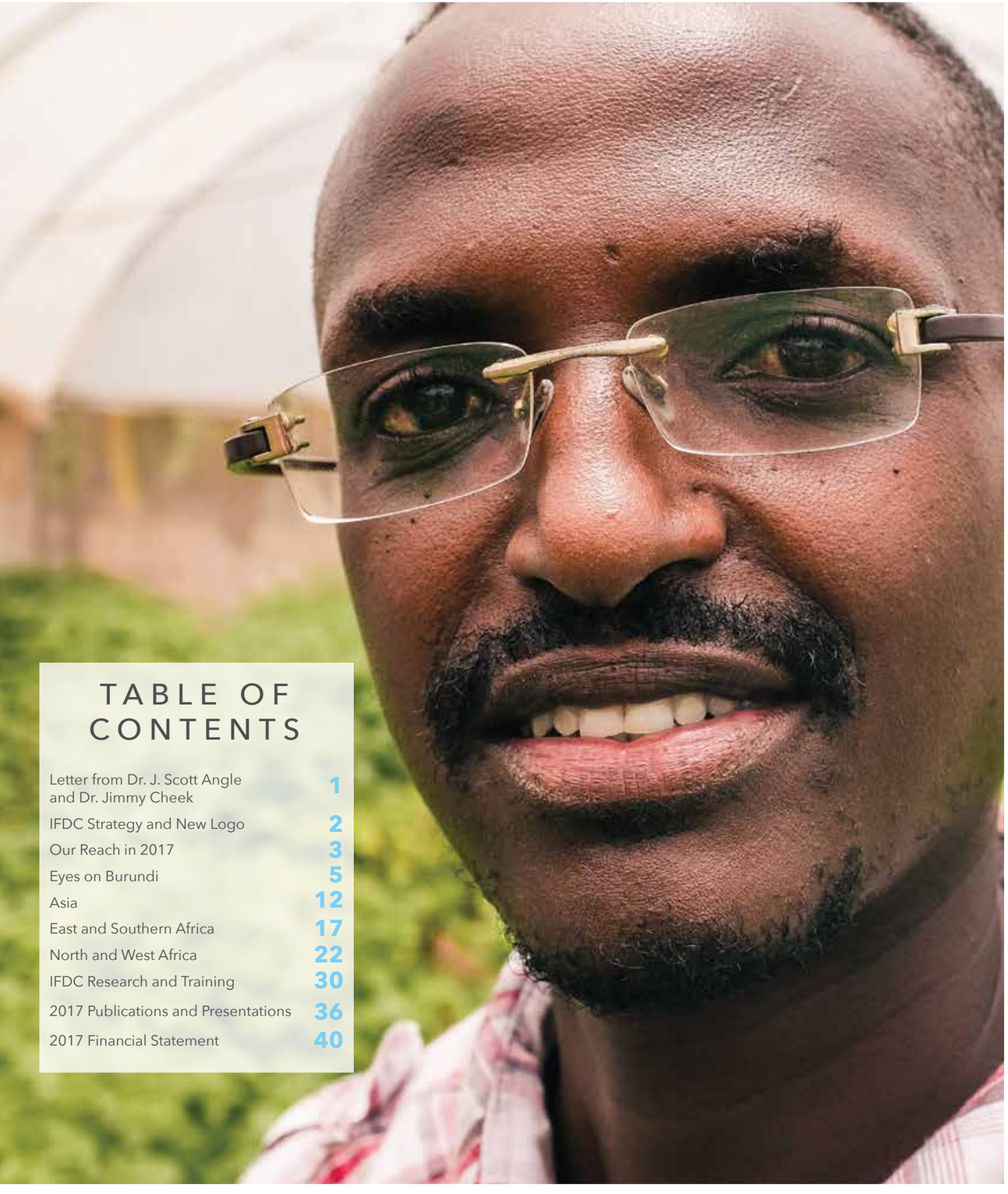
IFDC ANNUAL REPORT 2017

IFDC

Developing Agriculture from the Ground Up



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LETTER FROM DR. J. SCOTT ANGLE AND DR. JIMMY CHEEK

It is with great pride that we present IFDC's Annual Report for 2017. The past year has been one of introspection and growth at IFDC.

We began the year with the creation and announcement of a new strategic plan to take us forward through 2021 (page 2). This new plan sets goals for us both internally and externally to help us succeed as we carry out our mission to help smallholder farmers succeed.

In the field, our projects have yielded incredible results. The Support Project for Agricultural Productivity in Burundi (PAPAB), our featured project in this annual report (page 5), is helping farmers envision and attain their futures through inclusive household decision-making, quality inputs, and access to microfinance. As a result, 18,000 farmers have been trained in treating farming as a business — not simply a way to survive, but a way to prosper. The USAID Feed the Future Ghana Agriculture Technology Transfer project, based in Tamale, Ghana, has built three cutting-edge seed laboratories in the region while increasing farmer productivity in maize, rice, and soybean by 100%. And in Asia, the Accelerating Vegetable Productivity Improvement (AVPI) project has helped almost 30,000 women improve vegetable quality and yield by using good agricultural practices on nearly 12,000 hectares and fertilizer deep placement (FDP) technology on more than 3,000 hectares. Please explore more of our projects' results inside (starting on page 12).

As several of our projects come to completion, we are looking inward to determine how we can be more efficient and better serve farmers and agribusiness leaders. To ensure we are providing the best fertilizer technology to farmers, it's important that we expand our internal scientific capacity. We are reaching out to university fertilizer experts to support and integrate their new and novel ideas into the IFDC research portfolio. Several new partnerships have been created, and more are on the way. By leveraging their research and laboratory capacities, we can mutually benefit as we innovate soil nutrition and fertilizer technology.

Moving from 2017 to 2018, we refreshed our brand by launching a new logo (page 2). The new logo represents the value we place on learning, our ability to adapt, our constant evolution and commitment to innovation, and our commitment to growth — both at IFDC and in the field helping farmers grow and sell more food.

We're continuing to improve and grow, and as we forge ahead in 2018, the future for IFDC and our project beneficiaries is bright.

Dr. J. Scott Angle
President & CEO

Dr. Jimmy Cheek
Chairperson of the Board

IFDC BOARD OF DIRECTORS

IFDC STRATEGY AND NEW LOGO

IFDC

Developing Agriculture from the Ground Up

Since its inception, IFDC has grown and established itself as an independent expert in soil fertility with proven ability to move research from the lab to the field. The organization has learned at every opportunity, adapted to meet new challenges, and constantly evolved to become what we are today. After 44 years of growth, it's time our logo caught up.

Our new logo was designed with innovation in mind. The vibrant colors inspire hope in our shared future and reflect the varied color palettes and ambitions of the Sustainable Development Goals. The wheat plant in the middle pays homage to Dr. Norman Borlaug, the Father of the Green Revolution. Further, the plant symbolizes five of our organizational strengths, as described in our Strategic Plan, published in spring 2017:

1. INDEPENDENT EXPERTISE IN SOIL AND FERTILIZER
2. BRIDGING RESEARCH AND TECHNOLOGY TRANSFER
3. CAPACITY BUILDING
4. AGRICULTURAL MARKETING DEVELOPMENT
5. PROJECT MANAGEMENT

Our strategic plan was developed with input from more than 1,000 stakeholders from around the world. It was designed to focus IFDC around our core competencies and establish three future initiatives to achieve: translate research into action, implement knowledge management strategies, and establish and strengthen strategic partnerships.

Our strategic plan can be found at ifdc.org/2017-2021-ifdc-strategic-plan.

Though we have a new look, IFDC remains committed to nurturing the soil and helping farmers grow and sell more food. We strive for the realization of global food and nutrition security. Whether simply changing our logo or taking a new approach to solving a problem, IFDC will continue to learn, adapt, evolve, and grow to meet the needs of our ever-changing world.

Our branding package can be found at ifdc.org/branding.

OUR REACH IN 2017

BANGLADESH • BENIN • BURKINA FASO • BURUNDI • CÔTE D'IVOIRE • ETHIOPIA • GHANA
KENYA • MALI • MOZAMBIQUE • MYANMAR • NEPAL • NIGER • NIGERIA • SENEGAL
THE NETHERLANDS • TIMOR-LESTE • TOGO • UGANDA • UNITED STATES OF AMERICA

2,398

DEMONSTRATION PLOTS ESTABLISHED

Management practices and/or technologies tested in farmer fields for dissemination

578,268

FARMERS TRAINED (33% WOMEN)

Direct farmer participants in short-term capacity building on management practices and/or technologies

1.3 MIL

FARMERS APPLYING GOOD AGRICULTURAL PRACTICES

Farmers who have applied improved farm management practices and/or technologies

305,686

AREA UNDER GOOD AGRICULTURAL PRACTICES

Hectares under improved management practices and/or technologies (managed or cultivated by farmer partners)

638

OUTREACH ACTIVITIES

Dissemination activities – workshops, forums, stakeholder consultations, publications, and print, radio, and television media

381

PUBLIC-PRIVATE PARTNERSHIPS

Agreements between public and private firms/actors and research, academic, civil society, and stakeholder associations

EYES ON BURUNDI

BUILDING RESILIENCE WHERE IT'S NEEDED MOST

People in Burundi are no strangers to challenge.

With 90% of the 11.4 million people relying on subsistence agriculture and food shortages in different periods during the agricultural seasons, serious interventions are needed to boost production and enable farmers to bring their food to market. However, challenges such as political unrest, susceptibility to climate change, soaring malnutrition, huge post-harvest losses, and severe issues with erosion make agricultural progress in Burundi an uphill battle.

Despite these challenges, people in Burundi show true resilience. Since 2012, IFDC has worked with smallholder farmers, financial institutions, and government leaders to increase agricultural productivity with great success. Many farmers have adopted IFDC methods and technologies, and now PAPAB is continuing IFDC's efforts in the country.

OVERVIEW

PAPAB — *Projet d'Appui à la Productivité Agricole au Burundi* in French, and Support Project for Agricultural Productivity in Burundi in English — aims to sustainably increase food production in Burundi by promoting market-oriented, climate-resilient, and sustainable agricultural techniques, supported by targeted fertilizer subsidies. This subsidy system, known as the *Programme National de Subvention des Engrais au Burundi* (PNSEB), was an IFDC project that generated great successes and became the bedrock on which PAPAB is primarily built. PAPAB is funded by the Embassy of the Kingdom of the Netherlands in Burundi.

But what exactly is PAPAB? Combined with the PNSEB subsidy system, its foundation relies on guiding farm households to make conscious decisions about their future. Household members discuss these decisions together as a family – youngest to oldest, men and women. This includes developing partnerships with other farmers in their villages (scattered across hills called "collines"), project teams, government agencies, and private sector partners. It seeks to create a vision that sees farmers empowered through these partnerships, access to finance and financial literacy, and education on sustainable farming practices.

PAPAB is a huge, holistic project with many interlocking parts that affect nearly all aspects of farmers' lives. Often, its current scope and future potential are daunting, but the program can be understood by dividing it into a few essential components.

SUBSIDY SUPPORT

THE PNSEB SUBSIDY PROGRAM THAT UNDERSCORES PAPAB'S SUCCESS IS TRULY POWERED BY IFDC.

By carrying out PNSEB activities and providing technical support, the subsidy component of PAPAB reaches more than half a million households.

Despite the social and economic crisis affecting Burundi, the PNSEB demand continues to increase – from 18,000 tons of subsidized fertilizers purchased during the first PNSEB subsidy year in 2013 to 50,000 tons purchased in the current agricultural year. This means farmers are using more than eight times the amount of fertilizer than before PNSEB began.

There is also a strong increase in demand for locally produced dolomite, used as a calcareous amendment for acidic soils, with a current demand of 9,000 tons per year. It's not just about using more fertilizers: it's about using better fertilizers.

Fertilizer advice currently promoted in Burundi is based on trials and knowledge dating back several decades. Thanks to extensive soil analysis and nationwide fertilizer trials, new fertilizer formulas are being tested and approved by the Burundian Agricultural Research Institute with the assistance of experts from IFDC. These new formulas focus on micronutrients, which can be supplemented through the application of this calcareous amendment to overcome the high acidity levels throughout the country.

THE PNSEB PROCESS

REGISTRATION

STEP ONE

Beneficiary farmer households are registered in each of the 2,815 collines.

PLACING ORDERS

STEP TWO

Once registered, households can place an order by paying a non-refundable advance (about 20% of the subsidized price) at tellers of specific banks or microfinance institutions. These institutions are contracted directly by PNSEB. A farmer may order a maximum of 300 kilograms of fertilizers per year (each year including two agricultural seasons), though groups of farmers may buy more with special authorization.

IMPORTING FERTILIZER

STEP THREE

Burundi's demand is divided between at least 10 supply lots. Once orders are placed, selected suppliers produce dolomite and import fertilizers, which are then distributed to farmers by selected local traders or farmer cooperatives in each of the 386 sub-districts ("zones") of Burundi. The suppliers and agro-dealers are selected through public-private partnership (PPP) agreements.

ISSUING VOUCHERS

STEP FOUR

Meanwhile, vouchers are printed for each bag of fertilizer or dolomite ordered. These vouchers are delivered to the aforementioned tellers of banks and financial institutions, which received the orders by collecting the advances.

PAYMENT & PICKUP

STEP FIVE

Farming households pay the balance of the order to receive the corresponding vouchers. They present the vouchers to a distribution point close to their colline to receive the fertilizer.

REIMBURSEMENT OF SUPPLIERS

STEP SIX

Each supplier presents the vouchers to the voucher firm. The firm verifies the vouchers and presents them to the Ministry of Agriculture, which then reimburses the importers.

RESULTS

- 760,000 rural households are registered (47% of total rural households in Burundi).
- 50,000 tons of subsidized fertilizers and 9,000 tons of dolomite were sold in the last two agricultural seasons in 2017/18.
- Advance-to-Balance payment rate is steadily above 98%.

THE PIP APPROACH: DEVELOPING HOUSEHOLDS FROM THE GROUND UP

The Integrated Farm Planning approach called PIP (from the French *Plan Intégré du Paysan*) is a bottom-up approach that increases resilient farming systems through collaborative efforts. This approach was developed by the research partner in PAPAB, Wageningen Environmental Research (Alterra). The idea is to help farm households create a long-term vision for their futures and inspire them to take charge in changing their realities. This is done by working with all members of the household — from the youngest to oldest, each is empowered to provide input and participate in the decision-making on what will make their family succeed.

The PAPAB project will work directly with 80,000 farm households using the PIP approach in 14 communes scattered across the country.

By collaborating with each other and other farming families to grow more food while conserving their land and developing their community, these smallholder farmers will be able to join together to shape their collective futures.

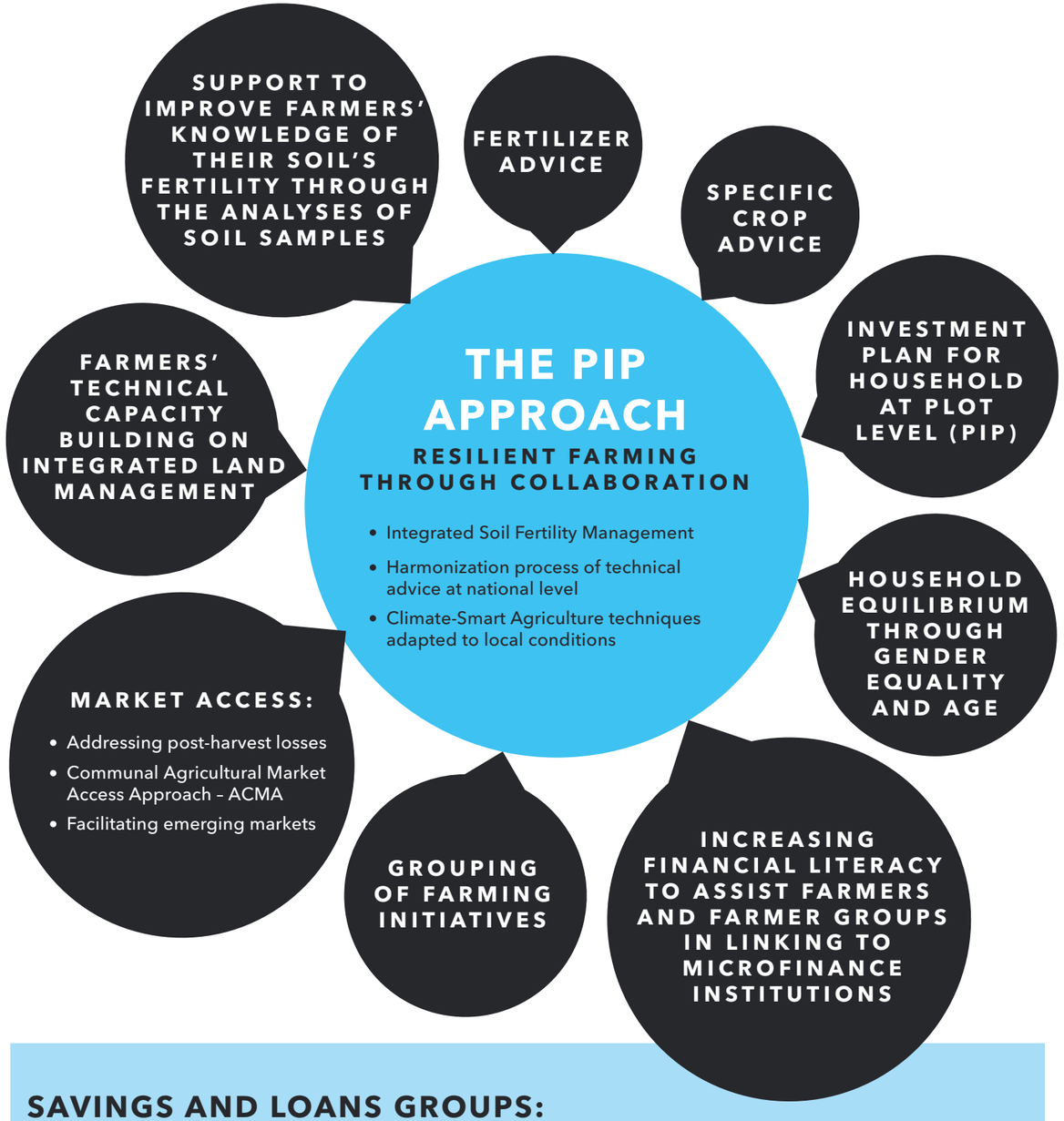
The approach is heavily used by IFDC throughout Burundi and is based on instilling the following principles in farmers:

- **Empowerment**: to believe in their own ability to change their reality, see opportunities to improve, and have intrinsic motivation to undertake action.
- **Integration**: to be aware of the importance of farm resilience and develop an attainable future farm vision with integrated activities.
- **Collaboration**: to exchange knowledge and learn from others to improve and carry out actions together to achieve wide-scale sustainable impact.

The PIP approach is as central to the PAPAB project as the PNSEB subsidy system. The integration and importance of the PIP approach can be visualized on the right.

GROW MORE, SELL MORE, STAY RESILIENT

By working with implementing partners ZOA, Oxfam, Wageningen Environmental Research (Alterra), Auxfin, and national non-governmental organizations (NGOs) such as OAP, ADISCO, and Réseau Burundi 2000+, PAPAB strives to sustainably increase food production by promoting market-oriented, climate-resilient farming. The PIP approach is what makes that happen, by focusing on healthy soils and motivated people. PIP enables PAPAB to provide integrated solutions at the household level by addressing many challenges that stand in the way of farmers' success.



SAVINGS AND LOANS GROUPS:

INTRODUCING FINANCIAL EDUCATION, PROVIDING OPPORTUNITIES TO SAVE, AND ESTABLISHING ACCESS TO CREDIT FOR PAPAB BENEFICIARIES

Within PAPAB, households develop action plans (PIPs) that show their vision over three to five years. As emerging entrepreneurs, they often do not qualify for loans at microfinance institutions. The Savings and Loans Groups solution has proven to be particularly suitable for financing their PIPs.

These groups consist of 10 to 25 people. The group collectively agrees to a certain amount of weekly contributions and allows members to access credit on mutually accepted terms. The farm households of PAPAB have increased their financial literacy and have been able to finance large parts of their investments in their PIPs – this includes improvements to their houses and the purchase of agricultural inputs such as seeds and fertilizers, equipment, and farm animals.

SEARCHING FOR SYNERGIES AND ALIGNING ACTIVITIES

Due to the easy way new initiatives and activities can integrate into the individual PIPs of farmer families, collaboration with other organizations is an integral and unique part of what makes PAPAB work.

All partners involved in the project are actively searching for collaboration with other projects and organizations to increase impact. Some examples include:

INTEGRATION OF NUTRITIONAL ADVICE

with a focus not only on increasing agricultural production but also on increasing nutritional knowledge.

DECREASING POST-HARVEST LOSSES

(currently 40% of production) by spreading basic pre-storage and storage knowledge, plus establishing facilities via synergy with the World Food Programme.

LINKING FARMERS

to produce processors developed in other projects.

INTEGRATED SEED SECTOR DEVELOPMENT PROJECT (ISSD)

an IFDC-Burundi project that develops the emerging seed sector, making high-quality seeds available.

ALIGNING PLANS

that are developed by farmers for their collines with governmental development plans.

EMPOWERING FARMERS

to access microfinance institutions.

MAIN INSTITUTIONS, ORGANIZATIONS & IMPLEMENTING PARTNERS OF PAPAB

- Embassy of the Kingdom of the Netherlands in Burundi
- Ministry of the Environment, Agriculture and Livestock
- Financial institutions (banks and microfinance institutions)
- Private operators (mainly importers and distributors of fertilizers)
- Structures of the local governments
- Agronomic research institutes
- International NGOs: Alterra, ZOA, Oxfam
- Local NGOs: ADISCO, OAP, Réseau Burundi 2000+

PAPAB FARMERS SHAPE THEIR FUTURES

GENEVIEVE MANISHIMWE

My name is Genevieve Manishimwe from Gatobo Hill. I was born to a poor farming family that relied on subsistence farming. I always thought we could achieve more. When I got married, I knew we weren't practicing agriculture as effectively as we could. The advent of PAPAB with its PIP approach provided a solution because it improved the way I cultivated my crops. By using the project's techniques, our production increased considerably, and now my home is food secure.

The project worked with my entire family to teach us how to plan and schedule activities in our household. Before the project interventions, the heavy rains would wash away almost all of our produce. Now we have set goals to properly landscape and protect our soil so that it is fertile and safe from erosion. We are also determined to apply other good agricultural practices and modern livestock breeding. For this reason, we have drawn four contour lines through training provided by PAPAB, and we plan to supplement our soil with organic matter like manure. To have manure, we bought a cow, pig, and goat. Because of modern breeding practices, the cow that we bought at 550,000 francs (U.S. $312) was sold at BIF 2,000,000 (U.S. $1,100). PAPAB and the PIP approach have stabilized our farm and our future, and I would like to see other hills participating.

THIERRY NKURUNZIZA

The PAPAB project taught us how to join a Savings and Loans Group. We learned how to save money to provide our day-to-day needs, and with 30 members banded together, we now have access to small loans. We have also planted 300 avocado trees as an income-generating activity. With each tree generating a potential BIF 47,000 (U.S. $26), we expect to earn BIF 14,100,000 (U.S. $8,000), which will benefit our families and enable us to improve our living conditions.

CYPRIEN NTAWUMARINDY

Since I began farming, I had never arranged my crops into neat patterns. With trainings from PAPAB, I learned to develop my plot by planting in rows and focusing on how I can collect rainwater to use during the dry season and prevent erosion. I dig small ditches to reroute and collect the water. The ample water allows me to produce considerably more bananas. My future plans are to build a better house for my wife and seven children.

ASIA

BANGLADESH • MYANMAR
NEPAL • TIMOR-LESTE

IFDC in Asia serves one of the most diverse areas of the world. In 2017, we implemented development projects and conducted assessments of the fertilizer value chain, fertilizer quality, and regulatory environment in the region.

Our work in Asia seeks innovative ways to develop sustainable agricultural production systems by adopting a holistic approach throughout the entire value chain involving firms, traders, and farmers. This includes developing and testing efficient nutrient technologies and agronomic practices at the farm level, strengthening agri-entrepreneurship, and influencing policy reforms through evidence-based economic analysis. In addition, IFDC's work in the region promotes agribusiness models that engage women and youth. In 2017, we empowered women farmers in Bangladesh to improve productivity of their horticulture crops and linked them to market actors.

Improving fertilizer efficiency is a major focus of IFDC research in Asia. Climate-smart agricultural technologies, like fertilizer deep placement (FDP), are helping farmers earn more income and mitigate agriculture's impact on the environment. We are also building the capacity of national scientists to measure greenhouse gas (GHG) emissions from improved technologies compared with traditional practices.

ACCELERATING VEGETABLE PRODUCTIVITY IMPROVEMENT (AVPI)

BANGLADESH (2017-2018)

***Donor** – Walmart Foundation*

AVPI is empowering low-income women horticulture farmers with enhanced agricultural production technologies to improve income and nutrition of farm families. The project is strengthening farmers' knowledge of good agricultural practices (GAPs) and markets and expanding the use of FDP technology in fruit and vegetable production. In addition, AVPI is introducing a method for producing seedlings using polynet houses with trickle irrigation.

2017 ACHIEVEMENTS

1. Nearly **30,000 female fruit and vegetable farmers** are directly benefiting from the project.
2. Project beneficiaries are using GAPs on **11,800 hectares (ha)** and FDP on **3,453 ha**.
3. Incremental yield increased by **16-18%** for 2017 summer vegetable crops (bitter gourd, cucumber, taro, and teasel gourd). Average incremental income per farm was U.S. **$59** from a small piece of land (30 decimals).
4. About **300 women farmers** participated in a marketing seminar to learn more about marketing their products and linking to buyers.

DRY ZONE AGRO-INPUT AND FARM SERVICES PROJECT

MYANMAR (2015-2018)

***Implementing Partners** – Private sector input and service providers (ISPs), Myanmar Department of Agriculture, and financial institutions*
***Donor** – Livelihoods and Food Security Trust Fund (LIFT), United Nations Office for Project Services (UNOPS)*

The Dry Zone project is improving farm advisory services by strengthening a network of agricultural ISPs. The project works with private sector ISPs to develop and distribute products, services, and information that enhance farmer productivity and profitability. These include inputs, such as seed, fertilizer, and plant protection products, along with crop management services and agri-machinery for land preparation, harvesting, and post-harvest processing.

2017 ACHIEVEMENTS

1. **55 ISPs** are directly benefiting from the project.
2. **196 farmer** training sessions and **61 farmer field days** were held with **12,000 farmers (30% women)**. These farmers received input vouchers to redeem at project ISPs. As a result, the ISPs reported incremental sales of **42.1 million Myanmar Kyats ($31,600)**.
3. **72 female extension workers** with the Myanmar Department of Agriculture received a refresher training course on climate-smart agriculture.

FEED THE FUTURE NEPAL SEED AND FERTILIZER (NSAF) PROJECT

NEPAL (2016-2021)

***Lead Implementing Partner** – International Maize and Wheat Improvement Center (CIMMYT)*
***Donor** – United States Agency for International Development (USAID)*

As a sub-grantee to CIMMYT, IFDC's role under NSAF focuses on fertilizer and integrated soil fertility management (ISFM). The fertilizer component updates ISFM and fertilizer recommendations, seeks to commercialize more precise fertilizer application equipment, and builds agro-input retailer and farmer cooperative knowledge of ISFM and fertilizer management using the "4R" approach (right fertilizer source, right rate, right time, and right place). The project also explores options for policy reform and an increased private sector role in fertilizer distribution.

2017 ACHIEVEMENTS

1. The project provided technical assistance to re-establish the Fertilizer Association of Nepal (now known as the Nepal Fertilizer Entrepreneurs Association, or NeFEA), which held its first general assembly meeting in 2017 and has **132 dues-paying members**.
2. Preparation and piloting of training materials were completed. Training sessions were held with **135 "intermediary" participants** who, in turn, will provide their knowledge to larger numbers of farmers.
3. **Two fertilizer products** – polymer-coated urea and urea briquettes – were tested in farmers' fields.

SUCCESS

BILKIS BEGUM DEMONSTRATES THE IMPORTANCE OF WOMEN FARMERS

In January 2017, the AVPI project selected Bilkis Begum as a cucumber demonstration farmer. She attended the orientation program at IFDC's AVPI Jessore office.

Following orientation, she selected a small portion of her vegetable field for growing cucumber as a demonstration crop. Her demo plot was divided into two sections – half using the traditional practice of applying broadcast urea and the other half for deep-placing urea briquettes. AVPI field staff and the sub-assistant agriculture officer (SAAO) of the Department of Agricultural Extension (DAE) assisted her in establishing the plot.

The demo plot contrasted the results of GAPs using urea deep placement (UDP) with those of farmers' practice using broadcast urea. AVPI organized a field day for non-users of GAPs and UDP technology to show the difference in yield rates from these two demo plots.

When her neighbors and fellow farmers came to see the plot, Begum explained that the plot demonstrating GAPs performed better. Besides the yield being 100 kilograms greater, the cucumber plants were markedly taller, greener, and healthier, meaning she could garner a higher market price for these crops.

Overjoyed with the higher yields from the UDP plot, Begum's family plans to use GAPs and UDP on all of their crops. Nearby farmers were excited to see the results and expressed an interest in using GAPs with UDP as well.

Begum's willingness to try a new technology offered her the opportunity to step out of her traditional role as housewife. She demonstrated to others in her village the extent to which women can contribute to their families' well-being. She is now a successful farmer who is leading other farmers to a better future.

FERTILIZER REGULATORY AND VALUE CHAIN ASSESSMENT IN MYANMAR

MYANMAR (2017-2018)

***Donor** – International Finance Corporation (IFC) of the World Bank Group (WBG)*
IFDC conducted an assessment of fertilizer quality in Myanmar with a focus on fertilizer regulatory and distribution systems. The data and information collected will support efforts of the Government of Myanmar (GOM) toward improving the quality of fertilizers available to and used by Myanmar farmers.

FERTILIZER SECTOR IMPROVEMENT (FSI+)

MYANMAR (2014-2019)

***Implementing Partner** – Syngenta*
***Donor** – USAID*
FSI+ promotes the judicious application of balanced fertilizer with UDP and the use of good quality seed, seeding rates, and GAPs. The project targets smallholder farmers in rice-rice and rice-gram cropping systems with a small pilot on maize production in southern Shan State. The project is strengthening the supply system of agricultural inputs, particularly the manufacture and sale of urea briquettes for UDP. In addition, FSI+ builds the capacity of fertilizer retailers to improve their business management and provide advisory services to farmers.

2017 ACHIEVEMENTS

1. **More than 2,600 project beneficiaries** used UDP in their rice farms. With UDP, rice farmers have increased their gross margins by **35%**.
2. Farmers applied improved technologies or GAPs on nearly **45,000 ha**.
3. **926 farmers** were trained in the 2017/18 dry season, bringing the total farmers trained to **9,772**.
4. The National Soil Fertility and Fertilizer Management Conference was held in Myanmar to discuss how to increase the nation's agricultural productivity and keep its soils healthy. Researchers presented **28 papers** covering soil fertility and crop nutrient management, environmental impacts of fertilizer, fertilizer quality, fertilizer recommendations, and farmer extension methods.

RAPID ASSESSMENT OF THE FERTILIZER REGULATORY FRAMEWORK FOR TIMOR-LESTE

TIMOR-LESTE (2017)

***Donors** – USAID's Avansa Agrikultura Project/Cardno Emerging Markets USA Ltd.*
IFDC conducted a rapid assessment of regulations governing fertilizers and pesticides in Timor-Leste and provided a set of recommendations for further action.

SOIL FERTILITY AND FERTILIZER MANAGEMENT OF MYANMAR

MYANMAR (2017)

***Donors** – USAID and Australian Centre for International Agricultural Research (ACIAR)*
At the request of the Ministry of Agriculture, Livestock and Irrigation (MOALI) of GOM, IFDC developed a strategy paper on soil fertility and fertilizer management to guide GOM policymakers to strengthen its fertilizer-related policies and programs to sustainably improve the nation's soils and fertilizer distribution system.

SUSTAINABLE SOIL MANAGEMENT COMPONENT (SSMC) OF THE OCP FOUNDATION AGRICULTURAL DEVELOPMENT PROJECT

BANGLADESH (2017-2019)

***Implementing Partners** – Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Bangladesh Department of Agricultural Extension (DAE), Bangladesh Agricultural Development Corporation (BADC), and Soil Resource Development Institute (SRDI).*
***Donor** – OCP Foundation*

The goal of SSMC is sustainable management of soil to enhance yields and farmers' incomes under resilient production systems. Specifically, the project works to evaluate the role of secondary and micronutrients on crop productivity as affected by soil acidity. SSMC also promotes balanced plant nutrient solutions and GAPs for improving crop productivity, crop profitability, and soil fertility, working through extension workers and agro-input retailers. The project is working in collaboration with national research and extension institutes.

2017 ACHIEVEMENTS

1. BRRI established **two on-farm trials**.
2. The project directly trained **840 farmers** and **147 retailers (14% women)**.
3. To demonstrate the results of GAP technology, **10 demonstrations** on wet season rice (*Aman*) were established and five field days were held with **510 farmers** attending **(30% women)**.
4. By the end of 2017, **590 farmers** were using improved nutrient management technologies and GAPs.

TECHNICAL ASSISTANCE TO BRRI AND BANGLADESH AGRICULTURE UNIVERSITY (BAU) FOR GHG EMISSIONS MEASUREMENT

BANGLADESH (2017-2019)

***Implementing Partners** – BRRI and BAU*
***Donors** – Government of Bangladesh (GOB) through Krishi Gobeshona Foundation (KGF) and International Rice Research Institute (IRRI)*

IFDC is assisting BRRI and BAU in measuring GHG emissions from FDP technology combined with alternate wetting and drying (AWD) technologies compared with farmers' practices of fertilizer application. Under the IFDC Accelerating Agriculture Productivity Improvement (AAPI) project, only nitric oxide and nitrous oxide emissions were measured. Now, both labs are also measuring methane. Therefore, the research is providing a complete picture of the role FDP plays in mitigating GHG emissions.

2017 ACHIEVEMENTS

1. In both the labs, the methane gas measurement equipment has been installed and total GHG emission measurement is continuing under a rice-based cropping system.
2. **Two scientific papers** were published in 2017 in international journals.

EAST AND SOUTHERN AFRICA

BURUNDI ● ETHIOPIA ● KENYA MOZAMBIQUE ● UGANDA

IFDC projects in East and Southern Africa are strengthening farmers' knowledge of good agricultural practices (GAPs) and increasing their access to quality fertilizers and seeds and to output markets. For example, IFDC employs the SMaRT framework (Soil testing, Mapping, Recommendations, and Technology transfer) for delivering balanced fertilizers to smallholder farmers. In addition, regional activities focus on association building, policy analysis, and market information.

By collaborating with national and regional partner organizations, governments, and donors, we support the development of competitive and sustainable agricultural value chains and create an enabling environment for agricultural intensification and private sector development. Our approach is not only to promote technology innovation but also to strengthen smallholder farm organizations. All projects include training and mentoring components.

AFRICAFERTILIZER.ORG (AFO)

AFRICA-WIDE (ONGOING)

***Implementing Partners** – International Fertilizer Association (IFA), African Fertilizer and Agribusiness Partnership (AFAP), Argus Media, African Union, Food and Agriculture Organization (FAO) of the United Nations, and International Food Policy Research Institute (IFPRI)*

AfricaFertilizer.org contributes to the development of a sustainable and profitable agriculture sector in Africa by providing clear and opportune information on fertilizers to the public and private sectors. The initiative coordinates partnerships and data-sharing mechanisms that provide fertilizer statistics and fertilizer market intelligence.

2017 ACHIEVEMENTS

1. AFO published fertilizer statistics (through 2016) from **16 countries** in partnership with national Fertilizer Technical Working Groups. In 2017, total fertilizer consumption reached **5.5 million tons** of products, a **17% increase** from 2016.
2. AFO monitored retail prices, subsidized prices, and international prices of fertilizers in **14 countries in sub-Saharan Africa**. These data form the most important part of the *FertiNews* e-bulletin that is distributed to more than **3,500 subscribers** globally.

INTEGRATED SEED SECTOR DEVELOPMENT (ISSD)

BURUNDI (2014-2018)

***Implementing Partner** – KIT Royal Tropical Institute of the Netherlands*
***Donor** – Embassy of the Kingdom of the Netherlands in Burundi*

To strengthen the seed sector in Burundi, ISSD focuses on building the capacity of seed producers in entrepreneurship and seed product technologies for potato, bean, maize, and rice. The goal is to ensure farmers' access to quality seeds at affordable prices. The project works to increase the volume of quality seeds produced and commercialized by seed enterprises in Burundi.

2017 ACHIEVEMENTS

1. More than **15,000 producers (50% women)** visited 500 project learning fields demonstrating seed production technologies.
2. Following workshops on the use of quality seed, producers purchased **182,500 tons of quality seed** through a bulk order system.
3. **120 producers** participated in a "training-of-trainers" session on the positive selection of potato cultures. In turn, they trained nearly **850 producers** who are now applying positive selection in their own potato fields.
4. ISSD supported **34 emerging seed entrepreneurs** who benefited from project co-financing for investments in storage and irrigation.
5. The project piloted an accreditation system for seed inspectors; **22 accredited seed inspectors** are now operational and supervising quality control on **306 fields**.

POTATO STORAGE PROJECT (PSP) I AND II

KENYA (2016-2017)

***Donor** – Embassy of Ireland in Kenya*

PSP I and II assisted in the construction of low-cost storage facilities, trained farmers on GAPs and post-harvest management, and linked farmers to markets and finance. PSP also trained local artisans in the construction of storage facilities.

CUMULATIVE ACHIEVEMENTS

1. **2,800 farmers** were trained.
2. **15 low-cost storage facilities** were constructed.
3. Farmers have been able to sell their produce during the off-season for higher prices (**from 800-1,000 to 2,200-4,000 Kenyan shillings** per sack, which is from about **U.S. $8-10 to $22-40** per sack).

SUCCESS

THE DAIRY QUEEN: HOLISTIC FARMING, SUSTAINABLE GROWTH

If you're looking for role models, try Beatrice Gichuru, innovator par excellence. Beatrice is a small-scale farmer in Kenya and a partner in IFDC's 2SCALE project. She has leveraged new technologies (introduced by 2SCALE) to build an intensive, highly profitable farm that combines dairy, poultry, pigs, and a range of crops.

Every inch of the 1.5-acre plot is used productively: maize, sorghum, green vegetables, cowpeas, pumpkins, bananas, yams, and even coffee bushes. There's also a chicken run and roomy, shaded pens for cows and pigs.

"The farm is a business," Beatrice explains. "I grow multiple crops and rear different kinds of livestock, so there is income coming in year-round. And by mixing crops and livestock, I am able to recycle nutrients – crop residues feed livestock, and the manure goes back to the crops. Nothing goes to waste."

She also has a day job teaching English at the local college. But with her technical expertise, she could teach agriculture as well. In February, the county government named her a Model Farmer, an example for others to follow. Several hundred small-scale farmers from across the country have visited Beatrice's farm to see her work first-hand.

IFDC and its partners bring in new technologies to increase productivity on smallholder farms, and Beatrice has been quick to adopt the entire package: soil testing, use of blended fertilizers, composting, and a range of improved dairy husbandry methods, including fodder production, vaccination regimes, better hygiene, and milk quality management.

2SCALE training programs helped her reconfigure feeding practices to cut costs and improve nutrition. She has reduced cultivation of Napier grass (formerly her main fodder source), replacing it with more nutritious fodder crops with high protein and energy content. She has increased milk yields by at least 30% while reducing her purchase of feed concentrate from 10 kilograms (kg) to just 2 kg per day.

Dairy is a profitable business, but it's also something more. "I come back from college, I go to the cow-pen to see my animals, and I feel good."

Beatrice has quadrupled the size of her herd in four years – and saved her profits to expand further. Last season she leased two new fields to grow specific varieties of maize and sorghum that are harvested, chopped up, and converted to silage for her cows. She currently sells about 350 liters of milk per week but plans to scale up. Her goal is to increase her herd from 12 to 40 animals, with better genetics and higher yields, and to sell processed yogurt rather than raw milk.

She attended a 2SCALE training program on biogas production. One week later, she purchased a small biogas digester. The digester, fed by manure from her 12 cows, produces enough organic fertilizer for a one-acre farm, byproducts that can be used in pig-feed and as gas for cooking. The biogas even provides warm water to wash the cows before they are milked.

"I do this for hygiene," Beatrice says. "But I think it makes my cows feel better – after all, everyone prefers hot water."

PROMOTION OF NUTRITION-SENSITIVE POTATO VALUE CHAINS IN EAST AFRICA (PNSP)

UGANDA (2017-2021)

***Implementing Partners** – KIT Royal Tropical Institute and Uganda National Potato Platform*
***Donor** – Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*

The project is designed to increase smallholder potato productivity and strengthen potato sector coordination while improving household-level nutrition through dietary diversification. PNSP-Uganda encourages diversified diets, particularly for pregnant and breastfeeding women, through the integration of nutrition and potato productivity at the farmer business school and community levels.

RESILIENT EFFICIENT AGRIBUSINESS CHAINS IN UGANDA (REACH)

UGANDA (2016-2017)

***Implementing Partner** – Cardno Emerging Markets*
***Donor** – Embassy of the Kingdom of the Netherlands in Uganda*

REACH-Uganda aims to improve farmers' market engagement, strengthen household resilience, and increase availability of agriculture support services for farmers and businesses in the rice and potato value chains. The project employs the Making Markets Work for the Poor (M4P) approach to develop market systems that will function more effectively, sustainably, and beneficially for low-income farmers.

2017 ACHIEVEMENTS

1. **18,000 farmers (10,000 female)** were trained in farming as a business.
2. Farmer business groups participating in the project reported average turnovers of approximately **U.S. $11,000** from their commodity sales.
3. About **128,200** potato minitubers were produced by screenhouse businesses in 2017; the minitubers were multiplied into **163 metric tons** of pre-basic and basic seed.
4. **U.S. $540,500** worth of co-financing partnership agreements were signed with five firms in the first year of implementation.

SUPPORTING AGRICULTURE PRODUCTIVITY IN BURUNDI (PAPAB)

BURUNDI (2015-2019)

***Implementing Partners** – Alterra, Wageningen University and Research, Oxfam Novib, and ZOA*
***Donor** – Embassy of the Kingdom of the Netherlands in Burundi*

PAPAB is promoting market-oriented, climate-resilient, and sustainable agricultural techniques, supported by targeted fertilizer subsidies. The project is reforming the fertilizer subsidy system to improve farmers' access to fertilizer and knowledge of improved farming methods. PAPAB uses a participatory approach (known as PIP) to boost farmers' motivation and morale to create their own business plans for a sustainable future.

2017 ACHIEVEMENTS

1. **675,000 farm households** registered to receive fertilizer under the 2017 subsidy program, an increase of **8%** from 2016.
2. **5,617 farmers (2,830 women)** are involved in the PIP approach, a holistic framework in which all members of a farmer's family are actively involved in planning improvements to their homes and businesses.
3. **500 learning fields** were established, involving **15,194 producers (7,654 women)**.

TOWARD SUSTAINABLE CLUSTERS IN AGRIBUSINESS THROUGH LEARNING IN ENTREPRENEURSHIP (2SCALE)

BENIN, CÔTE D'IVOIRE, ETHIOPIA, GHANA, KENYA, MALI, MOZAMBIQUE, NIGERIA, AND UGANDA (2012–2018)

***Implementing Partners** – Base of the Pyramid Innovation Centre (BoP Inc.) and International Centre for development oriented Research in Agriculture (ICRA)*
***Donor** – Netherlands Directorate-General for International Cooperation (DGIS) and private sector co-investment*

2SCALE works with the private sector, public sector agencies, development organizations, universities, and others to stimulate agribusiness development, strengthen capacity, and accelerate the adoption of improved technologies. 2SCALE is fundamentally about inclusive business and coordinates grassroots actors to build local networks, enabling farmers, traders, processors, and others to work together as equal partners for mutual benefit.

CUMULATIVE ACHIEVEMENTS

1. **Nearly 585,000 farmers (36% women)** were reached in nine countries.
2. More than **2,000 producer groups and cooperatives** improved their technical and business skills and are engaging in collective marketing or purchase.
3. More than **1,500 small and medium enterprises** are involved in capacity strengthening programs.
4. Pilot programs have helped develop and test-market affordable, nutritious food products for low-income families: cooking oil, soya milk, fortified porridge and more.

TOYOTA TSUSHO FERTILIZER AFRICA

KENYA (2015-2018)

***Donor** – Toyota Tsusho Fertilizer Africa*

IFDC provided technical advice to Toyota Tsusho Fertilizer Africa on the development and demonstration of crop- and soil-specific fertilizer blends. Technical support in 2017 included:

- Training on fertilizer formulation.
- Trial design for product evaluation in rice and maize.
- Advice in formulating potato and sugarcane fertilizers.
- Assistance and delivery of ingredients for trials.
- Facilitation of potential Toyota customer contacts in Rwanda and Uganda.
- Assistance in interpretation of trial results.
- Implementation of trials on N sources and micronutrient placement and timing.

UPSCALING THE CASSAVA VALUE CHAIN IN MOZAMBIQUE

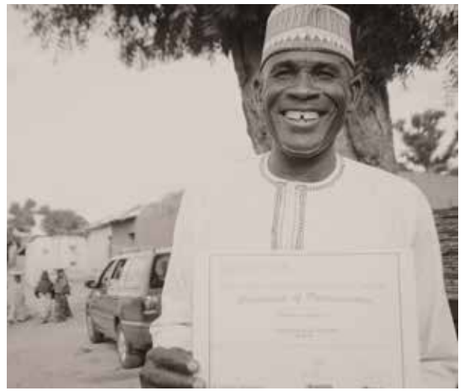
MOZAMBIQUE (2014-2017)

***Implementing Partner** – Dutch Agricultural Development and Trading Company (DADTCO)*
***Donor** – United States Agency for International Development (USAID) through AGRA's Scaling Seeds and Technologies Partnership in Africa (SSTP) Program*

Project objectives were to improve farmers' access to improved cassava varieties, build farmer capacity, and strengthen the cassava value chain by connecting farmer groups to buyers, input suppliers, and others. More than 3,600 farmers (1,748 women) were trained on improved production practices, and 1,000 "lead farmers" underwent training-of-trainers programs. These farmers are disseminating improved technologies in their communities. More than 1,800 farmers are now registered suppliers to the processing company DADTCO.

CUMULATIVE ACHIEVEMENTS

1. More than **12,000 farmers** are using improved technologies on **8,000 ha**; many increased yields to above 15 tons/ha.
2. **6 million cuttings** of improved high-yielding cassava varieties were distributed to farmers.
3. **106 demonstration plots** were established; field days attracted **4,800 farmers (2,900 women)**.
4. **27 collection centers** were built to improve aggregation efficiency. The centers also are being used for farmer training and input sales.
5. **Two fertilizer blends** were introduced: a high-N blend to stimulate stem production and a high-K blend to stimulate root production.



NORTH AND WEST AFRICA

BENIN • BURKINA FASO
CÔTE D'IVOIRE • GHANA • MALI
NIGER • NIGERIA • SENEGAL • TOGO

IFDC's portfolio in West Africa is sizable and diverse. Projects address integrated soil fertility management (ISFM), good agricultural practices (GAPs), fertilizer policies and regulations, and input and output market development. Core activities include capacity building of all agricultural value chain actors and facilitation of an enabling policy environment. Our work in the region supports the development and implementation of regional agricultural policies within the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (UEMOA).

Interventions driven by the private sector improve the potential for agricultural development in Africa. Therefore, we collaborate with national and regional partners to deliver private sector-led solutions to structural problems in the agriculture sector. IFDC has refined its Competitive Agricultural Systems and Enterprises (CASE) approach to prove that a dynamic of enthusiasm and "can-do" business attitude among all value chain actors can be created, leading to substantial and sustainable smallholder-based agricultural development.

AFRICAFERTILIZER.ORG (AFO)

AFRICA-WIDE (ONGOING)

***Implementing Partners** – International Fertilizer Association (IFA), African Fertilizer and Agribusiness Partnership (AFAP), Argus Media, African Union, Food and Agriculture Organization (FAO) of the United Nations, and International Food Policy Research Institute (IFPRI)*

AfricaFertilizer.org contributes to the development of a sustainable and profitable agriculture sector in Africa by providing clear and opportune information on fertilizers to the public and private sectors. The initiative coordinates partnerships and data-sharing mechanisms that provide fertilizer statistics and fertilizer market intelligence.

2017 ACHIEVEMENTS

1. AFO published fertilizer statistics (through 2016) from **16 countries** in partnership with national Fertilizer Technical Working Groups. In 2017, total fertilizer consumption reached **5.5 million tons** of products, a **17% increase** from 2016.
2. AFO monitored retail prices, subsidized prices, and international prices of fertilizers in **14 countries in sub-Saharan Africa**. These data form the most important part of the *FertiNews* e-bulletin that is distributed to more than **3,500 subscribers** globally.

COMMUNAL APPROACH TO AGRICULTURAL MARKET ACCESS IN BENIN (ACMA BENIN)

BENIN (2013-2017)

***Implementing Partners** – CARE International Benin-Togo, Sahel Capital and Partners Ltd. of Nigeria, Benin Consulting Group International, and KIT Royal Tropical Institute*
***Donor** – Embassy of the Kingdom of the Netherlands in Benin*

ACMA Benin worked with local governments and more than 30,000 agricultural producers, traders, and smallholder farmers to facilitate trade with small- and medium-sized private enterprises based in Nigeria, along Benin's western border. The project assisted in the organization of farmers and traders to create agribusiness clusters to increase producers' leverage in negotiating trade deals with companies across the border and in increasing revenues received into Benin. ACMA beneficiaries also increased trade with buyers within Benin, with efforts focused on the growing private sector in key commercial areas, such as Cotonou. Public-private partnerships in ACMA zones reinforced a joint commitment between local government and the private sector to increase profitable trade across the border and within the country. Progress continues under ACMA II, which also supports an expanded project area.

CUMULATIVE ACHIEVEMENTS

1. **32,015 economic actors (51% women)** and **431 organizations** were organized into **41 agribusiness clusters**, usually linked to specific value chains.
2. **91 formal contracts** were established between economic actors in Benin and Nigeria.
3. The amount of products marketed to Nigeria and Benin by actors in the ACMA-supported municipalities increased by **23,057 tons** (worth **6,282 million FCFA**, or **U.S. $11.85 million**).

COCOA REHABILITATION AND INTENSIFICATION PROGRAMME (CORIP)

GHANA (2013-2017)

***Lead Implementing Partner** – Solidaridad West Africa (SWA)*
***Donor** – Embassy of the Kingdom of the Netherlands in Ghana*

CORIP intensified cocoa production systems in Ghana by improving access to inputs and extension services. IFDC provided technical support for agro-input services development and delivery, ISFM technology in cocoa production systems, and fertilizer recommendations for cocoa.

CUMULATIVE ACHIEVEMENTS

1. **20 Rural Service Centers** were established to provide cocoa production-related services to farmers, including agro-inputs, training, and access to financial services.
2. **645 ISFM demonstration plots** were established.
3. **41,488 farmers** were trained in ISFM and GAPs.
4. **29 "plant doctors"** were trained and certified in diagnosing and treating plant pests and diseases.

SUCCESS

PROGRAM IMPROVES AVAILABILITY AND USE OF FERTILIZER IN WEST AFRICA

Funded by the U.S. Agency for International Development (USAID) from 2012 to 2017, the West Africa Fertilizer Program (WAFP) provided regional leadership to improve the fertilizer policy and regulatory framework. By facilitating private sector leadership, WAFP strengthened fertilizer recommendations and supply and distribution systems. IFDC and regional stakeholders, including ECOWAS and AFAP, made significant efforts toward increasing sustainable agricultural productivity through improving regional availability and use of appropriate, low-cost fertilizer.

WAFP's efforts contributed to a 30% increase in apparent fertilizer consumption among the nine top-consuming countries in the region. Due in part to the increase in demand, along with the identification of business opportunities to reduce cost barriers, the price of fertilizer in West Africa has decreased by an average of 24% since the beginning of the program. To promote the correct use of suitable fertilizer for optimal agricultural yield, WAFP developed productivity-enhancing agricultural technologies. This included producing interactive maps identifying fertilizer use recommendations for 13 crops in nine countries that cover four agro-ecological zones.

While effectively increasing demand and correct use of appropriate fertilizer, WAFP recognized the need to ensure farmers have access to high-quality fertilizers that are labeled properly and include needed nutrients.

Farmers' confidence in the quality of fertilizer and willingness to use the needed inputs in future seasons will increase as they realize the full yield potential that comes with correctly formulated fertilizers.

WAFP worked with ECOWAS and its Member States to improve the fertilizer regulatory environment. The program succeeded in facilitating a harmonized regional regulation and worked with Member States to adopt and begin implementation of ECOWAS Regulation C/REG.13/12/12. At the end of the program, 12 out of 15 ECOWAS Member States plus Chad had published the regulation in their national gazettes. WAFP also improved the fertilizer policy environment through efforts to enhance national subsidy activities and guide governments on steps to be taken to build smart subsidy programs. In addition, WAFP facilitated the establishment of the West Africa Fertilizer Association (WAFA) to champion the interests of the fertilizer sector in the region and ensure private sector leadership that will enhance the capacity to provide appropriate, low-cost fertilizers to farmers.

Progress in strengthening WAFA, improving fertilizer recommendations, developing an input package approach, and implementing the ECOWAS Fertilizer Regulation will continue under the new Enhancing Growth through Regional Agricultural Input Systems (EnGRAIS) project, funded by USAID. EnGRAIS also will promote the use of the fertilizer subsidy guidance developed under WAFP to reform national-level fertilizer subsidy programs and to stimulate commercial activity and investment in the sector.

COMMERCIAL VEGETABLE SECTOR IN GHANA (GHANAVEG)

GHANA (2013-2017)

***Implementing Partners** – Wageningen University and Research Centre, Netherlands-African Business Council, and Seed2Feed*
***Donor** – Embassy of the Kingdom of the Netherlands in Ghana and the private sector*

GhanaVeg worked to establish a sustainable and internationally competitive vegetable sector that contributed to inclusive economic growth and continuously innovated products and services. The initiative targeted high-end domestic and international markets (supermarkets, hotels, restaurants, and exports).

CUMULATIVE ACHIEVEMENTS

1. GhanaVeg was instrumental in the Ghana Vegetables Task Force, which assisted in lifting the ban on the export of vegetable products to the European Union (EU) by working with stakeholders to develop a "Road Map for Pest Reduction in Ghana's Export Vegetable Sector."
2. GhanaVeg engaged in public-private discussions to fortify entry and exit points in order to vet products before they are exported to the EU.
3. **30 limited liability companies** were provided funding (about **U.S. $59,000** each) to work with outgrowers to buy pack houses, tractors to plow land, vans, etc.
4. **60 agronomists** (Trainers of Trainers) were trained on pests and diseases, fertilizer application, crop management, nursery establishment, and integrated pest management. The project organized field days involving about **1,200 farmers**.
5. GhanaVeg produced a vegetable cooking television show (**14 30-minute episodes**).

FEED THE FUTURE GHANA AGRICULTURE TECHNOLOGY TRANSFER PROJECT (ATT)

GHANA (2013-2018)

***Implementing Partners** – Iowa State University, Center for Development Innovation of the Wageningen University and Research Centre, and Ghana Agricultural Associations Business Information Center (GAABIC)*
***Donor** – USAID/Ghana*

ATT is improving Ghana's agricultural research and extension systems by creating private sector-led agricultural technology transfer mechanisms and linking research-extension systems and producers in a market-driven approach to seed value chain development. ATT is also strengthening access to critical production inputs, including affordable finance, labor-saving technologies, and dissemination of GAPs. The goal of ATT is to increase productivity of smallholder rice, maize, and soybean producers in northern Ghana through the use of advanced agricultural technologies and agronomic practices, such as ISFM.

2017 ACHIEVEMENTS

1. The project built **three state-of-the-art seed labs** for the Ghana Seed Inspection Units and trained lab staff.
2. **165,250 farmers** are applying improved technologies and management practices covering **93,940 hectares (ha)**. **30,760** women have been trained in GAPs and ISFM.
3. Private sector actors receiving ATT support earned **U.S. $7,891,000 in incremental sales.**
4. Yields for ATT beneficiary farmers have increased by **98.5% for maize**, **85.5% for rice**, and **96.5% for soybean**.

FEED THE FUTURE NIGERIA AGRO-INPUTS PROJECT

NIGERIA (2014-2017)

***Implementing Partners** – Hello Tractor, AGTHO Merchants and Co., Albarka Agro-Allied and Chemical, Harvest Field Industries, MBS Fertilizers, Feed the Future Nigeria Livelihoods Project, Cybernetics, Psaltry International, National Program on Food Security, Fortis Microfinance Bank, LAPO Microfinance Bank*
***Donor** – USAID/Nigeria*

The project promoted a private sector-led agricultural inputs market that enabled farmers to access quality and affordable inputs. The ultimate goal was to help Nigerian smallholder farmers increase agricultural productivity. Agro-dealers were trained and certified on product knowledge and business management practices. The project also expanded agro-dealer networks to women, youth, and other vulnerable groups in rural areas as well as linked agro-dealers to financial institutions and end markets.

CUMULATIVE ACHIEVEMENTS

1. **1,500 agro-dealers** were trained and certified.
2. **4,000 farmers** were exposed to new technologies, including urea deep placement (UDP).
3. Agro-input dealers benefiting from the project made new investments valued at **$500,000**.
4. Farmers applying project-promoted technologies have experienced a **50% increase in yields**.
5. Microfinance institutions disbursed more than **$30,000** to **60% of targeted beneficiaries**.

MCC/MCA NIGER FERTILIZER SECTOR REFORM

NIGER (2017-2021)

***Implementing Partner** – Ministry of Agriculture and Livestock, EndSight Consulting*
***Donor** – Millennium Challenge Corporation (MCC)/ Millennium Challenge Account (MCA) Niger*

In 2017, in response to a request by the Government of Niger, the MCC, through the MCA, selected and funded IFDC to provide technical assistance for the reform of the national fertilizer sector under a project organized in two phases. In Phase 1 (October 2017 to January 2018), the project developed a reform plan to be validated by national stakeholders. Phase 2 (2018-2021) will support implementation of the plan.

2017 ACHIEVEMENTS

1. Review studies were conducted on national fertilizer policies and legislation, prices and cost structure for fertilizer distributed in Niger, and the national input subsidy program with Centrale d'Approvisionnement en Intrants et Matériels Agricoles (CAIMA).
2. Key results of these studies were shared through intense consultation with national stakeholders across the **eight regions** of the country.
3. A fertilizer sector reform plan was developed by IFDC, validated by national stakeholders, and adopted by the Council of Ministers of the Government of Nigeria.

REALIZING SORGHUM AND MILLET AGRICULTURAL PRODUCTIVITY GAINS IN THE SAHEL/NIGERIA (SMS)

NIGERIA (2016-2018)

***Lead Implementing Partner** – Context Global Development*
***Donor** – Bill & Melinda Gates Foundation*

The pilot project supports sorghum smallholder farmers in Northern Nigeria to increase productivity by accessing structured demand channels. IFDC is partnering with Nestlé to source high-quality sorghum from Nigerian smallholder farmers, empower 1,000 of them to develop farming as a business, and strengthen business relationships among value chain actors and supporters.

2017 ACHIEVEMENTS

1. The project reached **10,671 smallholder farmers (31% women)** and integrated them into the sorghum value chain led by Nestlé.
2. After adopting and investing in improved farming and post-harvest practices, farmers improved their productivity from **0.95 metric tons (mt) to 1.85 mt/ha**.
3. About **$100,000 in finance for inputs** were available for smallholder farmers through collaboration with a local microfinance bank called LAPO.
4. Private sector contributions totaled about **$255,000** (from Nestlé, aggregators and producer organizations, and other local actors).
5. Household annual income from sorghum production and sale to Nestlé increased by **307% from $143 to $583**. More than **98% of sorghum** sourced by Nestlé from intervention areas met Nestlé grain quality standards (with respect to mycotoxin, pesticide, and zaluminum contamination).

SCALING UP FERTILIZER DEEP PLACEMENT AND MICRODOSING TECHNOLOGIES (FDP MD) IN MALI

MALI (2014-2019)

***Implementing Partners** – ACDI/VOCA Cereal Value Chain Project, World Vegetable Center, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Livestock for Growth Program (L4G)-Mali, and Regional Directorates of Agriculture*
***Donor** – USAID/Mali*

FDP MD is increasing cereal and vegetable productivity through innovative fertilizer-based technologies while improving resource-poor farmers' access to quality and nutritious food in Mali.

2017 ACHIEVEMENTS

1. **106,855 rice producers** were trained on FDP, and **120,827 millet and sorghum farmers** were trained on MD.
2. The use of FDP and MD resulted in yield increases of **1.2 mt of lowland rice**, **2.2 mt of irrigated rice**, **0.55 mt of millet**, and **0.72 mt of sorghum**.
3. Farmers' gross margins increased by **$340/ha** for **lowland rice**, **$1,0376/ha** for **irrigated rice**, **$375** for **millet**, and **$329** for **sorghum**.
4. **75 full-time equivalent (FTE) jobs** (including **62 continuous jobs**) were created in machine operation and deep placement on FDP plots.

SMALLHOLDER AGRICULTURAL PRODUCTIVITY ENHANCEMENT PROGRAM (SAPEP)

BENIN, BURKINA FASO, CAMEROON, MALI, AND NIGER

***Donor** – Islamic Development Bank*

SAPEP aims to increase the productivity of rain-fed and irrigated production systems through the integration of agricultural value chains. The project addresses the production and distribution of agricultural inputs, diffusion of technologies and agricultural practices, and stakeholder capacity building.

SUPPORTING THE MODERNIZATION OF FAMILY FARMS – INPUTS COMPONENT (PAMEFA-Vi)

BURKINA FASO (2015-2018)

***Implementing Partners** – Association of Agricultural Input Wholesalers and Retailers (AGRODIA), Directorate General of Vegetable Productions (DGPV), and the Institute of Environment and Agricultural Research (INERA)*
***Donor** – Swiss Agency for Development and Cooperation (SDC)*

Through the Inputs Component of PAMEFA, IFDC is helping farmers to access quality inputs at affordable prices and advice on their proper use. PAMEFA-Vi is strengthening input supply (distributors and their organizations) and demand (producers and their organizations) through capacity building.

2017 ACHIEVEMENTS

1. **36 demonstration tests** were conducted, involving **7,751 producers**, on improved seeds and appropriate fertilizer formulas and doses.
2. **Five Agricultural Technology Transfer Centers** are active in five regions, connecting input distributors and supply firms.
3. **507 input distributors** were trained on technical knowledge of inputs and equipped to provide advice to **30,000 input shop customers/farmers**.
4. PAMEFA assisted the Agricultural Input and Commodities Marketing Cooperative (COCIMA) to conform to new regulations on cooperative associations.
5. **453 local opinion leaders** (including local elected officials, decentralized state agents, and traditional and religious authorities) were made aware of laws regarding inputs in Burkina Faso.

TRANSFORMING IRRIGATION MANAGEMENT IN NIGERIA (TRIMING)

NIGERIA (2017-2018)

***Implementing Partner** – National Agriculture Extension and Research Liaison Services*
***Donor** – World Bank through the TRIMING project under the Federal Ministry of Water Resources in Nigeria*
TRIMING assists farmers in Nigeria's northern irrigation schemes to increase their agricultural productivity through improvements to the irrigated agronomy and value chain development. IFDC's consultancy role is to provide supervisory extension services to four state-level Agricultural Development Programs (ADP) and introduce and promote modern agricultural technologies, particularly UDP technology.

TOWARD SUSTAINABLE CLUSTERS IN AGRIBUSINESS THROUGH LEARNING IN ENTREPRENEURSHIP (2SCALE)

BENIN, CÔTE D'IVOIRE, ETHIOPIA, GHANA, KENYA, MALI, MOZAMBIQUE, NIGERIA, AND UGANDA (2012–2018)

***Implementing Partners** – Base of the Pyramid Innovation Centre (BoP Inc.) and International Centre for development oriented Research in Agriculture (ICRA)*
***Donors** – Netherlands Directorate-General for International Cooperation (DGIS) and private sector co-investment*
2SCALE works with the private sector, public sector agencies, development organizations, universities, and others to stimulate agribusiness development, strengthen capacity, and accelerate the adoption of improved technologies. 2SCALE is fundamentally about inclusive business and coordinates grassroots actors to build local networks, enabling farmers, traders, processors, and others to work together as equal partners for mutual benefit.

CUMULATIVE ACHIEVEMENTS

1. **Nearly 585,000 farmers (36% women)** were reached in nine countries.
2. More than **2,000 producer groups and cooperatives** improved their technical and business skills and are engaging in collective marketing or purchase.
3. More than **1,500 small and medium enterprises** are involved in capacity strengthening programs.
4. Pilot programs have helped develop and test-market affordable, nutritious food products for low-income families: cooking oil, soya milk, fortified porridge, and more.

USAID 4-COUNTRY COTTON PARTNERSHIP (C4CP)

BENIN, BURKINA FASO, CHAD, AND MALI (2014-2018)

***Implementing Partners** – Cultural Practice and ICRA*
***Donor** – USAID/West Africa*
The USAID C4CP project increased incomes for cotton producers and processors in West and Central Africa by introducing competitive and sustainable strategies to boost farm productivity and improve post-harvest processes. The project focused on partnerships that support cotton sector development and addressed the challenges women face in cotton-producing households. C4CP developed a broad network of partners comprising 40 cotton sector stakeholder structures in West and Central Africa. In 2017, the project team focused on activities designed to capitalize on project-produced innovations beyond the life of the project.

2017 ACHIEVEMENTS

1. **Seven innovative, gender-sensitive training modules** were organized into **three training manuals** on: GAPs for the production of conventional cotton and rotational crops (cereals and legumes), post-harvest (PH) technologies, and GAPs for the production and marketing of **organic cotton**.
2. **56 training posters** on various technologies were developed.
3. **Five workshops** were held in 2017 to disseminate agricultural technology packages/modules and other awareness-raising and advocacy materials.
4. **478 senior trainers** and extension agents were trained on BPA and PH technologies.
5. C4CP successfully tested Ignitia's ISKA technology to forecast rain using SMS messages. About **7,070 producers** in Mali and Burkina Faso participated in testing the decision support tool, which builds farmers' resilience to climate change.

USAID WEST AFRICA FERTILIZER PROGRAM (WAFP)

ECOWAS MEMBER STATES (2012–2017)

***Implementing Partner** – AFAP*
***Donor** – USAID/West Africa*
USAID WAFP provided regional leadership to improve the fertilizer policy and regulatory framework. The project also strengthened supply and distribution systems. WAFP strived to build a conducive fertilizer business environment by compiling and distributing market and business information, facilitating the establishment and strengthening of WAFA, as well as creating networking opportunities and fostering business engagement throughout the region. WAFP worked with ECOWAS and its Member States to improve the enabling fertilizer regulatory environment. Additionally, WAFP guided governments on steps to be taken to build smart subsidy programs.

CUMULATIVE ACHIEVEMENTS

1. Apparent fertilizer consumption increased by **30%** among the nine top-consuming countries in West Africa.
2. Fertilizer prices in the region decreased by **24%**.
3. **12 of 15 ECOWAS Member States and Chad** published the ECOWAS Regulation C/REG.13/12/12 (on fertilizer quality control) in their national gazettes.
4. Fertilizer subsidy program guidance was produced, submitted for review by ECOWAS, and is expected to be issued as an ECOWAS directive to ensure that future programs in West Africa become smart subsidy programs.
5. Interactive maps were developed to identify recommendations on fertilizer use for 13 crops in nine countries covering four agro-ecological zones.

IFDC RESEARCH & TRAINING

IFDC Research and Training brings fertilizer ideas from the lab to production to the field, integrating research, product testing, technology transfer, and economic analysis into one system. The goal is to bridge the gap between soil and fertilizer research and improved livelihoods for farmers.

SOIL AND FERTILIZER RESEARCH

IFDC researchers develop and refine technologies and practices that improve nutrient management and strengthen agricultural productivity. These innovations play an important role in helping smallholder farmers build resilience to a changing climate and thrive under stress-prone conditions, such as drought, soil salinity, and soil acidity. In addition, IFDC research seeks to reduce the environmental impact of fertilizers, both organic and inorganic.

In 2017, IFDC conducted numerous research and adaptive trials to evaluate the effectiveness of fertilizer deep placement and other management practices under favorable and stress conditions, micronutrients for balanced fertilization and improved efficiency, and activated phosphate rock as an energy-efficient alternative to 100% water-soluble P fertilizers. Studies also explored the role of enhanced efficiency fertilizers in slowing nitrogen (NH_3, N_2O, and NO) and carbon dioxide emissions and in improving carbon sequestration.

IFDC is focusing on balanced plant nutrition research to improve fertilizer recommendations that increase crop yields, protect soil health, and improve farmer profitability. In 2017, IFDC developed Soil-SMaRT, a framework for delivering balanced fertilizers to smallholder farmers. The SMaRT concept stands for Soil testing, Mapping, Recommendations development, and Technology transfer.

IFDC's research team also conducts policy analysis to advance policy reform and market development related to fertilizers and complementary inputs. This analytical approach enables IFDC to support the development of fertilizer markets that allow greater private sector participation and investment with appropriate public sector regulatory oversight.

In 2017, IFDC began conducting a series of fertilizer quality assessments in Eastern Africa and in Myanmar. The purpose is to make country fertilizer quality diagnostics and identify factors that might cause the quality problems. The assessments also propose solutions to address these factors.

The team also conducted impact assessment studies and a West African fertilizer cost buildup assessment. Additional policy activities in 2017 included:

- Creation of networking and knowledge-sharing platforms on fertilizer
- Fertilizer cost buildup assessments
- Input subsidy assessments
- Review of agro-dealer development programs
- Documentation of policy reform processes

USAID supports IFDC research through the Soil Fertility Technology Adoption, Policy Reform, and Knowledge Management Project. In addition, we are partnering with land-grant and research universities and private sector partners to leverage resources and expertise and to drive innovative ideas that ultimately benefit the world's smallholder farmers.

SOIL-SMaRT: DELIVERING BALANCED CROP NUTRITION TO SMALLHOLDER FARMERS IN AFRICA

Most smallholder farmers in Africa have access to fertilizers containing only primary nutrients: nitrogen (N), phosphorus (P), and potassium (K). But crops, like humans, need a full range of nutrients for healthy growth. Analyses indicate that soils across the continent are deficient in secondary and micronutrients. According to IFDC research and field trials, addressing these deficiencies can increase yields dramatically.

Balanced crop nutrition refers to feeding crops with a balanced suite of nutrients that are lacking in the soil. Soil-SMaRT is a step-by-step framework developed by IFDC to deliver balanced fertilizers to farmers.

SOIL-SMaRT COMPONENTS

Understanding the extent of nutrient deficiencies is crucial to developing and marketing improved fertilizers. Complete **soil analyses** by qualified laboratories can identify major nutrient gaps. These analyses must be conducted on a broad scale, using hundreds of samples that represent a wide range of agro-ecologies and soil types.

Soil nutrient and soil acidity maps serve as guides for developing crop-specific fertilizer blends that correspond to major soil types and crops. The maps help fertilizer producers understand which nutrient and acidity constraints need to be addressed. They also demonstrate to policymakers the need to accommodate multi-nutrient fertilizers into the market.

Recommendations development involves determining which nutrients belong in specific fertilizers and the most appropriate nutrient rates. In this step, trials and field evaluations are critical for developing and evaluating fertilizer formulations. Developed products should be validated on a broad scale within the agro-ecology and with the specific crops they are intended to address.

Technology transfer involves establishing farmer demand and meeting that demand through efficient supply channels. Governments and private companies may choose many forms of advertising to promote their products, such as selling in small packs or working through extension services to increase farmer awareness.

A region's **policy and regulatory environment** can help or hinder the process of bringing balanced fertilizers to farmers. Policies and regulations should be well-understood and taken into consideration in the development of new fertilizer products.

FERTILIZER DEVELOPMENT, PRODUCTION, AND RESEARCH

2017 was a dynamic year for IFDC's fertilizer engineering team. The group, along with soil scientists and lab analysts, conducted research/testing for several private sector clients in 2017 in the IFDC laboratories, greenhouses, test fields, and pilot plants. In addition, product physical property tests, industry training courses, product analyses, and fertilizer manufacturing facility evaluations were conducted regularly.

IFDC pilot plant and laboratory facilities include three fully continuous granulation plants, two phosphoric acid plants, and a bulk-blending unit. The plants range in size from bench-scale to medium- and large-scale. In addition, IFDC has compaction/granulation, briquetting, pelletizing, and tableting labs, as well as a coating laboratory.

To complement research activities, IFDC has analytical laboratories for chemical and physical characterizations of fertilizer materials and soils and for assessing the nutrient status of plant tissues.

The pilot plant engineering staff collaborates with IFDC scientists to conduct research on the properties of various fertilizer materials and their production feasibility. The group also works with IFDC economists to evaluate products' overall market feasibility.

Since 1978, more than 2,000 research and development tests have been conducted in IFDC facilities.

ADDITIONAL FERTILIZER TECHNOLOGY ACTIVITIES

- Design, technical assistance during construction, and startup management of fertilizer production units
- General and specialized technical training programs
- Development and evaluation of new fertilizer products
- Fertilizer production for greenhouse and field evaluation
- Process design
- Production cost analyses
- Techno-economic studies
- Commercial facility assessment

IFDC TRAINING WORKSHOPS OFFER OPPORTUNITIES FOR KNOWLEDGE AND NETWORKING

EVERY YEAR IFDC'S TRAINING WORKSHOPS OFFER OPPORTUNITIES FOR AGRICULTURAL PROFESSIONALS TO HEAR ABOUT AND DISCUSS THE LATEST RESEARCH AND FINDINGS IN A VARIETY OF TOPICS, FROM AGRICULTURAL POLICY ISSUES TO BEST PRACTICES IN FERTILIZER MANUFACTURING, RESEARCH, AND PRODUCTION.

In August 2017, IFDC held its historically most popular workshop, the USA-based study tour on advances in agricultural technology. Traveling on a two-week tour from IFDC headquarters in Muscle Shoals, Alabama, 18 participants from 10 countries participated in workshop sessions, discussions, farm tours, and visits to agricultural research organizations and cooperatives across four states and Washington, D.C.

The annual training brought a diverse group of agricultural professionals, ranging from researchers to policymakers to computer information science experts. While each person came with a desire to witness advances in their specific fields, the manifold interests allowed the participants to engage in lively conversations and broaden their perspectives.

Learning sessions and field visits were often bookended by animated discussions of varying viewpoints on issues such as fertilizer applications, water management, and agricultural policies. Often accompanied by a good story or two, opposing perspectives ended in understanding and, more often than not, laughs all around.

Further enriching the learning process, field visits often gave attendees the opportunity to see first-hand the benefits of new technologies and experience the sophistication of the U.S. agricultural industry. At Isbell Farms in Cherokee, Alabama, for example, such advances enable five to seven workers the ability to manage more than 7,500 acres of cropland. This theme was repeated again and again, with participants learning about the successes and challenges of five U.S. agricultural value chains: corn, cotton, rice, soybean, and vegetables.

As a complement to the farm visits, participants visited several agricultural research stations, getting the opportunity to hear about agricultural innovations from their source and see how researchers and farmers work together to build a stronger industry.

"[I learned] the importance of focusing research and technology on a select group of crops. The farmers are quite aware of and involved in this research," said Uzoma Nwagbaraocha, managing director of Gice Agrosciences Limited. "There's a sense of ownership because this research is the solution to their problems. The researchers have learned well to listen to and target the problems of the farmers."

From the classroom to the field, every participant expressed that the tour fulfilled their expectations and increased their knowledge of advances in agriculture, all expecting to use their newfound experiences to conquer challenges and advance their home countries' agricultural industries.

"There are a lot of things to be done. We have a long way to go," Oscar Okpe, head of sales for Notore Chemical Industries, observed, "but this tour introduced me to so many new agricultural advances. It was quite fantastic!"

IFDC's hands-on international training, workshop, and study tour programs are designed for professionals in private, public, cooperative, and non-governmental organizations. Each program is conducted by a multi-disciplinary team from IFDC's experienced international staff and invited experts.

"THE COMRADERY AND NETWORKING GO HAND-IN-HAND WITH ENHANCED LEARNING. BUILDING RELATIONSHIPS FUELS GREATER LEARNING AND TAKEAWAYS FOR EVERYONE."

— James Thigpen
IFDC TRAINING COORDINATOR

Offering several programs each year, topics include integrated soil fertility management and fertilizer use efficiency in sustainable agriculture and the impact of fertilizer production and use on the environment. They also deal with policy reform, competitive marketing and distribution systems, production and process technology, and investment analysis.

2017

SPURRING AGRICULTURAL TRANSFORMATION IN MYANMAR

Myanmar's economy and the nation's food security rely on a strong agriculture sector. But years of poor land management have caused serious soil degradation. Recently, IFDC soil fertility experts, policy economists, and field project leaders provided support to the Government of Myanmar toward strengthening soil health and enabling quality fertilizer supply.

The partnership between the government and IFDC was formalized and celebrated through a cooperative framework agreement with the Myanmar Ministry of Agriculture, Livestock and Irrigation (MOALI) on October 17, 2017. The agreement enhances collaboration between IFDC and the Government of Myanmar in agricultural research, extension, development, and agribusiness activities.

NATIONAL SOIL FERTILITY AND FERTILIZER MANAGEMENT

In October 2017, agricultural experts came together in Nay Pyi Taw, Myanmar, at the National Soil Fertility and Fertilizer Management Conference to discuss how to increase the nation's agricultural productivity and keep its soils healthy. IFDC, its Fertilizer Sector Improvement (FSI+) project, and MOALI's Department of Agricultural Research (DAR) hosted the event, with funding from the United States Agency for International Development (USAID), Australian Aid, and the Australian Centre for International Agricultural Research (ACIAR).

Researchers presented 28 papers covering soil fertility and crop nutrient management, environmental impacts of fertilizer, fertilizer quality, fertilizer recommendations, and farmer extension methods.

Proceedings of the Myanmar Soil Fertility and Fertilizer Management Conference were published in early 2018. The publication is available at http://bit.ly/MyanmarSoil.

SOIL FERTILITY AND MANAGEMENT STRATEGY FOR MYANMAR

Following the conference, government leaders and industry representatives attended a workshop to provide input toward a soil fertility and management strategy for Myanmar. IFDC researchers and economists, in collaboration with MOALI, completed the strategy in early 2018.

The strategy outlined four key objectives:

- Improve the fertility status of Myanmar soils to support sustainable improvement in agricultural productivity.
- Enhance efficiency and effectiveness in the fertilizer value chain to improve farmers' knowledge of, access to, and use of high-quality fertilizer products.
- Increase farmers' economic returns from fertilizer use.
- Reduce adverse impacts of fertilizer on the natural environment, ecological resources, and climate change.

The strategy serves as a solid foundation for the MOALI to transform the nation's agriculture sector.

FERTILIZER REGULATORY AND VALUE CHAIN

The International Finance Corporation, the private sector arm of the World Bank Group, commissioned IFDC to assess Myanmar's fertilizer regulatory system and value chain and the quality of fertilizers traded in the country.

In November 2017, an IFDC assessment team visited a randomly selected sample of registered agro-dealers and collected fertilizer samples for quality analysis. In addition, the team conducted interviews with key stakeholders and a literature review of existing research on Myanmar's fertilizer sector.

Assessment findings are being finalized. The report will provide recommendations for strengthening government efforts to maintain high quality standards in the country's fertilizer value chain.

FERTILIZER SECTOR IMPROVEMENT (FSI+)

Bridging the gap between research and farmer extension is IFDC's FSI+ project, funded by USAID. FSI works with smallholder farmers in rice-rice and rice-gram cropping systems in Yangon, Bago, and Ayeyarwady regions and includes a small pilot on maize production in southern Shan State.

Farmers learn about balanced fertilizer use, focusing on fertilizer deep placement (FDP), and the use of good quality seed and good agricultural practices. Rice farmers are increasing their gross margin income by 35%. The project also trains fertilizer retailers in business management and boosts the supply of urea briquettes for FDP through small briquette manufacturing enterprises. Since the project started in 2014, 302 retailers have received training and now provide advisory services to farmers. Trainers from Syngenta also provide training on plant protection.

To offset the labor constraints of FDP, IFDC has been developing a mechanical applicator in collaboration with John Deere. This is undergoing field testing before commercialization.

FSI+ also has a strong research component. From the project's start in 2014 through January 2018, FSI+ conducted 122 field trials. In 2014-15, trials focused on various aspects of UDP (spacing, timing of application, application in submerged fields, etc.). Thereafter, additional trials tested nutrient rates, seed quality and seeding rates, and compound fertilizers.

By the project's completion in 2019, 15,000 farmers are expected to benefit from the project through higher yields and income. A total of 300 retailers will improve their business practices and 35 small businesses will share the cost of machinery required to produce fertilizer briquettes and establish supply points to afford farmers access to UDP products.

DRY ZONE AGRO-INPUT AND FARM SERVICES

Another IFDC project in Myanmar, the Dry Zone Agro-Input and Farm Services project (called the "DZ project"), links farmers to quality products and technical advice. With funding from the Livelihoods and Food Security Trust Fund (LIFT), the project is strengthening a network of 55 private sector input and service providers (ISPs).

During 2017, the DZ project provided ISPs with Business Enhancement Grant payments totaling $229,500. Using these funds, the ISPs give farmers access to new products, services, and information that enhance their productivity. For example, the ISPs have initiated 46 farmer trainings in cooperation with IFDC, the Department of Agriculture, and private sector suppliers. They also introduced 22 new products (improved seeds, fertilizers, crop protection products, organic products, and small machinery). ISPs have reported increasing sales, number of customers, and acres and villages served. In addition, ISPs formed six township sub-groups and a Dry Zone ISP Cooperative Association in 2017.

During 2017, the project led 196 farmer trainings in collaboration with ISPs and extension staff, reaching 12,028 farmers (3,590 female). These farmers received vouchers to redeem at project ISPs. The ISPs reported that farmers spent 42.1 million Myanmar Kyats ($31,600) in addition to the value of the voucher. The project is expected to reach 50,000 farmers.

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2017
IFDC FINANCIAL STATEMENT

The following is a summary of financial information for the year ended December 31, 2017. The full financial statements and the independent auditors' reports are available from IFDC upon request.

Balance Sheet
for the year ended December 31, 2017

Assets:	**US $'000**
Cash and cash equivalents	10,729
Contracts receivable, net of allowance for doubtful accounts	5,037
Other receivables	267
Supplies inventory	26
Prepaid expenses and advances	494
Total current assets	16,553
Buildings and equipment, net	86
Contributions receivable, nonconcurrent	
Total assets	16,639
Liability and Net Assets:	
Accounts payable	852
Accrued salary, w/holding and leave	896
Deferred revenue	16,340
Other liabilities	
Total current liabilities	18,088
Unrestricted net assets	(1,511)
Other unrestricted net assets	54
Permanently restricted net assets	8
Total liabilities and net assets	16,639

Statement of Revenue and Expenses
for the year ended December 31, 2017

Revenue and Support:	**US $'000**
ACDI/VOCA	20
Alliance for a Green Revolution in Africa	266
AFAP	102
Centre for Development Innovation (CDI)	339
Dutch Embassies	19,488
International Fertilizer Association	183
Islamic Development Bank	441
Embassy of Ireland (Irish Aid)	112
Millennium Challenge Authority (MCA)	285
Netherlands Directorate-General for International Cooperation	8,871
The Fertilizer Institute	85
Solidaridad West Africa (SWA)	207
Swiss Agency for Development and Cooperation (SDC)	649
Walmart Foundation, Inc.	564
United Nations Office for Project Development (UNOPS-LIFT)	1,331
U.S. Agency for International Development	18,137
Others	5,438
Total revenues and support	56,518
Expenses:	
Research and development	3,136
Field projects	41,531
Capacity building	4,608
VFRC	0
Support activities	6,523
Total expenses	55,798
Increase in unrestricted net assets	720

ACRONYMS

2SCALE	Toward Sustainable Clusters in Agribusiness Through Learning in Entrepreneurship
AFAP	African Fertilizer and Agribusiness Partnership
AVPI	Accelerating Vegetable Productivity Improvement
ECOWAS	Economic Community of West African States
FDP	fertilizer deep placement
GAP	good agricultural practice
GHG	greenhouse gas
ISFM	integrated soil fertility management
ISP	input and service provider
K	potassium
N	nitrogen
P	phosphorus
PAPAB	Projet d'Appui à la Productivité Agricole au Burundi (Support Project for Agricultural Productivity in Burundi)
PIP	Plan Intégré du Paysan (Integrated Farm Planning)
PNSEB	Programme National de Subvention des Engrais au Burundi (National Fertilizer Subsidy Program in Burundi)
SMaRT	Soil testing, Mapping, Recommendations, and Technology Transfer
UDP	urea deep placement
USAID	U.S. Agency for International Development
WAFA	West Africa Fertilizer Association
WAFP	West Africa Fertilizer Program

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Developing Agriculture from the Ground Up

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UPCOMING 2018 TRAINING PROGRAMS

U.S. Study Tour: Technology Advances in Agricultural Production, Water and Nutrient Management	USA (Alabama, Tennessee, Missouri, Arkansas, Iowa, Washington D.C.)	August 20-31, 2018	$2,700
Granular Fertilizers Production and Specialty Products	Bangkok, Thailand	November 5-9, 2018	$2,000
Bringing Balanced Crop Nutrition to Smallholder Farmers	Abuja, Nigeria	November 19-23, 2018	$1,700

Register at: https://ifdc.org/2018-training-programs/

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Cover Photo
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