 48

Ron Smith

Page 49

Scott Mall

Page 51

Meg Ross

Page 54

Paul Makepeace

Page 57

Photo of Rhoda Peace Tumusiime
IISD/Earth Negotiations Bulletin

All Other Photography

© IFDC Photo Files

Copy

Scott Mall, Lisa L. Thigpen, Clyde Beaver, Heather Gasaway and Courtney Greene

Editor

Scott Mall

Design

Heather Gasaway and Scott Mall

Graphics/Photography Research

Donna Venable and Heather Gasaway

Research

Heather Gasaway, Courtney Greene, Scott Mall, Lisa L. Thigpen and Donna Venable

Printing

Ebsco Media

IFDC
Circular IFDC S-33
ISSN-1536-0660
August 2010
3.5 M



P.O. Box 2040
Muscle Shoals, AL 35662 USA
Phone: +1(256) 381-6600
Fax: +1(256) 381-7408
www.ifdc.org