

**IFDC**

# Report

An update on the work and progress of IFDC

## VFRC Focus - Global Food Security and Environmental Protection

The inaugural meeting of the Board of Advisors of the Virtual Fertilizer Research Center (VFRC) was held at the World Bank in Washington, D.C. (See page 2 for a list of members of the Board of Advisors.) The advisors strongly endorsed the Center and its purpose and pledged their individual and collective efforts to make it successful.

The VFRC is a global research initiative organized by IFDC. Under the direction of its Board of Advisors, the VFRC will coordinate and oversee the creation of the next generation of fertilizers and production technologies. Initial financial support for the VFRC was provided by the U.S. Agency for International Development. Additional funding sources will be sought going forward.

New and improved fertilizers are critical elements in the effort to help feed the world's growing population, provide sustainable global food security and protect the environment. Dr. Jimmy Cheek, chancellor of the University of Tennessee (USA) and chair of the VFRC Board of Advisors, began the meeting by stating, "The need for new and innovative research is a global issue and thus requires a global solution. The VFRC can develop a new suite of crop nutrients that will revolutionize agriculture in the developing world."

According to Dr. Amit H. Roy, IFDC president and CEO, "The world struggled with food, fertilizer and fuel price crises in 2008 that included dramatic price swings and shortages. The crises have temporarily abated – largely due to the global recession. However, since the underlying causes remain, it is likely that these problems will re-emerge with economic recovery."

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# VFRC

Virtual Fertilizer Research Center



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**Sustainable Energy  
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in the Albertine Rift (SEW)**

**Cotton Boosts Food  
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IFDC is a public international organization, governed by an international board of directors with representation from developed and developing countries. The nonprofit Center is supported by various bilateral and multilateral aid agencies, private foundations and national governments.

IFDC focuses on increasing and sustaining food security and agricultural productivity in developing countries through the development and transfer of effective and environmentally sound crop nutrient technology and agribusiness expertise.

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*Additional information about each member of the Board of Advisors can be found on the IFDC website.*

## USAID Mission Director Pleased with Pilot Project Results in Southern Kyrgyzstan



(Left to right) Allodin Joldoshev, Kadamjai district chief of the Agrarian Development Department; Aidarali Asamidinov, deputy governor of Batken province; and Andrew Sisson, USAID mission director, tour a plot of abandoned land that is scheduled for rehabilitation under the MJAI pilot project.

The U.S. Agency for International Development (USAID) mission director, Andrew Sisson, met recently with farmers in the Markaz rural municipality, Batken province, southern Kyrgyzstan. The farmers are direct beneficiaries of USAID’s Markaz Joint Agro-Initiative (MJAI) pilot project to rehabilitate abandoned land. The Kyrgyz Agro-Input Enterprise Development (KAED II) project played a substantial role in this initiative. The project demonstrated that high yields of barley and alfalfa can be achieved from unused, stony land through advanced growing techniques, new seed varieties, timely application of fertilizers and irrigation. Nearly 52 tons of barley and alfalfa were harvested from that land, generating more than US \$16,000 in revenues for the local farmers.

Sisson was pleased with the crop yields achieved and was interested in the farmers’ plans for the future, which include growing fruit crops on additional rehabilitated land. Farmer Ibragimova Kantaym expressed gratitude to USAID and project implementers for helping rehabilitate lands that had not been used for the last 15 years. “Thanks to the project, we produced high yields of barley and alfalfa and we will continue producing similar yields of perennial crops from this land during the next five to six years,” Kantaym said. USAID’s successful implementation of the MJAI project serves as a model for other rural municipalities to adopt recommendations that will increase agricultural production and other benefits for farmers.

## Urea Deep Placement (UDP) Success Continues in Bangladesh



Farmers weeding UDP plots near Shariatpur, Bangladesh.



Briquette producer in Shariatpur with Dr. Tom Thompson, IFDC senior scientist – sociology.



Bangladesh farmer who uses UDP and Dr. Tom Thompson at a UDP demonstration field in Madaripur, Bangladesh.

# USAID Provides Urgent Agricultural Assistance to Kyrgyz Republic

Political events this year in Kyrgyzstan have created potential problems for agricultural productivity during the upcoming harvest season. At the request of the Kyrgyz Ministry of Agriculture, USAID provided seeds and fertilizers worth \$150,000 to address the immediate needs of Kyrgyz farmers. The donation was procured by USAID's Kyrgyz Agro-Input Enterprise Development (KAED II) project, implemented by IFDC.

The assistance consisted of 100 metric tons (mt) of spring wheat elite seed, 100 mt of spring barley elite seed, 40 mt of corn seed and 100 mt of compound fertilizers. The seed and fertilizers are being delivered and distributed free of charge to areas where the need is greatest.

Kubat Kaseyinov, minister of agriculture of the Kyrgyz Republic, receives symbolic bags of seeds from Tatiana C. Gfoeller, U.S. ambassador to the Kyrgyz Republic. ▶



## RDD



## University of Georgia Professor Gerrit Hoogenboom Conducts Seminar at IFDC Headquarters

◀ *Long-term collaborative partner on numerous projects*

Dr. Gerrit Hoogenboom, of the University of Georgia's Department of Biological and Agricultural Engineering, conducted a seminar at IFDC headquarters on February 19. His topic was "The Southeast Climate Consortium: Supporting Agricultural Decision-Making in a Variable Climate."

The consortium includes the University of Georgia, University of Florida, Florida State University, University of Miami, Auburn University, University of Alabama – Huntsville, North Carolina State University, Clemson University and IFDC.

Hoogenboom has had a long collaborative history with IFDC. He has partnered with IFDC on the continuing development of the Decision Support System for Agrotechnology Transfer (DSSAT) modeling system. He is working with Dr. Upendra Singh, IFDC principal scientist – systems modeling (soil fertility), on rice, nitrogen and phosphorus; Dr. Philip Thornton on economic applications; Dr. Paul Wilkens, IFDC scientist – programmer, on systems applications; and Dr. Walter Bowen on soil organic carbon. In addition, Hoogenboom and the University of Georgia have co-sponsored numerous modeling training programs with IFDC around the world. Wilkens and Singh are now working with Hoogenboom as collaborators in the Southeast Climate Consortium (SECC), developing a geographic information system (GIS)-linked crop modeling system and improving the phosphorus and potassium sub-modules of the Cropping Systems Model (CSM).

"The mission of the Southeast Climate Consortium is to use advances in climate sciences, including improved capabilities

to forecast seasonal climate and long-term climate change, to provide scientifically sound information and decision support tools for agricultural ecosystems, forests and other terrestrial ecosystems and coastal ecosystems of the southeastern United States. As a multi-disciplinary, multi-institutional team, the SECC conducts research and outreach to a broad community of potential users and forms partnerships with extension and education organizations to ensure that SECC products are relevant and reliable," according to the organization's website ([www.seclimate.org](http://www.seclimate.org)).

Hoogenboom talked about working with anthropologists to learn how farmers make decisions. The purpose was to design a website ([www.agroclimate.org](http://www.agroclimate.org)) that would allow farmers to find information that will help them access weather and climate information, make management decisions about variety selection, planting dates, acreage allocation, pest management and amount and type of crop insurance. The website would also help farmers with risk-reducing options, crop simulations and forecasting agricultural water demand for 2011 to 2050.

Wilkens joined Hoogenboom as faculty for a DSSAT 2010 international training program presented by the University of Georgia and the International Consortium for Agricultural Systems Applications. The May 2010 workshop discussed DSSAT Version 4.5, which assesses crop production, nutrient management, climatic risk and environmental sustainability with simulation models.

# Sustainable Energy Production Through Woodlots and Agroforestry in the Albertine Rift (SEW)

The “Sustainable Energy Production through Woodlots and Agroforestry in the Albertine Rift” (SEW) project, financed by the Dutch Embassy in Rwanda and implemented by IFDC, was initiated on January 16, 2009. SEW activities were designed to be integrated with the Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST) project (also funded by the Dutch Embassy).

The two projects share the goal of agricultural intensification through the improvement of soil fertility management, product marketing and promoting the successful combination of food and energy production.

SEW complements CATALIST’s food production goals by adding two components – private woodlots and agroforestry for energy production at the farm level. Processing and marketing of both agricultural and wood products will be handled through more efficient value chains involving mutually beneficial multi-sector partnerships. Gender issues and the involvement of women in the identification of efficient constraint resolutions are being validated by the projects.

SEW is being implemented in close proximity to CATALIST’s activities in Burundi, the Kivu provinces in the Democratic Republic of Congo (DRC) and in Rwanda. SEW activities are contributing to a sustainable solution for energy shortages that threaten human life and biodiversity in the heart of Central Africa’s Great Lakes Region (CAGLR), the Albertine Rift. These activities that promote economic development will be implemented in the buffer zone around protected areas and will significantly reduce population pressure on the protected areas.

The project promotes sustainable energy production based on reforestation and on professionalization of the fuel wood and charcoal sectors. Within the CAGLR, 90 percent of households and 95 percent of the population depend on fuel wood and charcoal for energy (e.g., cooking). This need for fuel wood has led to extreme deforestation in the region.

The overall objective of SEW is to improve the availability of and access to sustainable energy in the Albertine Rift. Three project-specific objectives have been formulated:

1. Increased fuel wood production through efficient on-farm woodlots and agroforestry systems.
2. Improved firewood and charcoal value chains.
3. Improved enabling environment for the development of the fuel wood sector.

Numerous activities to address each of the objectives were implemented in year one of the project:

- Tendering for tree planting activity with extensive manual labor employment opportunities.
- Establishment of reforestation on 347 hectares (ha) in North Kivu, including 159 ha near the Virunga National Park.
- Identification of regional seed producers and procurement of 1,054 kilograms (kg) of tree seed for planting in 2010 (year two of the project).



SEW carbonization training session – southern Burundi. ▶

- Field visits followed by national and regional stakeholder workshops to explain the value chain concept and its application to the fuel wood and charcoal industry and to help identify progressive entrepreneurs/stakeholders interested in participating in value chain activities in each country and province.
- 15 charcoalers organized and invested \$500 startup capital for their new association following a workshop on carbonization in Burundi.
- The introduction of improved stoves will lead to more efficient energy consumption. The project has already assisted a large charcoal consumer to reduce monthly consumption by 43 percent.
- Significantly increased the incomes of a group of woodlot owners in Burundi by 250,000 FBu (US \$206). Approximately 68 percent of the population live below the poverty line, established at about \$1.04 per day (World Bank), and nearly 88 percent live on less than \$2 per day.
- A training module on improved efficiencies in charcoal production was prepared and trainers for “training of trainers” were identified.
- A communication plan for the project was adopted, including design of:
  1. Awareness campaigns to address the misconceptions that tree planting is only for environmental protection and that professionalization of the charcoal sector is not equivalent to promoting deforestation.
  2. Promotional campaigns for use of improved stoves.
  3. An advocacy plan for supporting CATALIST efforts that smallholder farmers have access to land, particularly in DRC.

To learn more about the SEW project, visit the IFDC website, [www.ifdc.org/Projects/Current/CATALIST-SEW](http://www.ifdc.org/Projects/Current/CATALIST-SEW).

# Project Highlight: Extending Agro-Input Dealer Networks (EADN)

The EADN project is improving access to modern production technologies and yield-enhancing agricultural inputs such as fertilizers, improved seeds and crop protection products (CPPs) for smallholder farmers in Kenya, Tanzania and Uganda. EADN is strengthening the capacity of agri-input dealers and expanding dealer networks to better serve rural farmers. The three-year project is funded by the International Fund for Agricultural Development (IFAD).

Agro-dealers play a key role in linking smallholder farmers to input and output markets. EADN is increasing the knowledge of small-scale, entrepreneurial agro-dealers in the project area so that they can provide improved technical advisory services to farmers.

The project is also helping these agro-dealers develop and implement strategic marketing campaigns and participate in cost-effective decision-making processes that lead to reduced transaction costs.

EADN is a market-oriented initiative emphasizing private sector development and investment in all segments of the agri-input value chain. Expanding the number of agro-dealers and farmers served should generate volume price discounts.

Agri-input prices can be reduced through procurement efficiencies, improved product selections, timely physical distribution and in operating efficiency improvements. EADN is implementing targeted training programs, product demonstrations and the development and distribution of leaflets and posters on the safe use and handling of agri-inputs. EADN's key project areas include:

- Strategic assessment monitoring – market situation reports, opportunity analysis, potential for collaborative activities among partners, dealer network mapping and project impact analysis for more remote farmer locations.



Tanzanian farmer inspects sunflower crop on field day.

- Human capacity building – develop training materials/programs, training of trainers and field agent personnel and association-building activities.
- Technology transfer – use of portable soil testing kits and efficient use of improved seed, fertilizers and CPPs.
- Market transparency and business linkage development – regional training programs and study tours and facilitation of linkages at multiple levels of the value chain.

## Farmer Savings and Sustainable Food Security in Mozambique

According to the World Bank, only one in five Africans has a bank account, and those that do typically reside in urban areas with better access to banks. This leaves the majority of rural farmers without accounts and thus without savings to invest in agricultural inputs or household necessities.

The “Savings, Subsidies and Sustainable Food Security” pilot project studies the effects of savings match incentives on farmers’ willingness to create and sustain bank-held savings. The objective is to provide the means for farmers to self-finance investments in fertilizer and improved seeds, thereby increasing crop production and living conditions. Key assessments of the experiment include farm output, household consumption and other short- and long-term household indicators.

The pilot includes 400 households in Chua, Penhalonga and Chadzua villages. They were chosen because of the area’s widespread irrigation of maize, making these farms less susceptible to recent droughts, and eliminating potential data anomalies.

Access to existing Banco Oportunidade de Mocambique bank branches was also a factor.

Two farmer test groups are being studied. One group receives individual matched savings of 50 percent based on minimum deposits. The other is offered group-matched savings that combine 25 percent of individual savings and 25 percent of group savings.

Following the pilot, a full-scale field experiment will be implemented in the next cropping season. It will involve 2,000 farmers and will study the impact of fertilizer subsidies; the interaction of fertilizer subsidies and savings; and the impact of savings facilities and savings matches.

Funded by the U.S. Agency for International Development, the pilot is implemented from March through November 2010 and is a collaboration of IFDC, the BASIS Assets and Market Access Collaborative Research Support Program (University of Wisconsin) and the University of Michigan.

# VFRC Board of Advisors Focuses on Future *(Continued from Page 1)*

IFDC created the VFRC as the most rapid, economical way to tap the world's intellectual capacity to generate this critically needed fertilizer research. Roy added, "The Center will partner with universities, public and private research laboratories and the global fertilizer and agribusiness industries to bring together the best scientific, business and government minds to create a research system producing more food with fewer wasted resources and a reduced environmental impact."

With severe population, economic and environmental issues, the world cannot afford the current level of inefficiency in fertilizer production and use. It is estimated that 40-50 percent of the food consumed worldwide results directly from the use of (or benefits of) fertilizers. Nitrogen is one of three key nutrients, along with phosphorus and potassium, found in fertilizers. Yet, only about one-third of the nitrogen fertilizer applied to crops in developing countries is utilized due to inefficiency in application methods and the inherent properties of current nitrogen products. Farmers are burdened, paying for three times as much nutrient as their crops absorb. But that does not account for the total cost. The unused fertilizer does not disappear but often becomes an environmental pollutant, either in the form of potent greenhouse gas or runoff that fouls streams and lakes.

The production of one ton of urea, the predominant nitrogen fertilizer product, requires the energy equivalent of four barrels of oil. At the same time, inefficiencies in production and use result in less than 30 percent of the phosphate mined to produce phosphorus fertilizer ever becoming a part of the food chain. Yet, over the past 25 years, no "new" efficient fertilizer product has been developed – particularly no product affordable for use on food crops by farmers in less-developed countries.

The world food supply has managed to stay ahead of rising population due to increasing productivity and a modest expansion of cultivated area. However, non-renewable resource reserves (such as phosphates and potash), increasing energy costs, the growing cost to the environment when

bringing more land under cultivation and pollution pose new challenges. Fertilizer research and development can make a major contribution in addressing the challenges faced by the developing – and developed – nations.

Going forward, global food security will depend on a focused effort to improve soil fertility and increase productivity of food crops, and fertilizer plays a major role. The production and use of current fertilizer products must be improved. Recent advances in nanotechnology and biotechnology open new opportunities for collaborative research between the public and private sectors. The Board of Advisors called for the VFRC to focus on the following:

- Improve efficiency throughout the agricultural value chain, and in a manner that reduces costs for smallholder farmers.
- Ensure that new products and methods are adopted as quickly as possible.
- Consider the value proposition for new products to demonstrate the return on investment to each part of the value chain.
- Seek potential offsets from new, higher efficiency products (i.e., a reduction in nitrate in groundwater may lower the cost to treat water for human consumption).
- Focus on technologies that make more efficient use of water and are better for the environment.
- Consider alliances with both the upstream and downstream industries in agriculture.

The next meeting of the VFRC Board of Advisors is scheduled for September 2010.

## Dr. Amit Roy Is Guest Lecturer at Alabama A&M



IFDC's president and chief executive officer, Dr. Amit Roy, was invited to be the Morrison, Thomas and Hobson guest lecturer at Alabama A&M University in Huntsville, Alabama, on April 27.

The lecture is the inaugural event of the annual School of Agricultural and Environmental Sciences Week. The lecture honors three individuals whose leadership

made a significant impact on A&M – Dr. Richard Morrison, Dr. Winfred Thomas and Dr. Abigail Hobson. Dr. Roy's presentation focused on the "New Generation of Fertilizers for Feeding the World."

The presentation included information about the history of fertilizer development, global food production, the Virtual Fertilizer Research Center and a call to action for each person to take responsibility to help find solutions for the pending world food crisis.

# Nigeria Voucher Program Expanded Into Four States



Nigerian farmers display voucher identification cards.

IFDC is providing fertilizer vouchers to more than 350,000 smallholder farmers in four Nigerian states through the expanded 2010 Nigeria Fertilizer Voucher Program. This follows the success of the 2009 program, in which nearly 200,000 farmers in two states gained access to subsidized fertilizer.

IFDC is implementing the program in collaboration with federal and state governments, state extension agencies, the Nigerian National Food Reserve Agency, the National Program for Food Security, the Nigerian Bureau of Statistics, fertilizer companies, the U.S. Agency for International Development and smallholder farmers.

Voucher programs help smallholder farmers access agricultural inputs while simultaneously building business opportunities

## IFDC Launches Revamped Website

The new and improved IFDC website ([www.ifdc.org](http://www.ifdc.org)) was unveiled on June 14. The new website was developed by IFDC's Information and Communications Unit.

Heather Gasaway is IFDC's webmaster. Keystone Business Solutions in Hendersonville, Tennessee, is responsible for web development.

IFDC is responsible for the web content; all of the existing material on the site has been re-written and new material has been

added. The interactive site offers a calendar of events, current and updated news, photo galleries, success stories, videos of staff members and project beneficiaries, Twitter and Facebook links and RSS feeds.

Each IFDC division and project has its own web page and updates will be made on a regular basis. Press kits and other information for media are also available.

The federal government of Nigeria implemented a fertilizer subsidy of 25 percent in 1999, and many state governments also added their own subsidies. Because fertilizer has been subsidized to such a degree and distribution controlled by state entities, there has been no incentive for the private sector to build an input distribution system. However, due to systemic transparency and accountability issues, fertilizer often fails to reach those who need it the most – Nigeria's smallholder farmers.

The federal government announced that it intends to withdraw from fertilizer procurement in 2010. To facilitate a smooth transition and ensure that fertilizer reaches targeted beneficiaries, the federal and state governments of Nigeria requested IFDC's help in leading a large-scale voucher program in Kano and Taraba states during 2009.

IFDC is now expanding the program to four states – Bauchi, Kano, Kwara and Taraba. It is hoped that the program will expand to a fifth state (Kaduna) in 2011. In Kaduna, IFDC is working to identify and target an additional 100,000 smallholder farmers who will receive state-discounted fertilizers via the traditional state depot system. Targeted crops in the four states participating in the 2010 voucher program include maize, millet, rice, sorghum and soybean.

Overall, the 2010 voucher program continues to introduce a more economic 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. Kano state is a good example because the state utilized data provided by IFDC's 2009 program to distribute seeds and crop protection products to targeted farmers. The adoption of the program by the individual states is a key element to the program's sustainability.

# Cotton Boosts Food Security in the C-4 Countries

Cotton is the heart of agricultural and rural development in Benin, Burkina Faso, Chad and Mali. These countries are known as the Cotton-4 (C-4). Millions of smallholder farmers in the C-4 countries depend on cotton as their primary source of employment and income. Cotton production not only supports individual income growth but also boosts food security in these countries.

The West Africa Cotton Improvement Program (WACIP) is a multi-year project funded by the U.S. Agency for International Development (USAID) and implemented by IFDC. WACIP has boosted the productivity and profitability of the cotton sector in the C-4 countries.

WACIP has been working with farmers, researchers, input distributors, cotton companies, inter-professional associations and textile artisans. The project focuses on promoting best agricultural practices to improve yields, building research capacities, supporting the ginning sector and training artisans to access regional and international markets.

Pauline Simmons, the U.S. Department of Agriculture (USDA) regional coordinator for Africa, recently visited one of WACIP's 42 demonstration fields in Mali's Sikasso region. "After my visit with Malian farmers, I recognize the importance and challenges of the cotton sector and its contribution to food security, especially since staple food crops, such as maize and sorghum, lean on cotton for production inputs and services," Simmons said. "That

is why the U.S. government is working with the C-4 countries at all levels to address their concerns. In the field, I saw farmers motivated by the desire for change and I am quite impressed with the results of WACIP-supported activities."

According to Zagaye Sissoko, production division chief for the Compagnie Malienne des Textiles (CMDT) in Sikasso, the WACIP-supported demonstration farms are key instruments of change in the cotton zones. "CMDT promotes crop diversification for food security, as part of its integrated cotton development strategy," Sissoko said. "Partnering with WACIP makes a great difference in the field. The ripple effect of WACIP-supported demonstration farms is already visible. More and more farmers are adopting WACIP packages." WACIP's extensive capacity-strengthening component has allowed CMDT to train hundreds of extension agents and provide hands-on training to thousands of farmers.

Amadou Ouadidjé, assistant country coordinator for WACIP in Mali, explained that the cotton companies provide the inputs, technology, infrastructure and services that farmers need to intensify cereal production on their other fields. "Any evaluation of returns on cotton must consider cereal as well."

WACIP has also helped the Malian cotton farmers' association train more than 5,600 cooperative leaders to better calculate their input requirements and how to manage credit for both cotton and food crops.

*(Continued on Page 10)*

Showing USDA Regional Coordinator Pauline Simmons (second from right, front row) one of WACIP's 42 demonstration fields in Mali's Sikasso region are (back row, left to right): Sarah Gavian, Adama Koumaré, Amadou Ouadidjé, Abdrahamane Koné and Blaise Fadoegnon. Front row (from left): Baou Diané, Sekou Keita, Simmons and Manoela Borges.



# Cotton Boosts Food Security *(Continued from Page 9)*

According to Blaise Fadoegnon, WACIP country coordinator in Mali, "The cotton producer can order appropriate inputs from the cotton company for both his cotton and cereal fields, or he can try to minimize costs by officially declaring only his cotton area and then diverting some of those inputs to his cereal fields." WACIP dissuades farmers from choosing the latter, which leads to low yields for both cotton and food crops.

Effects of this training are evident, according to Hamidou Diarra, first secretary of the Cooperative of Cotton Producers of Siani, a village in the Sikasso region. "We were working for practically nothing – no profit, only debt! But after the last cropping season, everyone was able to pay back their loans and there was money

left over. There were 42 farmers in our cooperative. After seeing how well we have done, 20 more farmers have recently joined."

Dr. Sarah Gavian, WACIP chief of party, emphasizes that cotton farmers should have more choices. "They should not have to grow cotton just to get the inputs and extension services they need to grow food crops. Instead, Malian farmers need efficient access to agricultural credit and strong input and food crop marketing systems. This effort may cause farmers to decrease cotton crops acreage, but with higher cotton yields on less land and profits to match, farmers can use the extra land for food crops."

## IFDC Facilitates Fertilizer Recommendation Workshop in West Africa

On April 6-7, 2010, IFDC's MIR Plus project and Natural Resource Management (NRM) Program facilitated an orientation and planning workshop for updating fertilizer recommendations in West Africa. The West and Central African Council for Agricultural Research and Development (CORAF/WECARD) collaborated with IFDC on the workshop, which was held in Ouagadougou, Burkina Faso. This was an Economic Community of West African States (ECOWAS) and West African Economic and Monetary Union (UEMOA) regional event. The purpose of the workshop was to develop and mobilize regional scientific capacity to support the updating of major crop fertilizer recommendations in the region. About 60 participants from the ECOWAS Member States, representing the National Agricultural Research System (NARS), regional and sub-regional organizations and West African farmers, attended the workshop.

Dr. Lompo François, deputy director general of the National Institute for Environment and Agronomic Research (INERA), chaired the opening ceremony of the workshop. He said, "To facilitate the adoption of fertilizers by smallholder farmers, agronomic effectiveness must increase. This requires more appropriate and timely applications and farming practices to improve the amount of organic nutrients in soils. Fertilizer recommendations must also take into account agricultural practices and propose optimal doses based on fertilizer prices and targeted speculations."

For decades, recommendations for fertilizer use in all West African countries have been uniform throughout each country for each crop. As a result, the recommended doses are not adapted to specific local bio-physical and/or socio-economic agricultural production conditions and are often not profitable. Few farmers have actually adopted these outdated

recommendations. After more than three decades of cropping, the amount of nutrients in soils has changed and so have crop varieties, yield expectations and relative prices. This joint ECOWAS/UEMOA initiative is based on the observation that fertilizer recommendations must be updated and tailored to fit each individual crop and soil type.

The regional workshop enabled ECOWAS and UEMOA to: (1) make an inventory of past or current initiatives on this issue in the Member States; (2) share experiences, particularly those from the Alliance for a Green Revolution in Africa (AGRA) on its Soil Health Program and the modeling approaches of IFDC's NRM Program and their applications in various countries and on some major crops; (3) facilitate a broad discussion on the current fertilizer recommendations in the various West African agro-ecological zones (Sahelian zone, coastal zone and irrigated area); and (4) identify the basic elements for a future regional action plan for updating fertilizer recommendations.

In particular, participants agreed on the use of modeling using various complementary tools (GIS, DSSAT, QUEFTS, etc.). In addition, they recommended establishing a technical committee with the mandate to propose a regional action plan for updating crop fertilizer recommendations in the coming months. These recommendations would be validated at another ECOWAS/UEMOA regional workshop with the support of technical partners by the end of 2010.

Both decision-makers and farmers have high expectations for this plan. The ECOWAS and UEMOA representatives at the workshop restated their respective commission's commitment to provide the necessary support to this ongoing effort.

# Training Program on Decision Support Tools Held in Kenya

Nairobi, Kenya, was the site for IFDC's first international training program of 2010. The training program, "Decision Support Tools for Agricultural Production, Fertilizer Recommendations and Climatic Variability" was conducted March 8-19 by Dr. Upendra Singh, principal scientist – systems modeling (soil fertility), and Dr. Paul Wilkens, scientist – programmer, both of IFDC's Research and Development Division. The Tropical Soil Biology and Fertility Institute (TSBF) of the International Center for Tropical Agriculture (CIAT) co-sponsored the program. The program was held on the campus of the International Center of Insect Physiology and Ecology (icipe).

J.J. Robert Groot, director of IFDC's East and Southern Africa Division, opened the meeting by discussing IFDC's role in promoting agricultural development in Sub-Saharan Africa (SSA) through Integrated Soil Fertility Management (ISFM), input-output market development and policy reforms. Invited guest instructors were: Dr. Bernard Vanleuwe of TSBF; Dr. Peter Okoth, African Soil Mapping Project, the Africa Soil Information Service (AFSIS) of TSBF; and Erick Kibet Towett, AFSIS, World Agroforestry Centre (ICRAF).

The emphasis of the 11-day program was on the applications of decision support systems (DSS) dealing with yield gap analyses, ISFM, fertilizer recommendations, climatic variability, risk analyses and environmental conservation. The participants, representing 11 countries, were exposed to a simple lime recommendations system, the Phosphate Rock Decision Support System (PRDSS), the Decision Support System for Agrotechnology Transfer (DSSAT) and the Geographical Support System for Agrotechnology Transfer (GSSAT), which links

dynamic crop models to geographic information systems (GIS). The latter tool was developed at IFDC.

Livingstone Chibole from TSBF coordinated a field visit to Embu on March 13. The participants worked long hours to conduct modeling experiments and generate recommendations based on soils, crops and climate and management inputs. The field visits complemented the training program by highlighting: (1) integration of cash-crop perennials such as tea, coffee and bananas into the farming system as a way of enterprise diversification; and (2) the rich knowledge that the visited farmers acquired in terms of managing their farms and setting criteria for evaluating newly introduced technologies.

Based on the interest expressed by the participants, the training program may yield opportunities for further collaboration in the region. The participants expressed the need for initiating a collaborative project with IFDC on DSS to facilitate/enhance agricultural intensification and technology transfer. It was agreed that a user network is needed to help promote DSS in SSA. Attempts will be made to link this group with the DSS participants from prior programs conducted in Ghana and Burkina Faso.

The training program was officially closed by the Honorable Professor Ruth K. Oniang'o, former member of IFDC's Board of Directors (and now on the VFRC's Board of Advisors) and editor-in-chief of the *African Journal of Food, Agriculture, Nutrition and Development* (AJFAND). She challenged the participants to take full advantage of the training by applying the knowledge gained to their current and future work.

Group photo - Decision Support Tools for Agricultural Production, Fertilizer Recommendations and Climatic Variability





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# 2010 International Training Calendar

Training Program	Dates	Location	Program Fee (USD)
1. Developing Fertilizer Supply and Marketing Strategies for the Future (with FSSA)	August 23-27	Pretoria, South Africa	\$1,500
2. Designing and Implementing Agro-Inputs Marketing Strategies (Training and Study Tour)	October 4-15	USA (Muscle Shoals, Alabama; Washington, D.C.; and St. Louis, Missouri)	\$1,800
3. Developing Private Sector Agro-input Markets - Designing and Implementing Targeted Subsidy Programs	October 25-29	Yankari National Park, Nigeria	\$1200
4. Fertilizer Granulation and NPK Production Alternatives	November 1-5	Bangkok, Thailand	\$1,500
5. The Fertilizer Value Chain - Supply System Management and Servicing Farmers' Needs	November 8-12	Bangkok, Thailand	\$1,500
6. Improving Agricultural Productivity and Net Returns among Smallholder Farmers Through Efficient Use of Nutrients and Water	December 6-10	Can Tho City, Vietnam	\$1,500