

# STRATEGY 2020–2030

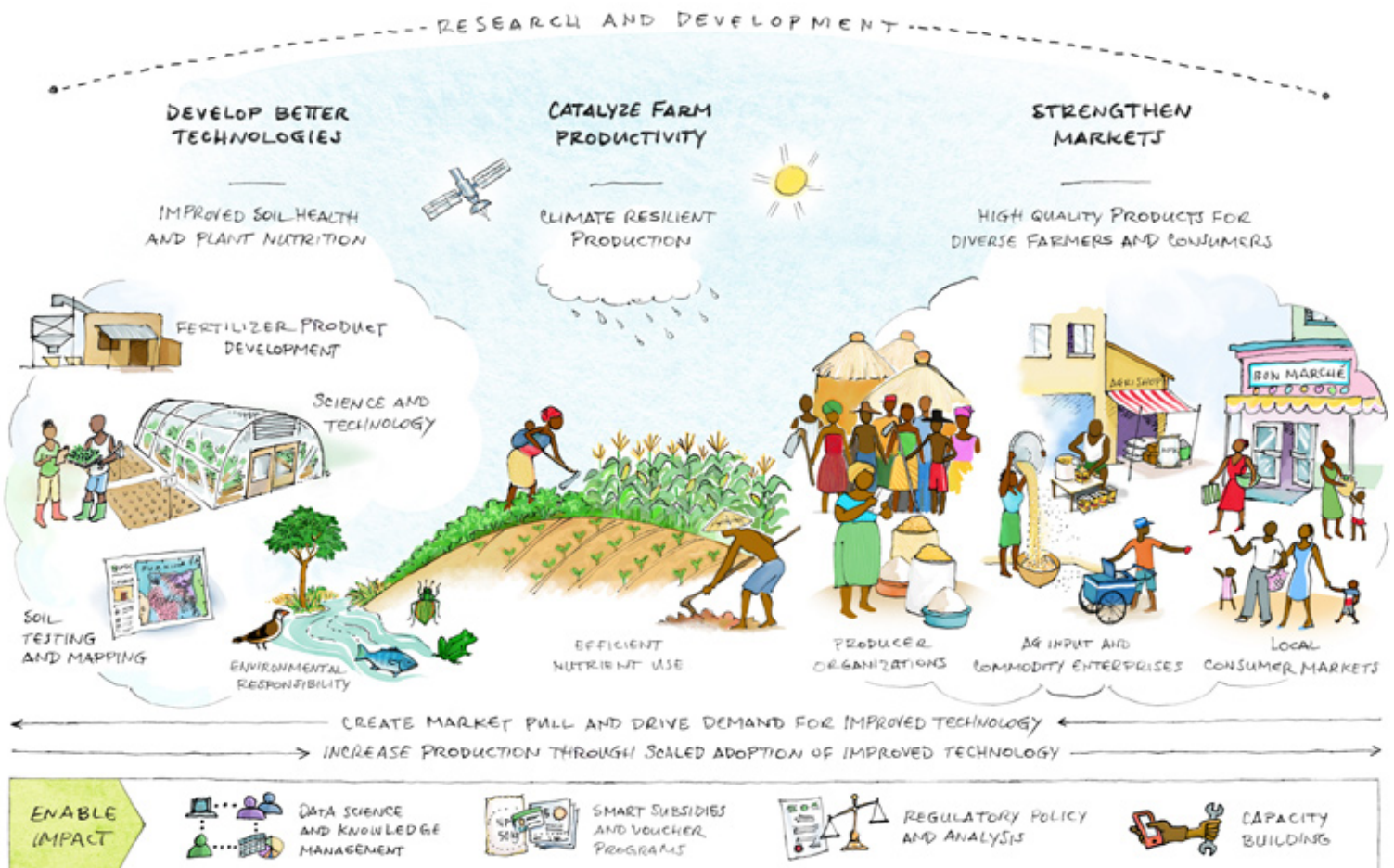


## HEALTHY SOILS – PROFITABLE FARMERS – RESTORED ECOSYSTEMS

Fundamental improvements in soil and plant nutrition are required to meet the challenge of sustainably feeding 10 billion people by 2050. Global population growth will drive a substantial increase in food demand, while climate change is already accelerating risks to food production, especially in poorer regions. Major changes in agricultural systems - especially nutrient use efficiency - will be needed to ensure food security and environmental sustainability.

Over the past 70 years, NPK adoption fueled spectacular increases in agricultural productivity in much of the world, but the ecological costs of inefficient fertilizer use have been high. Over half of the estimated 120 million tons of nitrogen fertilizers used each year ends up in waterways. Agriculture, forestry, and land-use change were responsible for a quarter of global annual greenhouse gas emissions during 2007-2016.

### MISSION IN ACTION



## OUR REACH



BANGLADESH | BENIN | BURKINA FASO | BURUNDI  
CÔTE D'IVOIRE | ETHIOPIA | GHANA | INDIA | KENYA  
MALI | MOZAMBIQUE | MYANMAR | NEPAL | NIGER  
NIGERIA | SENEGAL | TOGO | UGANDA

### VISION

*Healthier soils and plants for a food-secure and environmentally sustainable world.*

### MISSION

*Bring together innovative research, market expertise, and strategic public and private sector partners to identify and scale sustainable solutions for soil and plant nutrition that benefit farmers, entrepreneurs, and the environment.*

Our foundational **Principles** and **Values** inform all our decisions, from setting research priorities, to assessing business opportunities, and measuring our effectiveness.

#### PRINCIPLES OF ENGAGEMENT

- ✓ Science-backed innovation.
- ✓ Environmental stewardship.
- ✓ Locally driven solutions.
- ✓ Gender and youth equity.
- ✓ Private sector engagement.
- ✓ Impact-driven approaches.

#### ORGANIZATIONAL VALUES

- ✓ Inclusivity and empowerment.
- ✓ Transparency and accountability.
- ✓ Collaboration and cooperation.
- ✓ Innovation and improvement.
- ✓ Efficiency and effectiveness.

New fertilizers and complementary technologies are required to address secondary and micronutrient deficiencies that reduce the capacity of plants to use NPK efficiently. In sub-Saharan Africa, deficiencies of zinc, boron, and sulfur have contributed to poor fertilizer profitability, low adoption rates, and a vicious cycle of soil degradation. Soil and environmental degradation results as nutrients are continually extracted through cropping and as agricultural production expands onto new, often marginal, lands. Declining soil fertility limits biomass production and surface cover, leading to poor soil structure and increased runoff and erosion.

## OUR STRATEGIC APPROACH

Achieving impact at scale requires adapting research and technology to smallholder needs, but must go further. IFDC experts and their partners work across the discovery-to-consumer continuum to bridge the traditional gaps between research, technology dissemination, and market systems that often undermine efforts to realize and sustain impact at scale. With an emphasis on working with partners and strengthening local capacity, IFDC focuses on integrating project-level research and development efforts across four priority areas.





## DEVELOP BETTER TECHNOLOGIES

- ✓ **Develop more nutrient-efficient, environmentally sound fertilizers.** IFDC tests and adapts advanced fertilizers, including stabilizers, inhibitors, and biodegradable polymer and micronutrient coatings. These improvements regulate nutrient release, helping to reduce runoff, leaching, and greenhouse gas emissions.
- ✓ **Improve fertilizer recommendations.** Working with national partners, IFDC validates new technologies that advance the quality and spread of fertilizer recommendations. These include spectral soil and crop analysis, satellite imagery showing spatial variation in yield and water use efficiency, improved soil test kits, and information and communication technologies (ICT).
- ✓ **Scale up the production and adoption of new fertilizers.** IFDC uses its Soil-SMaRT framework (Soil testing, Mapping, Recommendations development, and Technology transfer) to map soils at national and regional levels and to evaluate balanced fertilizers through crop trials and modeling. IFDC's Pilot Plant team works with public and private partners to test the technical and financial feasibility of manufacturing improved fertilizer blends, coatings, and compounds at scale.
- ✓ **Refine and scale Integrated Soil Fertility Management (ISFM).** Fostering a Green Revolution in Africa will require rebuilding degraded soils, but ISFM strategies developed in the 1990s used ex-situ organic materials that were costly and challenging for smallholders. Going forward, IFDC and partners will focus on a combination of integrating organic biomass from the field itself and applying balanced inorganic fertilizers. Key approaches will include production ecology modeling; designing organic/inorganic fertilizers and management strategies that work with the soil microbiome; managing biomass and its impact on soil health and plant nutrition; and developing fertilizers produced with local resources.



## CATALYZE FARM PRODUCTIVITY

- ✓ **Conduct on-farm research and demonstrations.** IFDC works with smallholders and other partners to test the impact of key practices, including soil and water conservation techniques, no-till farming, relay cropping, cover crops and organic matter recycling methods, on climate resilience and the environment.
- ✓ **Expand engagement of women and youth.** IFDC is expanding training for these groups and working to improve their access to productive resources and services. Increasing the successful participation of women and youth in new agribusiness partnerships on and off the farm is a key objective.
- ✓ **Use ICT to scale adoption of improved technologies.** Working closely with youth as early adopters and trainers, IFDC is harnessing mobile phones and apps to change how farmers access and use information about markets, weather and pest forecasts, and crop management and business management advice.



## STRENGTHEN MARKETS

- ✓ **Develop agribusiness clusters.** IFDC brings together groups of farmers, commodity buyers, agro-input dealers, banks, service providers, and processors, building the trust and long-term relationships that are necessary to expand access to input, finance, and output markets for smallholders. Key priorities include developing agribusiness opportunities, especially for youth and women, and ensuring the supply of quality commodities to buyers and processors.
- ✓ **Identify scaling pathways, partners, and potential risks/opportunities.** Working with local partners, IFDC conducts scalability assessments that estimate financial and economic profitability, analyze the business case for new technologies at smallholder, input dealer, and commodity market levels, and review environmental outcomes.

## ENABLE IMPACT

- ✓ **Support global, regional, and national dialogues.** IFDC is working with partners to improve the level and quality of investments in soil fertility and plant health.
- ✓ **Strengthen policies and regulations.** IFDC facilitates the development of fertilizer industry and agro-dealer platforms to address policy and regulatory issues and environmental concerns; improves local capacity to assess market demand and supply, analyze marketing margins, and develop cost buildup studies; provides technical support to assess impacts and inform adjustments to policies and regulations; and strengthens the capacity of national standards authorities and research systems to assess the quality of new and existing fertilizer products.
- ✓ **Improve the technical capacity of public and private sector partners.** Key activities include IFDC's International Training Program Series; training on fertilizer production and quality control from IFDC's Pilot Plant scientists and engineers; training scientists to use advanced crop and soil system simulation modeling techniques; and the hands-on training, mentoring, and increasing delegation of responsibilities to local partner organizations that are built into every IFDC project.
- ✓ **Widely share new knowledge and data.** IFDC is committed to making its scientific, economic, and policy analyses available through the IFDC website, scientific publications, and relevant agronomic and policy platforms.

