

IFDC Report

Volume 33, No. 3
September 2008
ISSN 0149-3434

an update on
the work & progress at
IFDC—An International Center for Soil
Fertility and Agricultural Development

www.ifdc.org

TVA Fertilizer Technology Used Worldwide—But Few New Products Since 1970s

\$41 Million in TVA Research Returned \$57 Billion to the World—IFDC Officials Call for New Generation of Fertilizer Research

About 75% of fertilizers and fertilizer technology used around the world today were developed or improved during the 1950s to 1970s by scientists and engineers at the Tennessee Valley Authority (TVA) in Muscle Shoals, Alabama, United States, says John Shields, a former TVA official. Shields is now Interim Director of the IFDC Research and Market Development Division.

“An investment of \$41 million in fertilizer research through 1981 returned an incredible \$57 billion to U.S. agriculture,” Shields says. “That doesn’t include benefits of the technology to the rest of the world.”

But inadequate public funding caused closure of the TVA fertilizer research program in the early 1990s. Today, publicly funded fertilizer research and development has essentially ceased—and so has the flow of new and more efficient fertilizers and fertilizer manufacturing technologies.

Dr. Amit Roy, IFDC President and CEO, says, “TVA’s fertilizer program is recognized as one of the most effective research and development programs of any U.S. agency. Its benefits to the world far outweigh the public investment that the United States made in fertilizer research and development.

(continued on page 2)



IFDC has six pilot plants for research and training in fertilizer development and production.



TVA developed 75% of the fertilizers used worldwide today— but research and development in fertilizer technology has almost ceased since the program closed in the early 1990s.

In This Issue

TVA Fertilizer Technology Used Worldwide—But Few New Products Since 1970s	1
IFDC Set to Play a Key Role in Solving the Food Crisis in Africa	3
Announcements	4
Global Shortage of Sulfuric Acid Contributes to Rising Fertilizer Costs	5
IFDC to Sponsor Fertilizer Workshop in Bangkok	5
IFDC’s Janice Berry Chosen TFI’s Person of the Month	6
Fertilizer Professionals From 10 Countries Participate in IFDC Training Program and Study Tour	6
IFDC 2008 and 2009 Training Programs	9
CATALIST Project Will Reinforce Peace, Stability in Great Lakes Region of Central Africa	10
IFDC Staff Members Receive Awards	11

IFDC Report

Publisher:

IFDC—An International Center for Soil Fertility and Agricultural Development

Editor:

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Layout/Design:

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IFDC Report is a quarterly publication of IFDC, Muscle Shoals, Alabama, U.S.A. Telephone: 256-381-6600, Telefax: 256-381-7408, E-Mail: general@ifdc.org, Web Site: www.ifdc.org. Unless otherwise noted, printed material published in the *IFDC Report* is in the public domain and may be freely reproduced. Source acknowledgment and a copy of any reproduction are requested. Subscriptions are free. A French language edition of the *IFDC Report* is available from IFDC.

IFDC is a public international organization (PIO), 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 and agricultural productivity in developing countries through the development and transfer of effective and environmentally sound plant nutrient technology and agribusiness expertise.

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TVA Fertilizer Technology Used Worldwide

(continued from page 1)

“It’s time to launch a radical initiative to develop a new generation of energy-efficient fertilizers to help avert hunger and famine.”

TVA Achievements

TVA developed high-analysis fertilizers with high nutrient content as well as more efficient manufacturing processes. The fertilizers include urea-related products, diammonium phosphate (DAP), triple superphosphate (TSP), sulfur-coated urea, and liquid fertilizers. TVA improved the manufacturing processes for ammonium nitrate and other products that help commercial producers provide efficient fertilizers to farmers worldwide. TVA’s ammonium-granulation and bulk-blending technologies improve the efficiency of the manufacture of many mixed fertilizer grades. TVA generated most of the fluid fertilizer and dry bulk-blending technology used in the United States today.

“TVA technology fueled the sweeping advances of U.S. farmers in food and fiber production in the 60s to 80s,” Shields says. “Today, fertilizers are responsible for more than a third of total U.S. crop production.

“The \$57 billion return from a \$41 million investment included about \$49 billion from use of high-analysis fertilizers and \$8 billion from process development and improvement. That’s a benefit:cost ratio of more than \$20 to \$1.

“TVA followed promising new fertilizers from conception to production to national acceptance by farmers and the fertilizer industry,” Shields recalls. “Its program was based on fundamental research, followed by process development and technology transfer.”

After agronomic tests and pilot plant production proved that a new TVA fertilizer product or manufacturing process performed well, TVA produced enough tonnage to introduce it into U.S. agriculture. “TVA then stopped work on that project and moved to develop newer and more promising technologies,” Shields says.

Calls for New Fertilizer Research

Dr. Norman Borlaug, 1970 Nobel Laureate, says, “I am concerned about the state of the fertilizer industry itself. With the price of energy increasing, we need to find cheaper, more effective ways to nourish food crops. The price tag for increasing productivity in Africa will be quite high. The fertilizer industry needs to do everything in its power to minimize that cost. Farmers are paying way too much for fertilizer products because we are transporting millions of tons of material that is not nutrient and because much of the nutrients in applied fertilizers are never used by the crop. Nutrient losses to the environment are high with consequences for global warming and water pollution.

“Work should begin now on the next generation of fertilizer products using advanced techniques such as nanotechnology and molecular biology, especially in conjunction with plant genetics research. ‘Smart’ fertilizer products that will release nutrients only at the time and in the amount needed should be developed.” Borlaug served on the IFDC Board of Directors from 1994 to 2003.

“The world needs a major research effort to improve the effectiveness of fertilizer production and use,” says Peter McPherson, President of the National Association of State Universities and Land-Grant Colleges (NASULGC) and current Chairman of the IFDC Board. “Fertilizer is a commodity industry and it is unlikely the industry alone will undertake the research. Some public investment is probably required.”

During the U.N. Food Summit in June 2008 in Rome, more than 180 world leaders addressed the food crisis and stressed the urgent need “to decisively step up investment in science and technology for food and agriculture.”

IFDC Facilities

“The need for increased food is escalating, but new agricultural technology is not keeping pace,” Roy says. “An effective research program to develop a new range of fertilizers should be a key element of any long-term strategy to alleviate the food crisis.

(continued on page 3)

TVA Fertilizer Technology Used Worldwide

(continued from page 2)

“Most fertilizer products used today were developed when energy seemed abundant and cheap. But with rising prices we should develop a new generation of fertilizer products that use plant nutrients more efficiently.

“Such innovations will require investments in research—but such costs

would be miniscule compared to the benefits for humanity,” Roy says.

“IFDC is in a unique position to meet this challenge. We’re the world’s only agency with the necessary facilities and expertise. We have both the physical and human resources to do the job. IFDC has a complex of six pilot plants for research and training in fertilizer development and production plus a highly qualified team of scientists and

engineers. We also have the international contacts to build support for a new, vigorous fertilizer research and development program.

“We can pick up where TVA had to cease.”

IFDC Set to Play a Key Role in Solving the Food Crisis in Africa

Interview with Abdelmajid Slama, Vice Chairman, IFDC Board of Directors During the Annual Meeting of the Board’s Africa Committee, June 10–12, 2008, in Kigali, Rwanda

Question: The Africa Committee is meeting to discuss IFDC’s activities in Africa. What is your view on IFDC’s specificity and core competencies?

Abdelmajid Slama: IFDC is well placed to help Sub-Saharan countries increase food production and achieve the Millennium Development Goals. IFDC has the mandate to conduct research and walk the “extra mile” to demonstrate how results can be applied in the field with farmers’ participation. That makes the difference.

IFDC’s integrated approach combines the benefits of key agricultural development components such as improved seeds, efficient fertilizers, and better crop management. The Center uses a multidisciplinary approach, working side-by-side with farmers to develop and implement new technologies in an environment-friendly and cost-effective manner.

IFDC also operates through an extensive partnership network, facilitating the mobilization of local expertise among government agencies, NGOs, and the private sector.

Question: The market plays a decisive role at both ends of the agricultural production chain: inputs through outputs. How do you see IFDC’s strategy in this regard?

Slama: Over the years, IFDC has developed solid expertise in linking farmers to markets. Applying best cropping practices will work only if input delivery and output sales are facilitated. Farmers must be able to buy the needed inputs on time and sell their products at competitive prices to increase their income and become market-oriented.

IFDC has also learned the importance of sound policies. An enabling

(continued on page 4)



Visiting with Rwandan children during the Africa Committee meeting are Abdelmajid Slama (far left), Vice Chairman of IFDC’s Board of Directors, and Dr. Deborah Hellums (white blouse), IFDC Coordinator—Field Projects.

IFDC Set to Play a Key Role in Solving the Food Crisis in Africa

(continued from page 3)

environment is indispensable to encourage private entrepreneurs to invest in market development. IFDC has demonstrated the efficiency of knowledge-based policies in countries with inadequate market conditions. Successful experiences in Albania and Afghanistan are good examples of how market-friendly policies can facilitate farmers' access to inputs. In some cases, voucher programs support the commercial distribution of fertilizers and are incentives for farmers to adopt new technologies.

Question: Neglect of agricultural research over the past two decades is often considered a root cause of the world food crisis. What role can IFDC play here?

Slama: IFDC is the only center that has the capacity to conduct highly specialized research on fertilizer production processes and products with quality control. IFDC's pilot plants offer a range of services including the characterization of local mineral resources such as phosphate rock and potash deposits that can be used for fertilizer production. The Center also studies the relevance, efficiency, and profitability of fertilizer products in laboratories and farmers' fields.

Question: IFDC is implementing a new project, with funding from the Netherlands, known as CATALIST—for Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability in Central Africa's Great Lakes Region. What do you think about CATALIST?

Slama: CATALIST is the perfect example of how IFDC mobilizes its multi-level competencies and local capacities to achieve development objectives.

The project aims to accelerate agricultural intensification in the Great Lakes Region where soil degradation and high population density threaten natural resources. Under these conditions, productivity can be increased only through modern technologies used with an environmentally sound approach.

CATALIST is planting hope in this fragile region. The project uses a participatory approach to train farmers to diversify their cropping systems through new practices and new crops. It's also a progressive and prudent approach aiming at changing farmers' perceptions and mentality. Changes are injected in small doses because farmers are often cautious about risking investment in modern inputs and exposure to market uncertainties.

Question: The Africa Committee visited CATALIST activities in the field in Rwanda. What were your impressions?

Slama: We interacted with participating farmers and could really see change happening.

More than 600 farmers have already adopted production-enhancing technologies and diversified their crops using improved varieties of wheat and potato. Disease-resistant varieties that respond better to fertilizer, combined with appropriate fertilizer doses, have doubled yields overnight.

The market component is crucial. CATALIST studies which crops are most profitable to better link farmers' production to market demands. For instance, the introduction of wheat near a flour mill in the Gicumbi District of Rwanda secures market opportunities for farmers. The Gicumbi flour mill serves the entire region with a capacity of 200 tons per week.

Rwanda is a showcase of CATALIST's success. This will facilitate implementation of the project in Burundi and the Democratic Republic of Congo.

Question: In light of the food crisis, what perspectives and changes do you foresee for IFDC in Africa?

Slama: IFDC's other strength is its flexibility and capacity to respond to new challenges.

The Center should strengthen its capacities in innovative research to respond to new fertilizer market needs. For example, techniques to increase the efficiency of fertilizer use are needed. A good example is urea deep placement, or UDP, which involves applying urea briquettes near the rice root zone to limit nutrient losses that cost the farmer and damage the environment. UDP is revolutionizing rice production in Bangladesh. Similar technologies could be developed for other crops.

IFDC should also focus on designing new fertilizer products specifically for Africa. Some African countries have important phosphate rock and potash deposits that are potential sources of fertilizers. The exploitation of these raw material resources was often not cost effective in the past, but soaring prices could now make it economically attractive.

IFDC will play a critical role in making the "Green Revolution" an African reality.

Announcements

Departures:

Dr. Arno Maatman completed his assignment as Chief of Party – SAADA in Mali effective July 31, 2008.

Relocation:

Mr. Willem A.M. van Campen relocated to Mali to serve as Chief of Party – SAADA effective Aug. 1, 2008.

Global Shortage of Sulfuric Acid Contributes to Rising Fertilizer Costs

Global Prices Rise Fivefold Since 2007

World sulfur shortages and soaring prices for sulfur may force fertilizer and food prices higher.

About 80% to 85% of the world's sulfur production is used to manufacture sulfuric acid, which is essential for fertilizer production—especially for diammonium phosphate (DAP), the most widely used phosphate fertilizer. Half of the world's sulfuric acid production is used in fertilizer production, mainly to convert phosphates to water-soluble forms, according to the *Fertilizer Manual*, published jointly by the United Nations Industrial Development Organization (UNIDO) and IFDC.

World sulfur prices have increased from less than \$100/ton in 2007 to more than \$500/ton in early 2008. In August, sulfur was selling for \$650 to \$850/ton worldwide.

“About 1 ton of sulfur is needed to produce 3 tons of sulfuric acid—enough to manufacture about 2 tons of merchant-grade phosphoric acid [50%–54% P₂O₅],” says Steven Van Kauwenbergh, IFDC Principal Scientist and Program Leader of the Fertilizer Materials Program. “More than 2 tons of DAP can be manufactured from the 2 tons of P₂O₅ and the original ton of sulfur.”

Van Kauwenbergh is author of the 2006 IFDC reference book *Fertilizer Raw Material Resources of Africa* (http://www.ifdc.org/New_Layout/Publications_Catalog/index.html).

High demand and shortfalls in supply have led to a global shortage of sulfuric acid, and prices have more than doubled over the past year. Factors driving the shortage include high phosphate fertilizer demand and sulfuric acid plant outages in some regions, according to the *General Electric Market Report*.

China is the world's largest importer of sulfur. China consumed about 10

million tons of sulfur in 2007; most was used to manufacture phosphate fertilizers. About two-thirds of the sulfur was imported, according to *China's Sulfur Market Report—2008*.

China's largest fertilizer plants became operational in 2002, reducing the need to import phosphate fertilizer but consuming dramatically more sulfur. By 2005, China was one of the world's largest fertilizer exporters. But China imposed 130% to 135% tariffs on fertilizer exports in 2008 to curtail outflow and protect the domestic fertilizer supply.

“Sulfur is one of the more common constituents of the earth's crust,” Van Kauwenbergh says. “Most of the sulfur available on the world market today is extracted from natural gas and oil.”

Crude oil contains from 0.1% to 2.8% sulfur. Some sulfur is recovered from coal. Sulfur is also recovered from the roasting of sulfides in metallurgical processing. A minor amount of sulfur is recovered by mining of pyrites or other extraction methods.

The global output of sulfur is about 40 million tons/year and is expected to reach about 55 million tons/year by 2011, according to the *China Sulfur Market Report*. In the long term, the increase in world sulfur supply is expected to overcome current shortages.



Photo by Marion Post Wolcott/Library of Congress
Copper mining and sulfuric acid plant in Copperhill, TN.

IFDC to Sponsor Fertilizer Workshop in Bangkok

IFDC is organizing an International Workshop on Fertilizer Granulation and Micronutrients to be held Nov. 3–7 at the Royal Benja Hotel in Bangkok. Thailand's Ministry of Agriculture and Cooperatives will cosponsor the workshop, with support of the Thai fertilizer industry.

J. Ramon Lazo de la Vega, an IFDC fertilizer technology specialist with more than 25 years of experience in the fertilizer sector, will lead the program. Speakers will also include experts from the fertilizer industry and related service providers.

The workshop fee of US \$1,200 per participant is due by Oct. 1. After that date, the fee increases to \$1,400. The fee includes a \$200 non-refundable deposit required with each registration.

Topics will include production methods and equipment, plant and equipment design, storage and handling of granular fertilizers, raw materials, product quality issues, and incorporation of micronutrients into fertilizer products.

Sessions will address granulation of ammonium phosphates (DAP and MAP), triple superphosphate (TSP) and single superphosphate (SSP), ammonium sulfate, and compound fertilizers (NPK). Also covered will be compaction-granulation, bulk blending, and fluid fertilizers. Participants will visit facilities for fertilizer granulation and storage.

Since 1974, IFDC has organized more than 670 workshops, study tours, and training programs for about 9,000 participants from 150 countries. The programs have covered a wide range of subjects, including fertilizer marketing, production, and distribution and handling. Recent courses have also covered sustainable agriculture, computer modeling and simulation, competitive agricultural systems and enterprises, market information systems, fertilizer recommendations, and environmental aspects of fertilizer production and use.

IFDC's Janice Berry Chosen TFI's Person of the Month

The Fertilizer Institute (TFI) honored Janice Berry, Coordinator, IFDC Market Information Unit, as Person of the Month in the June issue of its newsletter, *TFI Advocate*. As IFDC's liaison with TFI and other fertilizer industry representatives, Berry gathers information on the fertilizer markets in the United States and Canada and prepares aggregate reports for analysis.

"We at IFDC are proud of this honor for Janice," says Dr. Amit Roy, IFDC's President and CEO. "Fertilizer has become a hot issue with the current dramatic rise in prices. The information that Janice provides is valuable to the work that IFDC does in developing countries."

In addition to TFI responsibilities, Berry and colleague Linda Walsh gather current data from international and national fertilizer organizations and U.S. government offices. Statistics are also compiled from fertilizer periodicals, databases, surveys, and personal contacts.

The Market Information Unit publishes:

- *North America Fertilizer Capacity*, which includes data on fertilizer plant capacity for 19 products in plants in the United States, Canada, Mexico, and Trinidad.
- *Worldwide Capacity Listing by Plant* for ammonia, urea, ammonium nitrate, phosphoric acid, diammonium phosphate (DAP), monoammonium phosphate (MAP), potash, and NPK.
- *Regional Fertilizer Situation Reports* for North America, Western Europe, Eastern Europe, Latin America, Africa, Asia, former Soviet Union, and China.

These publications can be purchased on IFDC's Web site (<http://www.ifdc.org/>).

"I am honored to be recognized by TFI. I've enjoyed my relationship with TFI and with individuals on TFI's Economics Council," Berry says.

"Fertilizer is crucial in our hope of feeding the world. Fertilizer feeds the soil that ultimately feeds us all. I'm glad to have even a small part in helping people in developing countries build food security, increase their incomes, and improve their lives."



Janice Berry, right, was chosen TFI's Person of the Month. She and colleague Linda Walsh are shown compiling data for aggregate analysis reports.

"TFI's statistical programs form the basis of numerous legislative and regulatory efforts, as well as communication initiatives. I would like to extend a sincere thank you to IFDC and Janice for their partnership, time, and effort on helping make this indispensable program possible." Ford B. West, President, The Fertilizer Institute

Fertilizer Professionals From 10 Countries Participate in IFDC Training Program and Study Tour

Training included industry tours in Alabama and Florida

IFDC conducted an international training program and study tour on "Overview of Fertilizer Production" July 14–23, 2008, at IFDC Headquarters in Muscle Shoals, Alabama, and in Tampa, Florida, United States. The 18 participants were fertilizer industry professionals from 10 countries: Australia, Barbados, Colombia, Egypt, India, Kenya, Morocco, Saudi Arabia, Ukraine, and United States.

"The training provided basic knowledge, with emphasis on nitrogen and phosphates, to engineers who are new to fertilizer production," said Dan Waterman, Director of IFDC's Training and Workshop Coordination Department. "We familiarized participants with fertilizer raw materials, products, and manufacturing processes."

Chittipeddi Viswanathan, Senior General Manager of Finance and Accounts at Krishak Bharati Cooperative Ltd. (KRIBHCO) in Nagar, India, said, "The training gave me a global view of the fertilizer industry and will help me make sound investment decisions. KRIBHCO produces fertilizers and other farm-related products. We have to select, finance, and manage agricultural development projects that are both socially desirable and commercially profitable."

The program began with 4 days at IFDC Headquarters in Muscle Shoals, where participants attended orientation and technical sessions and visited IFDC greenhouses, pilot plants, and physical properties laboratories. The group also

(continued on page 7)

Fertilizer Professionals From 10 Countries Participate in IFDC Training Program and Study Tour

(continued from page 6)

toured the Southern States Cooperative in Athens and the Cherokee Nitrogen Fertilizer Plant in Cherokee, Alabama.

Participants then traveled to Florida, where they toured two Mosaic Co. fertilizer facilities: the New Wales Fertilizer Complex and the Riverview Fertilizer Complex.

“IFDC’s pilot plants serve three purposes: training in operation, maintenance, and engineering; training for specific needs upon request; and research to develop new fertilizer products and processes,” explained J. Ramón Lazo de la Vega, IFDC Senior Specialist (Engineering) and technical leader of the training program.

“We can run fertilizer production tests in the IFDC pilot plants that would be too costly and risky to run in regular commercial plants,” Lazo de la Vega said.

Amanda Jayne Saunders, Process Chemical Engineer at Cumming Smith British Petroleum (CSBP) in Australia, gave an example: “In 2001, two CSBP product developers brought raw materials to IFDC to work with IFDC engineers on the development of ammonium sulfate-based fertilizers. The outcome was a great success.”

Exchanges among participants were largely technical- and business-oriented. “We all have information that someone else will find useful,” Saunders noted. “We’re forming a real network through which we’ll continue to share knowledge.”

Luis Miguel Ilelaty, Technical Service Director of ABOCOL S. A. in Colombia, called the training a “mind-opening experience.”

“I was pleased to learn about IFDC’s pilot plants,” Ilelaty said. “We may run some tests in these facilities. We want to upgrade the technology of our current NPK plant and lower production costs



IFDC staff and participants of the “Overview of Fertilizer Production International Training Program and Study Tour,” held July 14–23, 2008, at Headquarters in Muscle Shoals, Alabama.



Left to right, J. Ramón Lazo de la Vega, technical leader of the international workshop, speaks to participants and IFDC’s Ketline Adodo and Robert Bosheers at the Headquarters’ Pilot Plant.

by replacing 85% of the monoammonium phosphate used as a raw material with local phosphate.”

Daniel Buswell, Chemical Engineer at A. J. Sackett in Baltimore, Maryland, United States, said, “I now have a better grasp of the fertilizer industry in terms of where fertilizer comes from, how it is made, who it goes to, and how it affects the world.

“I work in process design and equipment systems, but knowledge of end-user products and customers’ needs is also important,” Buswell said. “Be-

sides, the group was terrific! We came from diverse backgrounds and cultures. The experience was mutually enriching.”

Marsha Springer, Assistant General Manager of Eastern Caribbean Fertilizer Co. in Barbados, said, “My background is in chemistry, but I didn’t know much about fertilizer production. When a product got to me, it was already finished. But now I know what to look for in terms of grade and quality and

(continued on page 8)

Fertilizer Professionals From 10 Countries Participate in IFDC Training Program and Study Tour

(continued from page 7)

how to adjust production to customers' needs."

Khalid Marshod Al-Rohily, Agronomist at Saudi Basic Industries Corp. (SABIC) in Saudi Arabia, said, "SABIC not only produces fertilizers, it also provides extension services to help farmers improve crop yields through efficient fertilizer use. I value this opportunity to enhance my knowledge of fertilizer chemistry, economics, production, and markets. This will be useful in my research on new methods of fertilizer application."

Sherif Magdy Abel Salam El-Gabaly, Business Development Manager at Abu Zaabal Fertilizers and Chemical Company in Egypt, said, "My position requires constant updates on new trends and needs in the fertilizer industry. The IFDC training will help me tap into the wealth of available knowledge and know where to go for more information."

Maina John Kabui, Senior Quality Assurance Officer at the Kenya Bureau of Standards (KEBS), pointed out, "KEBS develops national market standards, but since we import most of our fertilizer products, we are more on the implementation side. This training gave me an overview of production processes and a better understanding of quality control. That will help a lot in my inspection work."

The visit to Mosaic in Florida was particularly significant to Dibyendu Ghosh, Assistant Production Manager at Tata Chemicals Ltd. in Durgachak, India. "We are benchmarking our products and processes," he said. "Granule size is the most important parameter in the production of DAP and NPK. I wanted to know what steps to follow to obtain 90% granule size and how to minimize breakdowns in our plants."

Safaa IBN Ghazala, Engineer at Cerphos (OCP) in Casablanca, Morocco, said, "I liked the balanced combination of theory and practice. Presentations were highlighted by real-life examples that piqued and sustained our interest."

Stepan Kiminchidzhi, Deputy Director for Foreign Relations and Welfare Issues at Odessa Port Plant (OPP) in Ukraine, said, "We are revamping our company to better respond to new market challenges and our customers' needs. This new information and contacts will be useful for our future development."

Mohamed Mahmoud Khalil Mahmoud, Business Development Manager at Abu Qir Fertilizers and Chemical Co. in Alexandria, Egypt, said, "The only problem was the duration of the program. I found it too short, considering the broad range of topics covered and the crucial role of fertilizers in agricultural development."

Waterman said, "As the fertilizer industry responds to increasing demands, we expect more interest in training. We'll hold the next IFDC fertilizer training program in November 2008 in Bangkok."

IFDC 2008 and 2009 Training Programs

2008

Application of Decision Support Tools for Fertilizer Recommendations and ISFM

Date – Oct. 6–17, 2008

Location – Accra, Ghana

Fertilizer Granulation and Micronutrients

Date – Nov. 3–7, 2008

Location – Bangkok, Thailand

Agro-Input Dealer Development in Africa

Date – Dec. 8–12, 2008

Location – Arusha, Tanzania

2009

Improving Agricultural Productivity Among Smallholder Farmers: Methods and Results

Date – Feb. 23–27, 2009

Location – Maputo, Mozambique

Decision Support Systems, Experimental Design and Analysis of Data

Date – April 20–24, 2009

Location – Bamako, Mali

Nitrogen Fertilizer Production Technology Workshop (with IFA)

Date – June 15–19, 2009

Location – Penang, Malaysia

Linking Farmers to Markets in Africa

Date – Aug. 10–14, 2009

Location – Arusha, Tanzania

Phosphate Fertilizer Production Technology Workshop (with IFA)

Date – Oct. 19–23, 2009

Location – Marrakech, Morocco

Developing Fertilizer Supply Strategies for the Future

Date – Nov. 2–6, 2009

Location – Capetown, South Africa

CATALIST Project Will Reinforce Peace, Stability in Great Lakes Region of Central Africa

The Great Lakes Region is one of the world's poorest areas, with the highest population density in Africa. The Netherlands Minister for Development Cooperation presided at June 28 launching of the 5-year project.

BUJUMBURA, BURUNDI—CATALIST, or the Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability project, was officially launched on June 28 in Bujumbura, Burundi.

CATALIST is a 5-year project to mobilize local resources and help farming communities increase agricultural production, thus reinforcing peace and environmental stability in Central Africa's Great Lakes Region—one of the world's poorest areas, with the highest population density in Africa. The region comprises Rwanda, Burundi, Uganda, western Tanzania, and the eastern Democratic Republic of the Congo (DRC).

CATALIST is based in Rwanda and funded by the Embassy of the Kingdom of The Netherlands in Rwanda. IFDC implements the project, in partnership with Helpage, an NGO that creates employment in rural environments.

Mr. Bert Koenders, the Netherlands Minister for Development Cooperation, presided over the launching ceremony. Burundi's Minister of Agriculture and Livestock, Ferdinand Nderagakura, also attended.

The launching ceremony highlighted CATALIST objectives and achievements since activities began in late 2006 in Rwanda, Burundi, and eastern DRC. Farmers and beneficiaries described increased employment opportunities gained through the project. CATALIST will also promote trade in southern Uganda and western Tanzania in the future.

CATALIST uses sustainable agricultural intensification methodologies and provides labor-intensive infrastructure improvements such as road building and agroforestry, says Dr. Amit Roy, IFDC President. These combined efforts promote the development of accessible and profitable markets for agricultural inputs and outputs. At a time when food, fertilizer, and energy prices are skyrocketing, CATALIST is generating employment and helping farmers increase agricultural production and income.

Noel Ujeneza of Caritas Rwanda, a CATALIST partner, said, "CATALIST is changing the environment and the mentality of the people in local neighborhoods. Today, 600 farmers who haven't belonged to any farm groups are successfully applying technologies demonstrated during CATALIST field days."



Farmers compare cassava from a CATALIST fertilized pilot field (right) and cassava from the untreated field (left).



On behalf of Burundi's Agri-Input Distributors, Edouard Hicintuka addresses attendees at the June 28 official launching of the 5-year CATALIST project.



Left to right, Dr. Amit Roy, IFDC President and CEO, discusses CATALIST activities with Bert Koenders, Netherlands Minister for Development Cooperation, and Ferdinand Nderagakura, Burundi Minister of Agriculture and Livestock.

IFDC Staff Members Receive Awards

The Chairman's Outstanding Internationally Recruited Staff Member Award



Ishrat (right) in the field explaining the benefits of UDP.

The 2008 recipient of the IFDC Chairman's Outstanding Internationally Recruited Staff Member Award is Ishrat Jahan, Resident Representative of IFDC's Asia Division. Ishrat is an economist with more than 20 years of experience in policy development. Based in Dhaka, Bangladesh, Ishrat has been instrumental in expanding IFDC activities—especially urea deep placement technology (UDP)—to farmers across the country. Ishrat was key in helping organize a UDP media campaign to show farmers the benefits of using the new technology. About 400,000 Bangladeshi farmers now use UDP in districts where IFDC is implementing the new project.

Ishrat demonstrates a dedicated work ethic, leadership, and innovation, as well as expertise in agribusiness, marketing, public relations, and communication at all levels. Her success in fostering collaborative relationships among IFDC, the Government of Bangladesh, and the donor community has been invaluable to Bangladeshi farmers.

Ishrat, a Bangladeshi citizen, earned a B.A. and an M.A. in economics from the University of Dhaka in Bangladesh and an M.S. in agricultural economics from the University of the Philippines at Los Baños.

The President's Outstanding Outposted Staff Member Award



Marie Claire accepting her award.

Marie Claire Kalihangabo is the 2008 recipient of the President's Outstanding Outposted Staff Member Award. She is the Office Manager for the Catalyze Accelerated Agricultural Intensification for Social and Environmental Stability (CATALIST) project, based in Kigali, Rwanda. Marie Claire works to support the CATALIST technical staff by providing them with a productive working environment. She also ensures that all financial transactions are accurate and transparent.

Marie Claire is a valuable information source on project activities and interactions with stakeholders. She has a strong sense of responsibility and pride in her work and recognizes and appreciates IFDC's efforts to improve the lives of her countrymen and neighbors in surrounding Great Lakes countries.

Marie Claire, a Rwandan citizen, received a B.S. in management from the National University of Rwanda in Butare.

The President's Outstanding Headquarters Staff Member Award



Lisa editing manuscripts at IFDC Headquarters.

The 2008 recipient of the President's Outstanding Headquarters Staff Member Award is Lisa Thigpen, IFDC Editor. Lisa edits IFDC documents with care and precise attention to detail. She also writes outstanding articles for IFDC newsletters, corporate reports, and press releases, always looking for the "human" side of a story. Her main concern is to make IFDC staff, and IFDC itself, communicate clearly and concisely.

Lisa genuinely cares about the people she works with as well as IFDC's ultimate clients: smallholder farmers, input dealers, and researchers in the world's poorest countries. Lisa's hard work and dedication to editorial quality help improve IFDC's image worldwide. Lisa represents the dedication and professionalism of so many quiet IFDC specialists whose contributions are crucial to helping IFDC meet the world food crisis.

Lisa is a U.S. citizen. She earned a B.S. in English from the University of North Alabama, United States.

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