



# Change for Impact

*Transforming Agriculture and Rural  
Development in IsDB Member Countries*





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Development in IsDB Member Countries*

Agriculture Global Practice  
Economic and Social Infrastructure Department  
Islamic Development Bank



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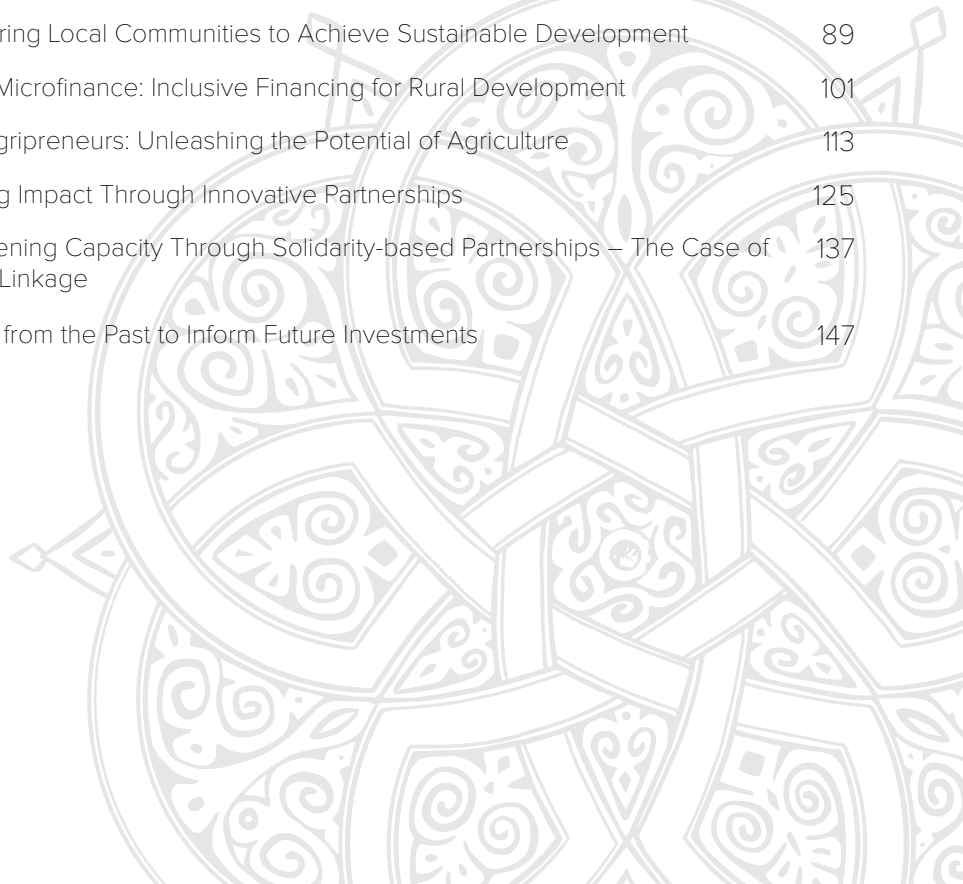
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## Foreword



**H.E. Dr. Bandar M. H. Hajjar**  
President, Islamic Development Bank

All across IsDB Group's 57 member countries, big things are happening in agribusiness and on the millions of small family farms that are the main source of food, employment, and incomes in these countries. I see this as I visit one country after another. I hear it from Heads of State, from our Board of Governors, and from Bank staff, all of whom are immensely dedicated to Group's vision of Prospering Humanity. To move towards making our vision a reality, over the next 10 years we will connect member countries with one another, foster inclusive human

development, and grow the Islamic financing industry that is unique to IsDB's identity. Our 10-year Strategic Framework provides practical ways to achieve our shared vision, and to position ourselves both as a multilateral development bank and as a bank for developers. This requires *crowding in* strategic partners that can help grow our financing envelop and promote new science, improved technologies, and other innovations that can enhance the performance and impacts of our investments.

IsDB's commitment to growing the agriculture sector of member countries remains strong. It is the cornerstone to achieving the sustainable development goals (SDGs) – not only SDG 2 ('Zero Hunger') but nearly all of the other goals as well. This is because of the multiplier effects of improvements in the agriculture sector. The evidence for these effects is growing. For example, various development studies have shown that one dollar invested in the agriculture sector in sub-Saharan Africa reverberates throughout local economies, lifting at least 16 people out of poverty. Our challenge is to ensure that critical invest-



*Over the next 10 years, we will connect member countries with one another, foster inclusive human development, and grow the Islamic financing industry that is unique to the IsDB Group's identity.*



ments are made, especially by the private sector, so that agriculture will grow sustainably over the longer term and at significant scale. We must also see to it that these investments by different entities are as fully integrated as possible and co-located to generate impactful change.

The IsDB Group's investments in agriculture and rural development stood at USD 12.6 billion as of the end of 2017. This figure reflects a significant amount of growth, much of which occurred in the past decade and this momentum is poised to continue in the years ahead.

There is no doubt that the Group's investments are enabling rural communities to realize our collective vision. For instance, farmers in many member countries now have access to good quality seeds of improved, high yielding varieties. Because these improved varieties also have built-in genetic resistance to biotic and abiotic stresses, such as plant diseases, insect pests, drought, and salinity, they contribute to building the resiliency of agricultural systems in the face of climate change. In addition, our investments in rural infrastructure, such as roads, markets, and irrigation systems, are improving the lives and livelihoods of numerous rural communities in member countries.

The gains made so far provide a firm foundation for the road ahead, and we have learned a lot about what we should do differently in the future. For one thing, IsDB needs to have representatives on

the ground and working closely with clients. We also need to engage strongly with the private sector, and more specifically, through value chains that link farmers to markets, grow agribusinesses, and create jobs in rural areas for youth and women. An example of this is a regional rice value chain development program in sub-Saharan Africa that the Group will help to develop in 2018 and 2019, working in tandem with member countries in the region. This will further strengthen the already strong comparative advantage of the target countries in boosting their agricultural productivity and help them to capture their fair share of markets that are currently underserved. It is for these reasons that the Bank embarked on a major decentralization program in 2017 that will create regional hubs in member countries. This will help provide much-needed support to our member countries and other partners in growing sustainable value chains; it will also fast track project implementation for impact.

This book speaks to this transformative journey. It provides balanced reflections on the past and valuable lessons that inform the way forward. I am confident it will provide useful insights to all IsDB stakeholders. I salute the team for producing this important resource. Congratulations!



**H.E. Dr. Bandar M. H. Hajjar**  
President, Islamic Development Bank

# Preface



**Dr. Mansur Muhtar**  
Vice President  
Country Programs Complex  
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**A**chieving the SDGs by 2030 is an ambitious undertaking, which requires addressing numerous challenges. In the case of SDG 2, which is about eradicating hunger, the challenges are many. However, a few stand out in IsDB member countries, including the low productivity of the agriculture sector, climate change, and associated environmental degradation. The populations of these countries

are growing rapidly, and many are food insecure. The unemployment rate, especially among youth and women remains high especially in rural areas. Many find it difficult to make ends meet, forcing them to migrate to cities. This scenario makes one thing clear. The agriculture sector *can* and indeed *must* be transformed if we are to eliminate hunger and malnutrition and create a platform for sustainable and inclusive economic growth that would leave no one behind.

This transformation requires taking on board lessons from the past about what worked well and what did not to change agriculture for impact. And that is what this book is about. It takes stock of the Islamic Development Bank's (IsDB) own development strategy and investments in agriculture and rural development (ARD) over the past 43 years to draw lessons that could guide the development community's efforts in achieving SDG 2. It highlights the progress we have made in understanding the agricultural



*This transformation requires taking on board lessons from the past about what worked well and what did not to change agriculture for impact.*





development challenges and possible pathways to overcome them in light of the Bank's experience. This book, does not, however seek to provide a comprehensive assessment of all the development programs and projects that have been financed by the Bank on behalf of its member countries. Instead, it uses various representative programs and projects as case studies to draw out generalized learnings that show the way to key entry points for transforming the sector going forward.

The book is organized into 13 concise and interrelated chapters. The first two chapters (1-2) present the IsDB agriculture and rural development strategy and methodologies for financing agricultural investments at scale. The following five chapters (3-7) focus on the transformation required to sustainably increase agriculture (crop and livestock) and water productivity in face of climate change. A critical question of relevance here is: *What practical solutions can be deployed at scale to build the resiliency of crop and livestock production systems, and raise productivity in ways that enhance food security and generate extra outputs that can go to remunerative markets?* The chapters provide some pointers on this question using case studies from IsDB investments in member countries in Asia and sub-Saharan Africa.

The three subsequent chapters (8,9 and 10) demonstrate the importance of community empowerment, inclusive financing and youth employment in the rural areas to achieving sustainable transformation. The important question explored in these chapters is: *What are some of the practical mechanisms that can be used to expand access to financing in rural areas in ways that empower communities and generate jobs for youth and women?* These chapters draw out important lessons from the case studies on IsDB integrated rural development and community driven development programs implemented in various member countries.

Chapter 11 argues that strategic partnerships, both financial and technical, are necessary for expediting the needed transformation. A central question driving the partnership goal is: *What partnership arrangements can be developed to share knowledge and experiences, and continuously bring on board critical innovations to achieve impacts?* Using case studies from various countries and institutions, this chapter provides insights into partnerships that help IsDB and its member countries scale up impacts, close financing gaps, bring on board innovations to enhance efficiency, and develop and disseminate knowledge.

Chapter 12 discusses capacity challenges as major constraint to the sound implementation of most projects in many IsDB member countries. An important question in this regard is: *What practical approaches can be deployed to provide the scope and quality of needed capacity development?* One unique opportunity is the reverse linkage approach, a results-oriented technical cooperation mechanism pioneered by IsDB. The final chapter (chapter 13) concludes by presenting lessons from the evaluation of Bank-financed operations over the past four decades that will inform IsDB Group's future interventions.

In a nutshell, this book has identified important lessons and opportunities for transforming the agriculture and rural development sector in IsDB member countries. Opportunities include a rapidly growing interest from a wide range of stakeholders in being part of the transformation process –

member countries, the private sector, development partners, and civil society, among others. The time to seize these opportunities is *now*. Together with our partners, we can create productive, resilient and commercialized *value chain-led* agriculture sectors that meet the food and nutritional security needs of our growing populations. IsDB looks forward to working with a diverse array of development partners in the coming years to accelerate the impactful and sustainable changes required in agriculture sector to achieve SDG 2 target of eliminating hunger in its member countries.



**Dr. Mansur Muhtar**  
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# Acknowledgements

It was less than four months ago that we, the Agriculture Global Practice team, decided to write this book. We embarked on this project for two reasons. First, we felt that there is a strong need to share with our clients and global community of practitioners the immense agriculture and rural development (ARD) knowledge the institution has developed over the past 43 years. Second, to set the strategic direction for IsDB Group investments and interventions in ARD at a time when the institution is restructuring in order to better assist its member countries in implementing the 2030 global development agenda.

This book, ***Change for Impact: Transforming Agriculture and Rural Development in IsDB Member Countries***, presents a range of case studies, and documents important learned lessons from IsDB Group's investments in member countries. It was made possible by the contributions of the Group's staff who have brought their extensive expertise and years of experience to bear in writing the book. We are indebted to all of them for their brilliant work! We would also like to extend thanks to our technical partners, especially the Millennium

Promise Alliance, and to our country project implementation teams in various countries that have graciously shared with us important data and reports that enriched the book.

Profound thanks to Mansur Muhtar, Vice President, Country Programs Complex, and Hayat Sindi, Adviser to the IsDB President for Science, Technology and Innovation, and other members of senior leadership in the Bank, who have provided enormous encouragement and helpful advice on both the content and process of developing the book. We are also grateful to Muhammad Jameel Yusha'u of the IsDB Communications Department.

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# Acronyms

AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
ARD	Agriculture and Rural Development
BMGF	Bill & Melinda Gates Foundation
CD	Capacity Development
CDD	Community Driven Development
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CPMS	Cooperative Produce Marketing Society
CUC	Cumulative Undisbursed Commitments
FAO	Food and Agriculture Organization of the United Nations
GAP	Good Agriculture Practice
GDP	Gross Domestic Product
Ha	Hectare
ICD	Islamic Corporation for the Development of the Private Sector
ICDD	Integrated Community Driven Development
ICIEC	Islamic Corporation for Insurance of Investment and Export Credit
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IGAD	Intergovernmental Authority on Development
IIED	International Institute for Environment and Development
ILO	International Labour Organization
IPCC	Intergovernmental panel on Climate Control
IRD	Integrated Rural Development
IRTI	Islamic Research and Training Institute
IsDB	Islamic Development Bank
ISFD	Islamic Solidarity Fund for Development
ITAP	Investment Promotion Technical Assistance Program
ITFC	International Islamic Trade Finance Corporation
IWRM	Integrated Water Resource Management
KAUST	King Abdullah University of Science and Technology
LDMCs	Least Developed Member Countries
LIFDCs	Low Income Food-Deficit Countries

LIFIDEP	Livestock and Fisheries Development Project
LLF	Lives and Livelihoods Fund
MCs	Member Countries
MCPS	Member Country Partnership Strategy
MDB	Multilateral Development Bank
MDG	Millennium Development Goal
MENA	Middle East/North Africa
MFI	Microfinance Institution
MT	Metric Ton
MPA	Millennium Promise Alliance
MVP	Millennium Village Project
NARS	National Agriculture Research System
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
OIC	Organization of Islamic Cooperation
PPP	Public-Private Partnership
ROI	Return on Investment
SACCO	Savings and Credit Cooperative
SDG	Sustainable Development Goal
SESRIC	Statistical, Economic and Social Research and Training Centre for Islamic Countries
SME	Small- to Medium-size Enterprise
SPDA	Special Program for the Development of Africa
SPF	Strategic Partnership Framework
SSA	Sub-Saharan Africa
SVP	Sustainable Village Project
TA	Technical Assistant
TCP	Technical Cooperation Program
TCPP	Trade Cooperation and Promotion Program
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WWAP	World Water Assessment Programme
YES	Youth Employment Support









## Chapter 1

# Setting the Direction and Pace for Sustainable Change: Our Strategy

Nur Abdi<sup>1</sup>



### Key Messages

- The Islamic Development Bank Group (IsDB Group) is fully committed to growing its investments in the agriculture and rural development sector in order to strengthen food security, build resiliency, and create jobs.
- The IsDB Group sees its role as one of fostering sustainable, inclusive, integrated, and equitable growth in the agriculture and rural development sectors of its member countries. It will actively encourage the deployment of the products of science and technology, as well as other innovations aimed at increasing productivity and building resiliency against the growing threats posed by climate change.
- The Group will work ever more closely with development partners, civil society, and private sector entities, and encourage them play prominent roles in financing and implementing development projects and programs.
- Going forward, the IsDB Group is rededicating itself to systematically documenting and deploying available knowledge and existing best practices on behalf of its member countries to drive change towards sustainable impacts in the sector.

### Introduction

**A**griculture is one of the few sectors that can truly help to achieve the broad objectives of economic progress. Improvements in agricultural productivity can lift many poor households out of poverty and malnutrition. The sector is a source of income and employment for 70% of the world's rural poor. In developing countries, agriculture contributes an average of 40% of the gross domestic product (GDP). Data show that GDP growth

originating in agriculture is usually at least twice as effective in benefiting the poorest half of a developing country's population as growth generated in non-agricultural sectors (Food and Agriculture Organization of the United Nations, 2009).

Collectively, the IsDB Group's member countries are endowed with enormous natural and human resources. These countries account for about 19% of the total global population and occupy about 25% of the world's land area. They contain an estimated 28.8% of the world's total agricultural area, and 13.5% of its total renewable water resources (Statistical,

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Economic and Social Research and Training Centre for Islamic Countries – SESRIC, 2016). However, about 37% of the irrigated land and nearly 50% of the rainfed land in in these countries remains unutilized. Twenty-five of the Group’s 57 member countries are among the global top 20 producers of various major agricultural commodities (SESRIC, 2016). These countries provide about 14-15% of the world’s total cereal, horticulture, and meat production. Even so, production is highly concentrated in just a few countries. Ten of these member countries account for about 80%, 75% and 67% of total cereals, horticulture, and meat production, respectively (Islamic Development Bank, 2017). This is primarily because agriculture remains a subsistence enterprise in many member countries – particularly in sub-Saharan Africa (SSA) where about 40% of the member countries are located.

The subsistence nature of agriculture in the majority of the Group’s member countries means the sector is dominated by smallholders. Crop and livestock productivity are relatively low compared to global averages, and productivity varies greatly among the member countries. Average crop yields (for staple and cash crops) are about 60.7% of the global levels for wheat, 84.2% for paddy rice, 50.9% for sorghum, 63.6% for millet, 55.3% for maize, and 78.9% for seed cotton. The global warming now well underway and the climate variability associated with it are expected to further depress crop yields.

Despite recent progress in poverty reduction, the world still faces the threats of food and nutrition insecurity. By 2050, it is projected that the world will need to provide food and nutrition security for 2 billion more people, in addition to today’s 815 million food-insecure (United Nations, 2018). The implication is that food production will have to increase by 70-100% over the next 30 years in order to meet the food and nutrition security needs of the additional 2 billion (World Bank, 2008). IsDB Group member countries will be expected to contribute to meeting production targets, yet most of them already face significant food insecurity problems that pose formidable challenges to their governments. Twenty-eight member countries are classified by FAO as low-income food-deficit countries (LIFDCs); this is more than half of the 52 countries that FAO considers to be LIFDCs. Expressed differently, almost 50% of all IsDB Group member countries account for more than half of the worlds LIFDCs.

Agriculture and rural development in our member countries face many challenges, which commonly include:

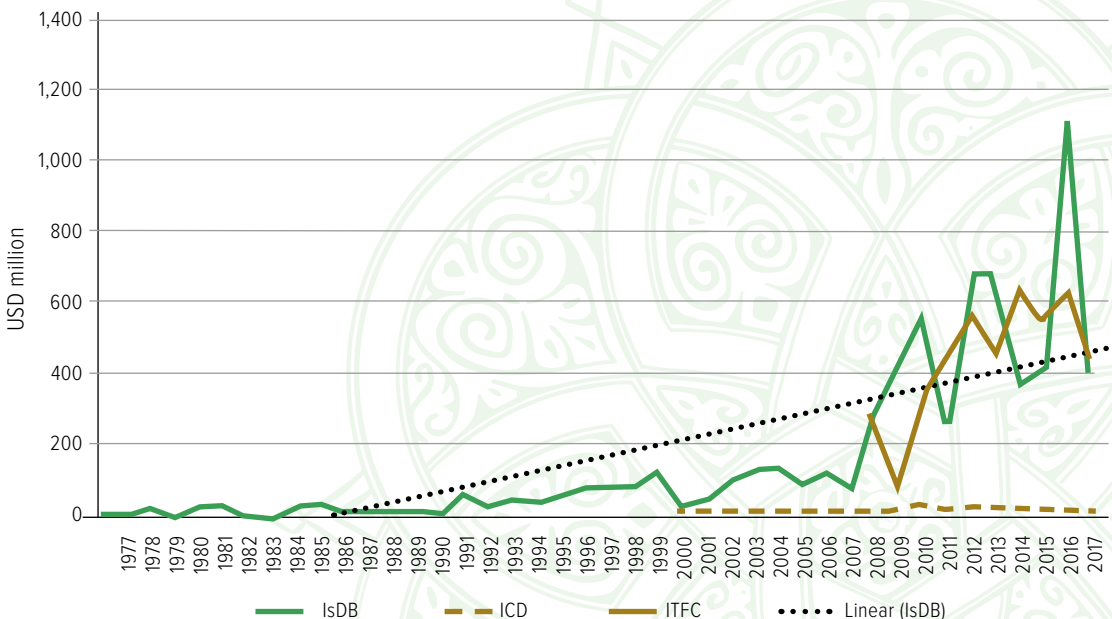
- Depleting natural resources and increasing climate variability that will further weaken the resilience and agricultural production capacities, and hence, the ability of member countries to provide adequate food for their populations;
- Increasing rural-to-urban migration leading to a higher incidence of urban poverty;

- Emerging globally integrated production systems that pose significant challenge for farmers, who are predominantly smallholders with no or very limited access to technology and markets;
- High rates of youth unemployment among rural and urban populations – around 16% in member countries;
- High poverty rates – more than 40% of the world’s 850 million people who live in extreme poverty reside in the Group’s member countries; and
- Increasing civil unrest in many member countries, which is disrupting production systems and rural livelihoods and increasing the vulnerability of millions of rural and urban poor.

A number of IsDB Group policies and strategies are designed (or being reworked) to better position the institution to support member countries as they address the agriculture and rural development challenges they face. Some important lessons have been learned, as well, that are helping to inform decision making for the future.

### A Decade of Accelerated Investment: 2008-2017

Since its inception in 1975, the Group has funded 990 agriculture and rural development (ARD) projects for a total amount of approximately USD 12.597 billion. This funding accounts for about 30% of total project funding and 18.5% of the total investments made, respectively.



**Figure 1.1: IsDB Group investment in Agriculture and Rural Development (1977-2017)**

Source: IsDB database

The funding for the agriculture, food security and rural development has surged in the recent past (Figure 1.1). Funding by the IsDB Group increased from USD 90.3 million in 2005 to USD 1.8 billion in 2016, with 82% of that growth occurring after the 2008 global food crisis (see Chapter 2).

The Bank currently invests an average of USD 1.00 billion annually, as sovereign financing, in agriculture and rural development projects and programs.

Its current portfolio in the sector is worth more than USD 6.3 billion. The portfolio is very diverse and addresses almost all rural development challenges member countries face – from the low crop productivity of smallholder farmers, to the pressing need for rural infrastructure (dams, roads, and rural housing), to generating employment in rural non-farm enterprises. Chapter 13 discusses lessons learned from IsDB investments over the period 1975-2014 and provides specific recommendations on the way forward.

## The Next Decade: Changing Course for Greater Impact

Increased funding from the IsDB Group for agriculture and rural development over the past decade has improved the lives of millions of households in member countries (see chapter 13). However, the Group’s investments in the sector have been largely ‘demand-driven’, with resource allocations determined more by member country requests than by the organization’s principal strategic priorities (Islamic Development Bank, 2014). This has led to mismatches between funding decisions and strategy priorities, spreading the Bank’s resources across many sub-sectors and across wide geographic areas within countries. As a result, the potential impact of the Group’s interventions has been restricted. At the same time, the development challenges faced by member countries have become more complex and require multi-disciplinary and multi-sectoral interventions.



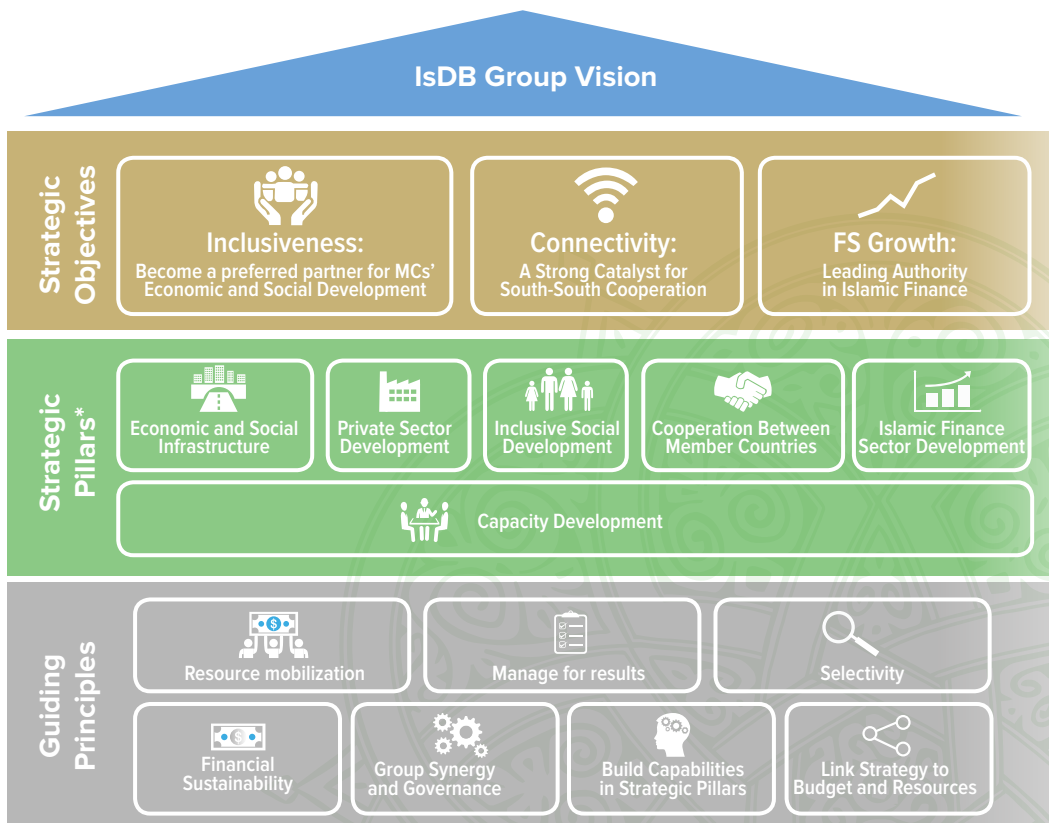
*IsDB member countries are currently facing development challenges in many areas, such as energy, climate change, food security, ICT, education, and access to water and health services, resulting in weak investment innovation.*



**Dr. Bandar M. H. Hajjar**  
President, Islamic Development Bank

To address those challenges, in 2016 the IsDB Group Board of Governor’s approved a 10-Year Strategy, which was designed to support member country growth and broader development in ways that are inclusive, responsive, and resilient to changes in each country’s external environment, and to improve their connectivity, both among themselves and with the world. This Strategy sets out the Group’s vision and revolves around:

three strategic objectives (Inclusiveness/ Solidarity, Connectivity for Growth, and Promoting the Development of the Islamic Financial Sector); and five strategic pillars (Economic and social infrastructure, Private sector development, Inclusive social development, Cooperation between member countries, and Islamic finance sector development). The 10-Year Strategic Framework is shown in Figure 1.2.



\*Capacity development is integrated in each strategic pillar

**Figure 1.2: IsDB Group 10-Year Strategic Framework**  
 Source: IsDB database

## IsDB Group Agriculture and Rural Development Strategic Framework

At the same time that member countries have been working to meet their own financial, policy and institutional challenges, they have also been buffeted by dramatic changes at the global level over the past two decades. Economic globalization has had significant political, social, and economic impacts around the world. Other important challenges (and opportunities) include: population growth and demographic shifts; global economic growth and structural changes; poverty; food and nutrition security; natural resource management; climate change, sustainable development goals; agricultural productivity and innovation; food losses and waste; development finance; and conflicts and disasters.

These issues are the contemporary global drivers shaping the 21<sup>st</sup> Century (Food and

Agriculture Organization of the United Nations, 2017) and hence are affecting the Group's member countries, as well as regional development and performance. They comprise the international framework within which the IsDB Group is preparing its Agriculture and Rural Development Policy. In order to better meet the needs of its member countries, the Group is working to build stronger partnerships with other multilateral banks and with various specialized regional agencies.

Such partnerships are crucial for achieving the objectives of sustainable agriculture and rural development, food security, and poverty reduction that have been endorsed by the World Food Summit and are reflected in the United Nations Sustainable Development Goals (SDGs) and national strategic frameworks for development. An integrated and comprehensive response is required within broader strategies designed to address the needs of member countries and to make headway with rural poverty alleviation. The role of agriculture in providing environmental services must grow and include both adaptation to and mitigation of climate change. In general terms, a comprehensive response would need to fully consider the diverse socioeconomic and natural resources with which member countries are endowed.

Over the course of the next decade, the Bank will raise the profile of inclusive, integrated and sustainable agriculture and rural development efforts. It will emphasize measurable impacts and results and encourage development partners and practitioners to play a prominent role in



co-financing and implementing development projects and programs. The Group's engagement with member countries will be built around commercialization and modernization of the rural economy with strong private sector involvement, while at the same time strengthening the agricultural systems upon which most of the rural poor depend.

Investments by the IsDB Group (and their efforts to leverage the investments of others) will be built around key priorities that coincide with and support the overall strategic objectives of the Group, namely inclusiveness, connectivity, and the growth of Islamic financial services. The Group will take a lead role in catalyzing and otherwise fostering sustainable, inclusive, integrated and equitable agriculture, rural development, and food security. In this context, the it will promote sustainable, resilient and equitable agriculture and rural development that modernizes and enhances food security systems while increasing connectivity through innovative Islamic finance, as well as its human and institutional knowledge capacities.

The IsDB Group's strategic objectives include the following:

- 1) Accelerate integrated and inclusive sustainable agricultural and rural development;
- 2) Promote sustainable natural resources management and environmental protection;
- 3) Contribute to increasing overall food production and intra-member country trade in agricultural commodities;
- 4) Reduce poverty and increase food security;
- 5) Promote the participation of private sector partners in sustainable, inclusive, and equitable rural economic growth;
- 6) Support agriculture and rural Islamic financing; and
- 7) Strengthen human resources and institutional capacities while promoting agricultural research and development.

### **Agriculture and Rural Development Strategic Pillars**

The key themes that will shape IsDB Group's investments in agriculture and rural development over the next decade are briefly described below. These priority themes were developed through a consultative process involving member countries and are aligned with and/or compliment the priorities of development partners, both current and potential.

#### ***Raising Agricultural Productivity***

The productivity of agriculture, especially the smallholder farming systems that predominate in member countries, must be significantly increased. A more productive agriculture sector is essential to meeting the food and nutritional security needs of the growing populations in member countries (SDG 2: 'Zero Hunger') and to fulfil the sector's potential as a primary driver of economic growth and development. While there is significant variability among these 57 countries, the prevailing productivity – that is, yields per unit area and associated

incomes – is only about two-thirds that of other developing countries and the global average

The Group will support efforts by member countries to access yield-boosting technologies, both for crops and livestock (including poultry and fish) so as to close the yield gap between farmers' actual production and what they can achieve using good management practices.

### ***Improving the Resilience of Production Systems in the Face of Climate Change and Volatile Markets***

The IsDB Group will provide determined leadership to decisively address the threats posed by climate change and environmental degradation. Due to the global nature of climatic change, the Group will embrace and support broad international cooperation and purposeful partnerships aimed at accelerating the reduction of global greenhouse gas emissions and addressing adaptation to the adverse impacts of climate change. It will focus on resilience and enhancing the productivity of agriculture, livestock, fisheries and forestry. It will support various mitigation and gender-sensitive adaptation options. Special attention will be given to resilience in fragile, high-risk and low-capacity countries.

### ***Improving Access to Remunerative Markets and Value Addition***

The Bank will support member country efforts to improve market infrastructure that ensures inclusive access to remunerative markets, strengthens farmers associations, improves input and output market information systems, enhances access to more

affordable finance, and provides needed opportunities for commercializing subsistence agriculture. It will support efforts to close prevailing gaps in the productive and social roles of men and women actors in supply chains. It will support projects and programs that embed the reduction of food loss and waste along the value chain within the broader concept of promoting sustainable food systems. The Group will support strengthening the role of private sector actors in developing value chains, mobilizing finance, providing effective service delivery, and contributing to research in the agriculture sector. It will also emphasize trade finance and will encourage business networking within and across borders.

### ***Promoting Inclusive, Sustainable, and Integrated ARD***

The Bank will adopt a holistic, integrated approach to rural development through improved access to basic services, infrastructure, and economic opportunities. The goal here is to enable agriculture to catalyze rural non-farm employment and incomes. It will introduce affordable, innovative, sustainable, and scalable interventions that empower local populations to take ownership and transform their rural environments. It will ensure co-locating development interventions that create synergy in member countries and opportunities for cross-sectoral actions that lead to better outcomes and greater impacts. The Bank will support economic diversification and employment-generating activities in member countries with emphasis on women and youth.





### ***Promoting Sustainable Natural Resource Management***

Special attention will be given to investment opportunities leading to food and water security. Climate change is expected to substantially (and adversely) affect the availability, variability, and annual distribution of freshwater resources in most member countries. The IsDB Group will focus on strengthening agriculture (including the intensification of livestock systems), and on improving the management of rangelands, watersheds, forests and fisheries (including inland fisheries and aquaculture, which are expected to be significantly affected by climate change). It will favor investments in resource management systems and projects that, at the very least, avoid degrading existing resources, and ideally promote practices that will sustainably use and/or rehabilitate the natural resource base.

### ***Fostering Access to Finance for Agriculture and Rural Development***

The Group will support member countries with programs and projects that deepen Islamic rural financial intermediation, and that improve investment in agriculture to generate sustainable growth in rural communities. In addition to financial intermediation, rural finance institutions will economically empower clients by providing non-financial services, such as access to markets and to market information. Rural finance institutions will also partner with clients to engage in fair trade and investment activities and share mutual benefits and risks with the ultimate objective of developing the rural economy.

### ***Promoting Private Sector Participation***

The Bank will support the promotion of private sector participation throughout all

stages of project conception, formulation, and implementation. Its goal in doing so is to ensure sustainability. It will support efforts by member countries to ‘crowd-in’ private sector investment to generate broad-based growth and increase the number of higher quality jobs in rural areas. It will support the development of the commercial agricultural sector, which will encourage the private sector to invest in developing more efficient value chains. The Group will encourage active participation of the private sector in agro-industrial enterprises, including contract farming and out-grower schemes.

### ***Harnessing the Role of Science, Technology and Innovation***

The Group recognizes the importance of science and technology as a major driver of development and innovation. The Bank will support and promote development solutions in selected areas, both in the form of investments in science, technology and innovation, and in advisory and training services. It will also leverage its position as a connector to tap resources and expertise from member countries, as well as from external partners, through reverse-linkage and capacity development activities. The Group will collaborate with specialized international, regional, and national centers of excellence to better support its member countries in research, technology dissemination, and adoption.

### ***Regional Differentiation of Key Priorities***

The above thematic strategic areas include components where the IsDB Group will act only as a facilitator, efforts that will be

further informed by knowledge about differences between rural socioeconomic environments, and about the current pressing issues, constraints and challenges among and within different regions. Its decision making will reflect the specific advantages and niches enjoyed by each region, so as to enhance the impact of its investments. As it implements its strategy, the Group will build purposeful partnerships with leading international and regional development agencies and centers of excellence in order to best serve member countries in specific regions.

However, tailoring Group investments in agriculture and rural development priority lending areas and narrowing the focus to more closely align with diverse socioeconomic settings of member countries and regions will, by definition, constrain the planning and implementation of the Bank’s agriculture and rural development strategy. Thus, while the above key strategic pillars are applicable to all regions, certain structural characteristics in each region should be considered for further prioritization. For instance, in the SSA region, the agriculture sector is characterized generally by low productivity, which in turn contributes to poverty, food insecurity and poor social development indicators. Within the policy actions, special attention will be given to enhancing agricultural productivity, and reducing the high post-harvest losses, hence reducing food and nutritional insecurity.

In the Middle East/North Africa (MENA) region, special emphasis will be given to rationalizing and enhancing the efficiency



of water management and related policies, food and nutrition security, and reducing the high dependency on imports. In this region, the Group will also give due attention to improving the investment environment to ensure a growing role for the private sector in improving food systems and market access by removing policy distortions and improving institutional coordination. A clear policy requirement is to address the challenges associated with high youth unemployment, which in MENA are at 21% in the Middle East and 25% in North Africa. These rates are higher than any other region in the world (International Labour Organisation, 2014). IsDB Group investments will, therefore, support the efforts of its member countries in the region to generate employment through

public-private sector partnership policies and programs that have great potential to employ young people and women. This will require bridging the skills gap between young job seekers and employers.

Strategic partnerships will be developed with other entities inside and outside the Group to address this important need.

Due to the diversity among the Asia member countries and sub-regions, the Group will further articulate regional considerations based on countries' and sub-regions' priority needs. While implementing its corporate lending priorities, special attention will be given to addressing the Asia regional priorities of reducing poverty, increasing value addition to support country competitiveness, and

improving productivity. In Central Asia, relatively more emphasis will be given to institutional reform and market access. In East Asia, special attention will be given to increasing investments in rural and urban areas to reduce the high level of rural-to-urban migration, as well as to enhance urbanization absorption capacities. IsDB Group investments will build on community driven development programs that have had remarkable success in some countries (see Chapter 8). Emphasis in South Asia will be placed on: increasing productivity; reducing child malnutrition; lessening land fragmentation; and overcoming sharp gender and sub-regional differences, as well as sub-national disparities.

## Conclusion

IsDB Group investments have helped build a better future for Muslim countries and communities most in need. In doing so, they have propelled the Bank beyond its primary role as a financier to become a trusted partner and mobilizer of resources, both financial and technical. The Group succeeded in spearheading a Shari'ah-compliant development assistance model that combines the developmental role of a multilateral bank with the guiding principles of Shari'ah compliance and South-South cooperation among member countries. This unique model fosters long-term partnerships to provide self-sustaining resources that alleviate poverty and support long-term socioeconomic development.

The Group has also contributed to fostering economic cooperation among member countries and Muslim communities and acted as a trusted financial partner that facilitates intra-OIC (Organization of Islamic Cooperation) trade and investment. Its initiatives include the strengthening of South-South solidarity by transferring resources to Least Developed Member Countries (LDMCs) and to Muslim communities in non-member countries (Islamic Development Bank Group, 2016).

In the coming ten years or so, the Group will prioritize its investments in agriculture and rural development by taking into account its comparative advantages, the potential impacts of its investments, and alignment with the objectives of the its 10-Year Strategic Framework and 2030 Global Agenda for Sustainable Development. The Bank's overriding goal: eliminating extreme poverty and hunger.

The IsDB Group will forge closer partnerships with development organizations, the private sector, centers of knowledge, and the civil society organizations that play a critical role in the design, implementation and co-financing of development projects and programs. Through these strategic partnerships, it will help member countries bring on board science, technologies, and innovations that will strengthen the performance of their agricultural sectors and build resiliency to the growing threat of climate change. This is a paradigm shift and transformational change for the Group as a whole.

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## Chapter 2

# Creating Opportunities for Agricultural Growth: Financing for Impact at Scale

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### Key Messages

- Public financing is essential to grow the agriculture sector. To this end, the IsDB Group has allocated considerable financing to agriculture in member countries. Going forward, the Group will foster strategic partnerships, including with other multilateral development banks and private sector entities, to help bridge the huge gap in agriculture and rural development financing in member countries.
- The Group's investments to date reflect strong regional variation, as does the level of resource utilization – the disbursement and delivery of approved resources. The Group will facilitate the transfer of lessons learned across countries and regions to enhance resource use to generate fast sustainable impacts.
- The IsDB Group is committed to building the capacity of member countries to manage projects and programs for tangible results, a challenge that many of them still face. Doing so will improve these countries' absorption capacity (effective use) of approved funding.

### Introduction

**P**ublic financing is essential for growing the agriculture sector in all countries. Sustained growth requires, among other things, significant investments in agricultural infrastructure and farmer access to affordable finance. Public investments by national governments alone is insufficient to meet the large financial needs of developing countries. Many such countries also require financial support from international partners to achieve their development goals.

Recognizing this need, the IsDB Group is placing a renewed emphasis on promoting financing for agriculture in its member countries.

### Scaling Up Investments in Agriculture and Rural Development

Since its inception, the Group has made significant investments in member countries to finance agriculture and rural development. The total accumulative approvals reached USD 12.6 billion in 2017. Agriculture and rural development (ARD) projects now represent almost a fifth (19%) of all approvals made by the Bank to date.

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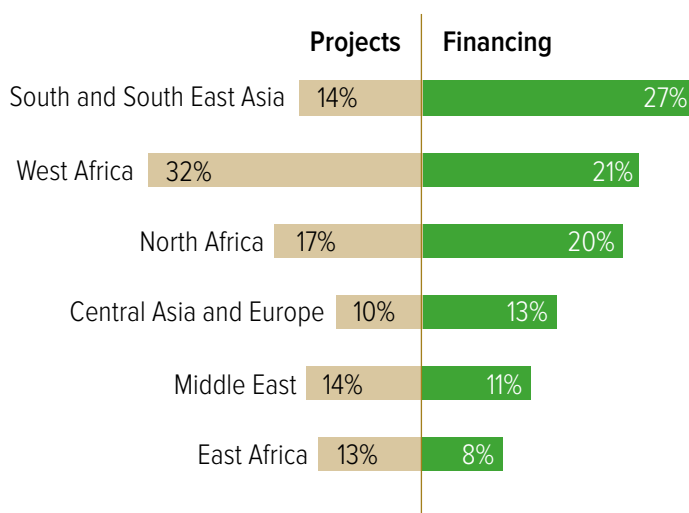
4 Agriculture Global Practice, IsDB

5 Agriculture Global Practice, IsDB

During the Bank's first 30 years, total approvals for ARD projects amounted to about USD 3.2 billion; but since the global food crisis of 2008, such investments have tripled. In its 2008 "Jeddah Declaration" Initiative, IsDB committed USD 1.5 billion to food security programs in its member countries in an effort to mobilize a total of over USD 2.5 billion in ARD financing. Member countries have benefited considerably from this initiative by the Bank and its multilateral development partners, albeit not equally. The Jeddah Declaration Initiative provided short-term assistance to least developed member countries (LDMCs) through various programs that included: help in building strategic inventories for food security; providing agricultural inputs, such as fertilizers, improved seed, pesticides, and fodder for livestock; and supplying needed agricultural machinery and equipment.

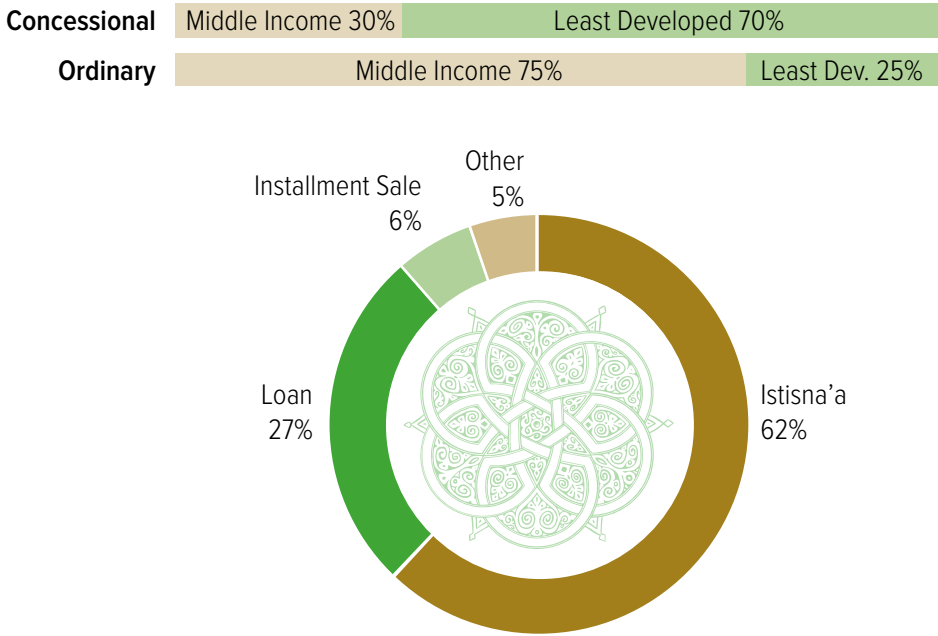
The majority of ARD project approvals have been for the Asia, West Africa and North Africa regions. Together these regions account for 68% of the total ARD financing provided, and almost half (49%) of the approvals made since 2008 (Figure 2.1).

Financing provided by IsDB is either 'concessionary financing' (grants and interest-free loans) or 'ordinary financing' (funds raised from the market). As shown in Figure 2.2, the objective of the Bank is to allocate as much of the concessionary financing as possible to the LDMCs. Of the concessionary financing allocated to agriculture and rural development, the majority (about 70%) went to the LDMCs. The opposite is true with respect to ordinary financing, of which the majority (about 75%) went to middle-income member countries.



**Figure 2.1: Agriculture and Rural Development project approvals by regions**





**Figure 2.2: IsDB modes of financing agriculture and rural development projects**

### Structure of the Financing Mode

'Istisna'a' financing is the most favored mode for funding ARD projects, followed by concessionary loans. Under Islamic financing, the Istisna'a mode involves making a contract whereby the funding party agrees to deliver an asset at a pre-determined future time at an agreed price. One reason for its popularity is its suitability for financing construction (infrastructure) projects – and a majority of IsDB Group projects involve some form of construction. Other popular financing modes include 'Installment', 'Sale', and 'Leasing', which are typically used for financing equipment, raw materials, seeds, and other inputs needed to implement ARD projects.

In many cases, IsDB projects entail multiple modes of financing, with different modes used to finance the different components of the project for which they are best suited. The flexibility of Islamic finance modalities enables the Bank to support a wide variety of ARD projects.

The Bank's agriculture and rural development financing is organized around three main thematic areas: 1) agricultural production (crops and livestock), 2) integrated rural development, and 3) water and environment. About 25% of the total financing to date has gone to irrigation and drainage development projects, followed by integrated rural development and general agriculture

## Definition of Some of the IsDB Group Modes of Financing

**Installment Sale** – IsDB Group purchases an Asset and sells it to the Purchaser (client) at an agreed Sale Price (cost plus a mark-up). The Purchaser pays the Sale Price in instalments. The ownership/title of the Asset is transferred to the Purchaser on the date of delivery of the Asset.

**Istisna'a** – IsDB Group appoints the Purchaser (client) as its Agent who gets the Asset constructed/manufactured. When the Asset is ready and accepted by the Purchaser, IsDB Group transfers the title of the Asset to the Purchaser, who then pays the Sale Price of the Asset in deferred payments.

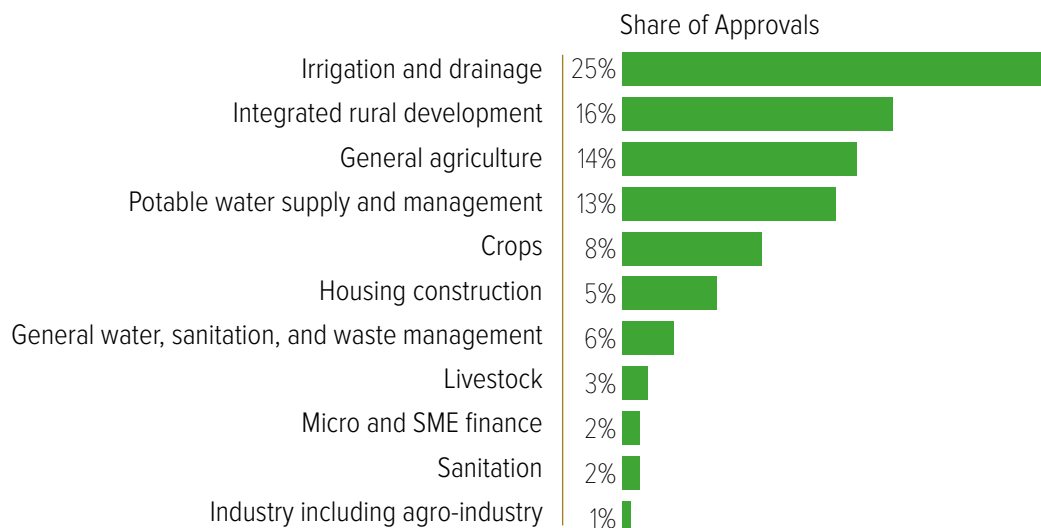
**Loan** – IsDB Group provides long-term concessional facilities for financing development in its Member Countries. A service fee is charged to cover administrative expenses.

**Source:** IsDBG, 2014

projects (Figure 2.3). In addition, the Bank is a keen promoter of microfinancing (see Chapter 9) as an important way to directly assist farmers in gaining access to needed equipment, fertilizer, improved seed, and other inputs and raw materials. The Bank

is also supportive of community driven development activities and has financed a number of such projects, both in Asia and Africa (see Chapter 8).

An international comparison reveals that the level of ARD financing is relatively



**Figure 2.3: IsDB Group agriculture and rural development financing by type of project**

low in member countries. Government spending allocated to agriculture and rural development varies by country and by region, and this variability is indicative of the level of support needed in a given country or region.

### **Bridging the Financing Gaps**

Despite intensive resource mobilization efforts by IsDB Group and other multilateral development banks, the need for agricultural financing remains very large and, unfortunately, not adequately addressed. In a broader development context, the United Nations Conference on Trade and Development (UNCTAD) has estimated that, if developing countries are going to achieve the SDGs, an annual investment in their efforts between 2015-2030 of about USD 4 trillion is required. However, annual investment is only USD 1.4 trillion, leaving a massive funding gap of USD 2.5 trillion per year (UNCTAD, 2014). Annually, the smallholder farmers in sub-Saharan Africa, South and Southeast Asia and Latin America, require over USD 200 billion in financing to grow their businesses and improve their livelihoods (Rural and Agricultural Finance Learning Lab, 2016). The Business and Sustainable Development Commission estimates that achieving the SDGs could provide opportunities worth USD 12 trillion in agriculture and food and other sectors by 2030 (Business and Sustainable Development Commission, 2017). Most of the current financing gap has to come from the private sector.

### **New Approaches to Financing Agriculture and Rural Development**

In a bid to bridge these funding gaps, development institutions have identified additional and innovative sources of financing, such as impact investing and crowdsourcing. These new financing strategies have attracted the attention of policy makers because they have a “... deliberate intention to generate positive social or environmental impact at the outset, and actively seek out investments for which there are measureable positive social and financial returns...” (IRTI and IICPSD, 2017). Moreover, the IsDB Group will strongly engage the private sector to mobilize additional resources to meet the investment targets required to grow the sector and achieve related SDGs.

These new financing tools are critical to marshaling more resources for ARD in member countries. They constituted an important component of the effort to expand funding under the 2008 Jeddah Declaration and a Lives and Livelihoods Fund (LLF).

### **The Special Program for Development of Africa (SPDA)**

Parallel financing with other international partners is an important means for bridging gaps in financing. In this regard, the IsDB Group launched the ‘Special Program for Development of Africa’ (SPDA) with an investment of USD 5 billion, which enabled the Group to leverage an additional USD 7 billion from other development partners. The main objective of the SPDA is to effectively finance projects using

parallel financing with other development partners. One of the more important SPDA interventions has been to improve crop productivity of smallholder farmers in sub-Saharan Africa member countries. IsDB provided USD 58.5 million for such work in Benin, Burkina Faso, Cameroon, Mali and Niger. In the same vein, the Bank also approved USD 52.4 million for a livestock and fisheries project in northwest Cameroon, and USD 40 million for a rice value chain development project in the Chari-Lagone Plain in Chad.

### **Lives and Livelihoods Fund (LLF) – A Multi-Donor Fund**

Another flagship financing initiative for leveraging ARD financing in member countries is the Lives and Livelihoods Fund (LLF). Launched in 2016, LLF aims to mobilize USD 2.5 billion over five years with its primary target being assistance to the Bank's LDMCs. Development focus areas for the LLF are in health, agriculture, and rural infrastructure. The initiative blends IsDB's ordinary resources with grant resources from other donors, which will make the financing more concessional and the debt more sustainable. By the end of 2017, total LLF financing was USD 605.5 million, with 43.7% (USD 264.5 million) going to agriculture and rural development projects, an allocation consistent with LLF's core funding priorities.

### **Partnerships to Improve Public-Private Financing**

Thanks to positive reforms within the IsDB Group, the Bank has greater flexibility

to form partnerships both with private organizations and public institutions to increase and improve project financing. Partnerships with the International Fund for Agriculture Development (IFAD), the UN Food and Agricultural Organization (FAO), LLF, the King Abdullah University of Science and Technology (KAUST), and the International Centre for Biosaline Agriculture (ICBA) will improve resource mobilization and enable better targeting of ARD interventions. However, as these resources grow, the Group will need to strengthen project implementation capacity in many member countries so as to ensure the effective use of additional funding.

### **Lessons Learned**

- Agriculture and rural development financing in member countries requires concessional financing that is affordable to LDMCs. As discussed above, the resources required to achieve the SDGs are enormous and require collective efforts at a global level.
- Strengthening the capacity of national institutions in project management and fiduciary oversight is critical to ensuring effective project implementation and achieving meaningful impact. It is essential that all rural development initiatives mainstream capacity development components, not only for beneficiaries but also Ministries of Agriculture staff and other concerned national institutions. This will improve project implementation and help overcome delivery challenges.

- Limited IsDB country presence in the past had reduced its ability to provide sufficient oversight and support to the country projects. To address this, IsDB restructured its project delivery system by decentralizing through regional hubs. This is expected to significantly improve project identification, design and implementation at the country level.

## Conclusion

Sustained agricultural growth requires significant investments in agriculture and rural development. Public investments by national governments alone is insufficient to address the large financing needs in developing countries. Since its inception, the IsDB Group has made substantial ARD investments in member countries. An international comparison reveals that the level of financing in member countries is relatively low. Despite intensive resource mobilization efforts by IsDB and other multilateral development banks, the need for ARD financing remains massive. In a bid to bridge this gap in financing, development institutions have identified innovative sources of financing, such as impact investing and crowdsourcing, which are built around private sector financing. For these innovative sources of financing to have the desired impacts, the delivery capacity of national institutions has to be strengthened.

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## Chapter 3

# Building the Resilience of Agricultural Systems to Cope with Climate Change

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### Key Messages

- To make agriculture systems more resilient over the longer term requires taking an integrated approach to making interventions, and this in turn requires strengthening the implementation capacities of national and regional institutions.
- A multi-layered approach to building resilience – one that involves immediate, short- and medium- to long-term actions – has great potential for both minimizing the number of people affected by climate shocks and steadily building resilient systems over time.
- In order to succeed, regional resilience-building efforts require a financing mechanism that provides adequate funding to individual countries in a region, and does so in a synchronized manner.

### Introduction

The impacts of climate change are starting to take a major toll on farmers, especially in vulnerable developing countries where many millions of smallholders derive their livelihoods from rainfed agricultural systems. Climate variability is clearly undermining food security and socioeconomic development. In many regions, rising average temperatures are reducing agriculture productivity, while increasingly erratic rainfall patterns are making agricultural planning very difficult (Climate and

Development Knowledge Network, 2014). In 2016, East Africa experienced a devastating drought that left several millions of people food-insecure and triggered an unprecedented tide of mass migration. Climate change has been described as hunger risk multiplier. By 2050, about 20% more people will be at risk of hunger because of climate change, with majority (65%) of this population in sub-Saharan Africa (World Food Programme, 2012). The impact will put about 49 million more people at risk of hunger by 2020 and rising to 132 million by 2050 (International Fund for Agricultural Development, 2009).

IsDB member countries are among the most affected by climate change. For many of them climate change has

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intensified existing agricultural challenges, a situation further compounded by a lack of resources needed for implementing adaptation and recovery programs. Building more resilient agricultural systems in member countries is essential to ensuring a prosperous future for the people who live there.

IsDB has been working to increase the resilience of member countries by incorporating specific adaptation components in its regular agriculture and rural development projects and operations, and through standalone interventions focused on building resilience as their primary objective. The Bank’s interventions, which are consistent with its overall climate change policy framework (Islamic Development Bank, 2015), support national strategies and plans for adapting to climate change, as well as their Nationally Determined Contributions (NDCs) to climate change mitigation. With the 2015 Paris Climate Agreement, expectations for support and financing from development organizations and donor countries rose considerably, as did the pressure to demonstrate positive results (United Nations, 2016). Considering the actual scarcity of financing available to meet the climate change challenges faced by developing countries, there is an increased need to be ever more effective when designing development interventions.

## Integrated Climate Change Adaptation and Resilience Framework

A resilient agro-ecosystem has the capacity to absorb shocks related to climate change while retaining its basic structure and ways of functioning, a capacity for self-organization, and the ability to adapt to climate stresses and change in a timely and efficient (Intergovernmental Panel on Climate Change, 2012). Regardless of the scale and scope of climate shocks, a resilient agricultural system will continue to function well.

Building on its experience in the agriculture sector, IsDB learned over the years that taking an integrated approach to its resilience interventions





leads to a better use of resources and to better results. Agricultural practices vary considerably across different geographical locations, as does the scale of climate change impacts in these locations. Building resilience using an integrated approach helps to ensure wider coverage of interventions and greater capacity of local communities to deal with climate shocks and adapt to climate change.

From a macroeconomic perspective, the resilience of agricultural systems is composed of ‘instantaneous and dynamic resilience’ (Hallegate, 2014). Instantaneous resilience limits the magnitude of immediate production losses due to, for example, an extreme weather event. Dynamic resilience, on the other hand, reflects a system’s ability to recover from such an event. IsDB thus believes that making agricultural systems truly resilient requires a multi-layered approach (Figure 3.1). Such an approach first addresses the immediate needs of an affected population, followed by rebuilding people’s livelihood sources

(recovery), and finally consolidating the process and building adaptive capacity of rural communities to climate shocks (sustainability). These stages comprise immediate, short, and medium- to longer-term response phases.

### **Building Resilience in the Sahel Region of Sub-Saharan Africa**

In 2011, the Sahelian region of West Africa experienced a devastating drought that set back their economic and social development. Countries in the region recorded significant decline in grain production. A severe shortage of fodder led to the early movement of livestock and herders, as well as changes in the livestock corridors used, causing not only losses in livestock but also rising tensions between pastoralists and farming communities at border areas. Immediately, and in collaboration with the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), IsDB approved USD 2 million in emergency food assistance to seven drought-affected Sahelian countries (Burkina



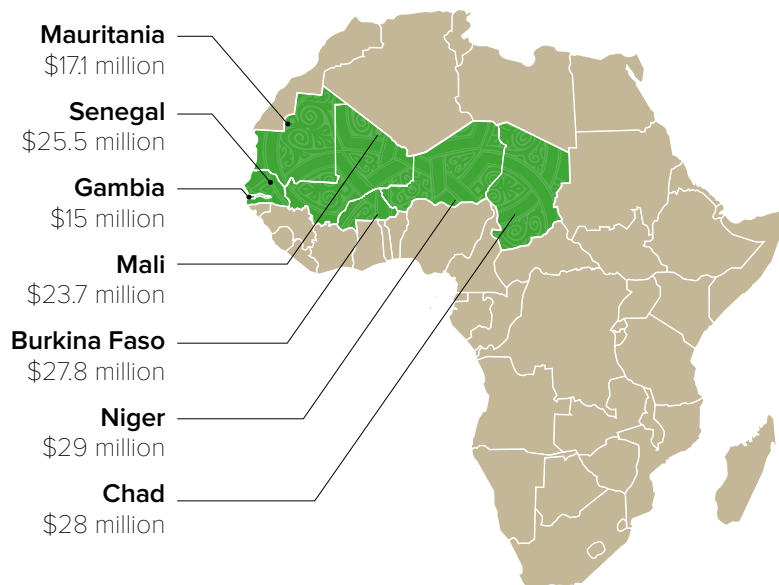
**Figure 3.1: IsDB’s multilayered approach for building resilience to climate change**

Faso, Chad, Gambia, Mali, Mauritania, Niger and Senegal).

The Bank and CILSS are fully aware that the Sahel region is undergoing the adverse effects of megatrends related climate change, and that such emergency interventions can only help meet the immediate need for food, having only very limited effects on food insecurity. Accordingly, in coordination with some member countries, IsDB and CILSS, as a technical partner, rolled out a regional program aimed at reducing food insecurity and building resilience among vulnerable populations in these seven countries. The program is designed to achieve a more sustainable and transformative impact that addresses the issue of persistent food insecurity due to recurrent drought caused by climate change. More specifically, the program

aims at: 1) enhancing the livelihoods of targeted rural populations by increasing the productive capacity of their assets; 2) developing the capacity of target communities to adapt to climate change; and 3) improving the capacity of decision makers to manage the food crises in the seven Sahel member countries that were significantly affected by the drought. The program encompasses a regional dimension to be implemented with the help of CILSS. It includes support to the regional information and early warning system, as well as for regional coordination of program activities, monitoring, and sharing of results.

Through its phased approach, IsDB approved a program to finance country projects aimed at warding off devastating droughts and famine. Specifically, the program focuses on:



**Figure 3.2: IsDB Building Resiliency to Food Insecurity in the Sahel Program (beneficiary countries)**

- Establishing a sustainable financing mechanism to address food shortages by improving the availability of and access to food and feed;
- Rehabilitating and preserving the livelihoods of the most vulnerable households, and strengthening the resilience of pastoralists, agro-pastoralists, and farmers;
- Developing harvest, post-harvest, storage and rain water harvesting infrastructure;
- Building a regional mechanism for the forecasting, management, and prevention of recurring food crises; and
- Contributing to the creation of a regional strategic food reserve by developing much needed storage and conservation infrastructure.

### **Bringing Impactful Change to Fragile Rural Communities in Burkina Faso**

The project is being implemented in three administrative regions of the country: Center-North, the East, and the Sahel region. The regions were selected based on the geographical distribution of the most vulnerable populations affected by climate change, based on a household survey conducted in 2011 by Burkina Faso's Ministry of Agriculture.

In the short and medium-term, an important focus of the project is rehabilitating the livelihoods of the rural populations that have lost their production assets due to recurrent droughts. It is doing so by providing livestock (starting with small ruminants) and needed crop

### **Expected Outputs from Burkina Faso**

- Replenish Burkina Faso's food security stock with 26,000 tons of cereals and 5,000 tons of animal feed;
- Restock 20,000 vulnerable pastoralists with 80,000 small ruminants, plus access to veterinary services;
- Establish 13,000 hectares of high-yielding cowpea varieties for the benefit of 26,500 women farmers, providing seed, access to fertilizer and pesticides, and training on good agronomic practices;
- Upgrade irrigation to some 400 hectares managed by vulnerable smallholder farmers;
- Construct storage facilities with a capacity of 11,000 MT to improve the national food security stock;
- Construct 64 poultry units; and
- Build the capacity of the national and regional information system to support an Early Warning System for extreme weather events.

production inputs. The medium- to longer-term scope of the project includes constructing national and community storage warehouses to increase food security reserve capacity and constructing small irrigation facilities to improve the productivity of smallholder farmers, making them less vulnerable to climate shocks.

At the regional level, the project is collaborating with CILSS in strengthening a multi-country early warning information system. This initiative is also building the capacity of local agricultural information systems and data collection related to crop production, livestock, and market information systems.

Based on the progress achieved so far, the project is succeeding in helping to rehabilitate the livelihoods of a significant number of households through restocking of small ruminants and supporting women farmers in producing cowpeas, both for local consumption and as a cash crop. Within the first two years, 34% of the project's target for restoring livestock production has been achieved (see box). About 68% of the beneficiaries are women.



**Rebuilding the livelihoods of smallholder farmers hit hard by drought starts with the replacement of livestock, an important household asset**

This activity is being implemented in parallel with the provision of animal feed through a separate financing agreement provided by ITFC of the IsDB Group. In the absence of an operational mechanism for supplying animal feed, the project is strengthening the capacity of livestock beneficiaries with inputs and tools to grow fodder cowpea.

At the end of 2017, after sales, consumption and mortality, small ruminant stock increased an average of about 4%. This amounts to an average of four small ruminants per household, valued at about USD 380. The crop production part of the project reached about 80% of its target within the first two years of the program. A total of 10,648 hectares is now being cultivated by 20,198 female-headed households, with grain yields of about 740 kg/ha, which is significantly higher than global average of 450 kg/ha (Abate et al., 2012). This generates surpluses that to go to markets, and the project management team is helping farmers do this in ways that generate higher incomes.

IsDB's intervention is helping vulnerable households in Burkina Faso to diversify their nutritional sources; the improved fodder cowpea varieties being grown yield beans that are rich in protein and nutritious fodder to sustain livestock. The crop also generates a source of revenue for the women and allows them to meet household needs other than food, such as school fees and for their children and better clothing. The potential sustainability of this intervention is high; the women smallholders involved set aside a portion



**A cowpea farmer who is benefiting from the crop production component of the resilience program in Burkina Faso**

of the proceeds coming from cowpea sales in order to purchase needed inputs for the next cropping season.

To strengthen post-harvest practices and marketing, the project is providing the women's groups with scales to more accurately measure of the weight of their produce, and in some locations constructing storage facilities that will enable farmers to avoid selling their crops when market prices are depressed (at harvest); properly stored crops can also serve as collateral to improve farmers' access to credit.



**A women farmers' association being assisted in marketing their extra cowpea production by the project officer (second from the left)**

### **Resilience Building in the East African Drylands**

The Greater Horn of Africa is one of the most vulnerable regions in the world to climate variability. This is due to the frequency of extreme weather events and to low adaptive capacity caused by inadequate infrastructure, limited social capital, poor policies, and the lack of effective early warning systems (IGAD 2018).

Communities in the dryland regions of Djibouti, Uganda and Somalia are increasingly vulnerable. Poverty levels are extraordinarily high in these area, with local communities lacking access to the most basic services: education, primary health care, safe water and sanitation, veterinary care for their livestock, and security from the ravages of drought and other environmental shocks.

To support those communities and build their resilience, IsDB initiated the East Africa Regional Dryland Program in 2013 with a financing envelop of USD 35 million for the Governments of Djibouti, Somalia and Uganda. The program aims



**Figure 3.3: IsDB East Africa Dryland Development Program (beneficiary countries)**

to: 1) increase in the level, diversity, and stability of household incomes and assets of target agro-pastoralists; 2) increase the primary education enrolment rate; 3) improve community access to and use of health services; 4) improve community understanding and practice of good natural resource management practices; and 5) improve the business skills of community members and increase market participation.

The program is improving the socioeconomic wellbeing of some of the most vulnerable communities in these three countries. For example, in Uganda the program is being implemented in Karamoja Region, which is located in the northeastern part of the country. This is



### Uganda Dryland Development Project: Achievements in Crop and Rural Infrastructure Development (2015-2017)

- 70.8 tons of improved seeds distributed to 4,080 farmers;
- 400 acres (162 hectares) of land used for on-farm technology demonstrations;
- Establishment of 5 nurseries that have so far provided more than 5000 high-quality seedlings of various fruit trees;
- 127 extension workers and lead farmers have been trained in good agricultural practices relating both to crop production and livestock rearing;
- 53.2 km of rural roads have been rehabilitated or constructed; and
- Two boreholes have been drilled and equipped to provide much needed water.



one of the most impoverished regions in the country due to protracted civil strife. Program activities in Uganda cover four districts: Nakapiripirit, Napak, Amudat and Moroto. This work aims to: 1) enhance the productivity of livestock and dryland agriculture; 2) improve rural and market infrastructure; 3) improve access to health care, nutrition and education in rural areas; and 4) enhance the development of community businesses.

### Lessons Learned

- Adopting a regional approach to building the resilience of vulnerable communities is critical for capturing and sharing lessons learned and transferring best practices among countries in the region.
- Early success was achieved in Burkina Faso in the Sahel region and Uganda in East Africa because the national institutions were ready and able to implement program activities relatively faster other countries in these two regions.
- In the Sahel program, the financing mechanism for replenishing food security stocks and animal feedstock was designed on the basis of a short-term financial arrangement. After the program commenced implementation, it became apparent that such interventions should be designed a longer-term horizon, certainly more than the 3-5 years typical of most development projects.
- For the East Africa dryland regional program, the co-location of investments in health, education, and agriculture is having significant impacts on communities in the Karamoja region.

This approach can be very effective when relevant national stakeholders (including ministries) coordinate their efforts. This is evident in the case of Uganda.

- Drought is a recurrent issue both in the Sahel and the Greater Horn of Africa regions. This points to a need for strengthening agricultural risk management in the face of climate change. Expanding safety net measures to include effective agricultural insurance programs would help mitigate downside risks.

## Conclusion

Climate change is already happening; people are losing their assets, investments, and livelihood sources. Even if emissions are significantly reduced now, the effects of climate change will be felt for decades to come, especially by agriculture systems. Although some IsDB interventions, such as the resilience program in the Sahel, faced challenges at the outset, the program picked up steam and is now on track to deliver benefits to about 12 million people across the seven target countries. The interventions being made there demonstrate how to make the agricultural systems in IsDB member countries more resilient to climate change impacts. The challenges associated with taking an integrated approach to implementing interventions can be met by engaging and partnering with strong technical institutions (both regional and international).

IsDB has learned much from its past and current resilience interventions. Moving forward, it plans to capitalize not only on what it has learned but also on the strong global momentum in support of ARD efforts to improve climate change adaptation and resilience. In this respect, the Bank will ensure that all its ARD projects factor in climate-related risks, and that adequate measures are put in place to mitigate them. These measures will include capacity building, climate risk management frameworks, and the inclusion of any physical assets that may be needed. IsDB has put climate adaptation and resilience at the heart of what it does under its new business model. It aspires to contribute to the transformation of agriculture and food production systems in its member countries, making them not only more efficient but also more resilient and sustainable.

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## Chapter 4

# Investing with Smallholder Farmers to Strengthen Food and Nutrition Security

*Ougfaly Badji<sup>1</sup>, Bashir Jama<sup>2</sup>, Nur Abdi<sup>3</sup>, Ali Muhammad Khan<sup>4</sup> and Rahim Haris<sup>5</sup>*

### Key Messages

- Strengthening the production and delivery aspects of national input systems (high yielding seeds and planting materials, as well as fertilizers) is critical to raising the yields of smallholder farmers in a sustainable manner.
- Value chains designed to improve input and output markets are critical to raising productivity and incomes of smallholder farmers
- Regional programs and partnerships that facilitate knowledge sharing can and do catalyze productivity increases at scale.
- Access to financing for farmers and agribusinesses is essential to increasing productivity. Mechanisms to facilitate such access should be an integral part of agriculture and rural development programs.

### Introduction

**S**mallholder agriculture dominates the farming community in most IsDB member countries. The productivity of smallholder agriculture, however, is low in many of them. This is most pronounced in sub-Saharan Africa where the yield of cereals was only a third of the global average in 2016 (Figure 4.1). Reversing this situation is essential if agriculture is to feed the 8010 million people that are currently food insecure, of which nearly half reside in IsDB member countries (Islamic Solidarity Fund for Development, 2016).

Although complex and highly variable across countries, the challenges to raising agricultural productivity are well known to the development community: limited access to improved seeds and quality planting materials, low soil fertility and inadequate access to fertilizers (both organic and inorganic), poor access to extension and advisory services, dysfunctional markets, and droughts and floods that may be associated with climate change, among others. What is less well known though are entry points for interventions that can bring systemic and sustainable changes. These entry points will certainly vary from country to country or region to region, but there are three interrelated and promising ones that have been identified. These are increasingly becoming the basis of Agriculture and Rural Development (ARD)

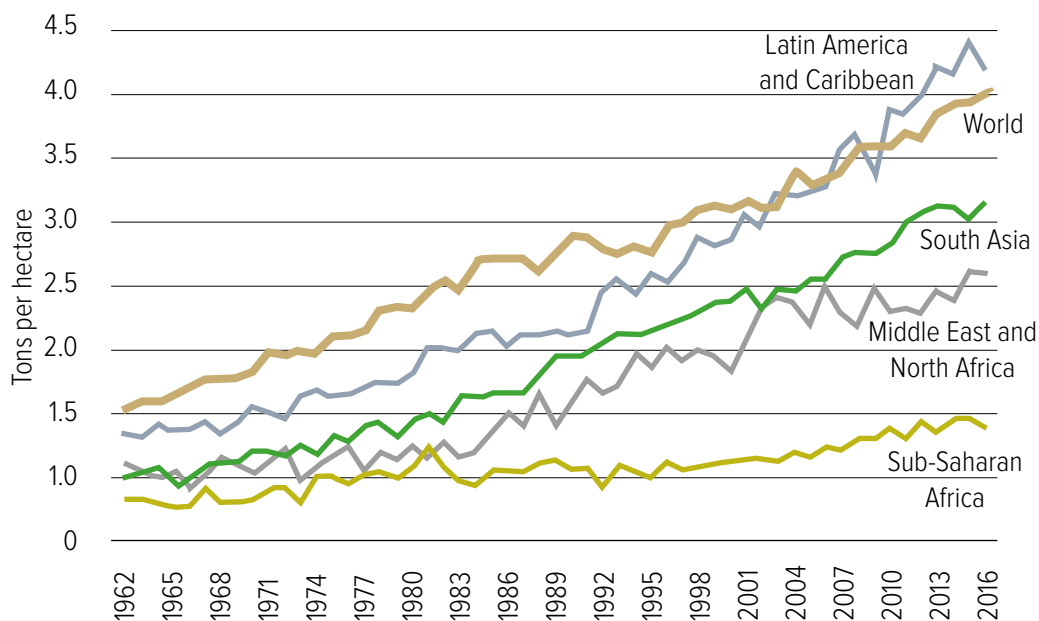
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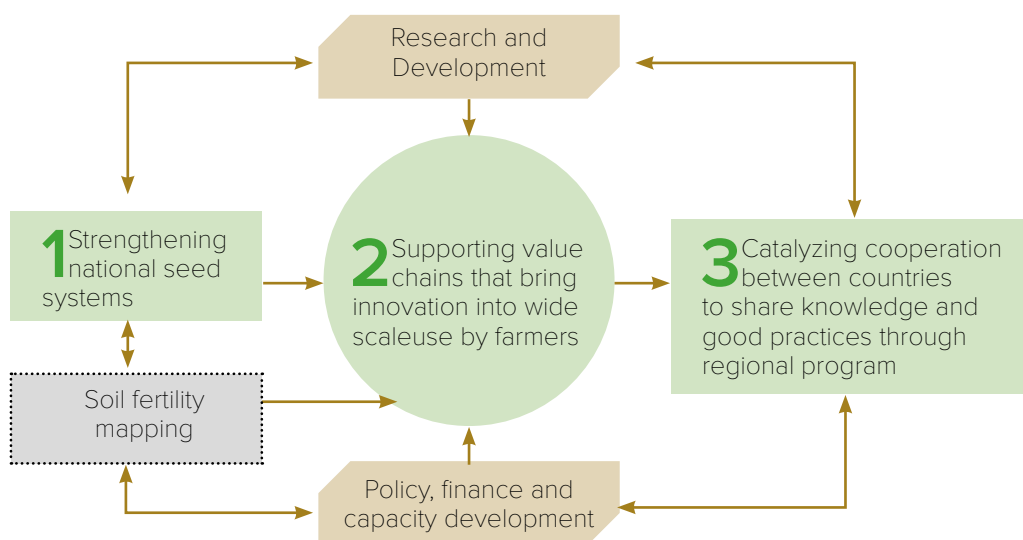
**Figure 4.1: Cereal yields in sub-Saharan Africa in comparison with regional and global averages**

Source: World Bank Data (<https://bit.ly/2pDT1j9>)

projects supported by the IsDB Group (and its development partners) aimed at growing the productivity of agriculture in the Group's member countries.

Figure 4.2 highlights entry points for raising smallholder agriculture productivity. It starts with strengthening the production and delivery efficiency of agricultural input and service systems. Quality inputs (improved seeds and fertilizers) are essential to raising productivity (yields per unit area planted) under both the rain-fed and irrigated conditions. In addition, strong extension and advisory services are important for enhancing the adoption and efficiency of improved inputs. A case study from Bangladesh is used to illustrate

the importance of seed supply systems, an important input to raising productivity. A second and related entry point involves providing support to value chains (led by farmer associations and the private sector) that deliver new technologies, extension and advisory services, and market innovations to farmers, both small and large scale. This entry point is illustrated using a case study from Nigeria. A third entry point involves regional projects that support the replication of good practices for raising productivity across countries. This is illustrated using the example of a regional smallholder-focused crop production project in West Africa.



**Figure 4.2: Entry points for raising smallholder productivity: The IsDB Group's approach**

### The First Entry Point: Enhancing Access to Yield-Enhancing Inputs

Increasing access to improved seeds and planting materials as well as fertilizers, is critical to increasing productivity and closing yield gaps. The use of fertilizers is particularly important for realizing the genetic potential of improved planting materials. This is one of the key reasons for the low yields of staple food crops in sub-Saharan Africa where the use of these inputs by smallholder farmers is low. It is important that access to both inputs be developed simultaneously. This is, indeed, the reason behind the success the Green Revolution in Asia and other countries in the 1970s and 80s (Pinstруп-Andersen & Hazell, 1985). Strengthening input value chains, therefore, is an important component of IsDB Group's support to member countries. The Bangladesh case presented next illustrates key interventions made by the public

sector in growing the national supply of improved seeds and planting materials.

There is consensus among the agricultural experts that high-quality seed of improved varieties is considered the basic input for increasing agricultural output and achieving self-sufficiency in food production. The effectiveness of other inputs like fertilizer, pesticides and irrigation depends largely on the use of quality seeds. Research in many countries has clearly demonstrated the value of using quality seeds, with yield increases of more than 15–20% under farmers' management conditions (Ambika et al., 2014). The Bangladesh government correctly identified the lack of high-yielding quality seed as a major constraint to increasing productivity and achieving the goal of household food security (Planning Commission, 2011). Across all crops, the coverage of quality seeds in Bangladesh is only 20% (BADDC, 2013).

The government made a wise decision to invest in a major national program to improve the production and supply of quality seeds of important food crops, coordinated by the Bangladesh Agricultural Development Corporation (BADC). Through a 6-year national program funded jointly by IsDB and the Government of Bangladesh (from 2011 to 2016), remarkable progress was made in the access by farmers to high-quality seeds and planting materials of a wide range of crops: rice, wheat, potato, maize, pulses, tuber crops, oil seeds, pulses and vegetables, among others.

The project used an integrated seed value chain approach that addressed the production, processing and distribution of quality seeds, disseminated appropriate seed production and management practices, and strengthened the institutional and technical capacity of stakeholders, including contract seed growers, producers and traders, agricultural research and academic

institutions, private seed companies, regulators, and policy makers. Specifically, the capacity of three major government organizations was significantly improved: the BADC, the Bangladesh Agricultural Research Institute (BARI), and the Bangladesh Rice Research Institute (BRRI). These institutions increased the supply of breeder, foundation and certified seeds by engaging private sector growers in seed production and multiplication. They also regulated and ensured the quality of the supplies and built capacity of stakeholders across the value-chain. The capacity building program covered nearly 7,000 seed producers and dealers, 26,000 farmers, and around 13,000 researchers and quality control experts. Twelve new manuals on seed production, processing, and quality control were developed, updated and disseminated to stakeholders to provide guidelines to best practices.

Complementing capacity development was the launch of a modern ICT-based seed quality monitoring system to provide updated data on the market for quality seeds and forecasting future trends. Taking a forward-looking perspective, major investments were made in finalizing the release of important varieties to tackle the emerging problems of salinity, drought and flooding. This integrated, forward-looking approach will have wide-ranging benefits in the long run as new varieties are disseminated and adopted. There were also some immediate benefits resulting from the increase in supply of quality planting materials provided by BADC.



**Seed production manuals and guidelines from the Bangladesh quality seeds project**

Within 6 years, the project produced 37,000 MT of improved seed and planting materials, including 2,600 MT of breeder and foundation seeds, amounting to 22% of the quality seeds supplied. The project expedited the release of 15 new varieties, including one saline-tolerant and two tidal submergence-tolerant rice varieties, which will be critical to achieving household food security and building smallholder farmers resilience to shocks.

**The results** – While the accrual of project results will take time, the food production and consumption trends in Bangladesh reflect the impact of the government's programs (including the quality seed improvement project) on overall food

security in the country. The project helped to increase national food grain production from 32 million MT in 2009 to 35 million MT in 2016 for rice, and from 1.3 million to 1.35 million MT of wheat over the same period. A survey of farmers' fields benefitting from the project indicates incremental difference in yields varying from 7.7% for lentils to 13.9% for potato. These changes are having a positive effect on food security in the country.

**The missing link** – Increasing crop productivity requires going beyond strengthening the ability of public institutes to improve their production, processing, and marketing activities. Nearly 70% of the farmers in Bangladesh use farmer-sourced seeds, pointing to the need for interventions that both encourage the use of quality seeds from commercial entities, as well as enhance the quality of seeds being exchanged in the farmer-to-farmer system. The latter aspect was lacking in the project. Farmers cannot be encouraged to use the quality seeds without demonstrable financial viability in its use. This in many cases requires the provision of a complete package of production technologies to transform the farming business. The Nigeria case study that follows here demonstrates how integrated productivity improvement interventions (including the use of fertilizers) can complement quality seed supply to have a greater and more sustainable impact.



**A diversity of high-quality seeds of improved varieties are sold in Bangladesh's rural markets**

## A Second Entry Point: Supporting Value Chains that Put Innovations into Widespread Use

In the mid-2000s, the Federal Government of Nigeria launched a nation-wide program for food security in partnership with the Food and Agriculture Organization (FAO) of the United Nations. The objective of the program was to move existing technologies off the ‘shelf’ and into wide-scale use by farmers and agribusinesses. The goal was to improve national- and household-level food security by reducing rural poverty in an economically and environmentally sustainable way through crop productivity enhancement and diversification using a value chain approach.

The project was implemented in 27 Local Government Areas (LGAs) in the three states of Anambra, Gombe and Yobe, Nigeria. It strengthened value chains led by the private sector and farmers’ associations by investing in: 1) rural infrastructure (such as irrigation, rural feeder roads, and market facilities); 2) the improvement of production assets (such as land and livestock breeds); 3) the provision of production and agro-processing equipment, planting materials, and brood stocks; and 4) capacity building for smallholder farmers – the majority of them women – to adopt improved technologies. Farmers were trained in the use of good agricultural practices in production and value addition, and then provided with, through their farmers’ groups, ‘commodity modules’ that



**Rice farmers with IsDB staff in Gombe, Nigeria – IsDB National Program for Food Security Project**

included inputs, improved seeds, fertilizers, and crop-processing equipment. These interventions proved to be very effective over the five years of the project, not only in terms of learning about best practices, but also for technology transfer and adaptation by smallholder households. Farmers benefited from improved agro-processing equipment and on-farm storage technologies, resulting in a reduction of post-harvest losses by at least 20% on the participating farms. Among the equipment and facilities provided by the project to participating farmers’ groups were 90 metal grain silos, 6 groundnut milling machines, 9 grinding machines, 10 grain threshers, 15 rice milling machines, two palm fruit milling machines, one cassava processing machine, and 18 grain milling machines. These equipment and improved facilities provided the basis for training and bringing about change in farming practices and related agribusinesses in target regions.



## Smallholder Rice Farmer in Yobe State, Nigeria

**Mr. Alhaji Bukar Bida** – a smallholder rice farmer in Yobe State - was supported with a rice production module. He successfully completed the Farmer Field School training and implemented all the agronomic practices demonstrated by the project. After he started receiving project technical and financial support, he expanded his initial 2-hectare operation to about 7 hectares in 2013, and he is now cultivating about 20 hectares of rice using the improved variety FARO 44. His farm produced a yield of 8-10 bags per hectare of paddy rice using local varieties, which increased to 15-20 bags per hectare with FARO 44, which was supplied by the National Program for Food Security. In 2014, Mr. Bida was able to harvest about 400 bags (100 kg each) of paddy rice – i.e., 2 MT/ha. His farming skills and the quality of inputs he uses have continued to improve, and today his rice yields have reached more than 3 MT/ha.

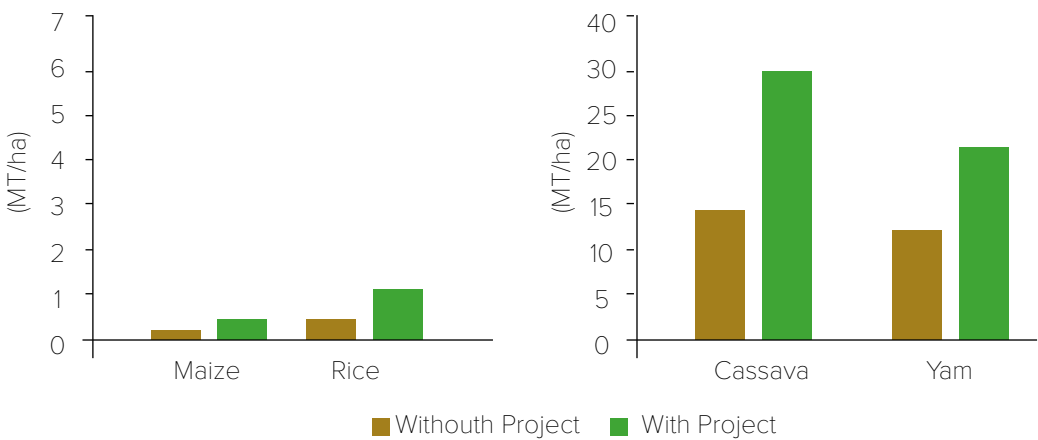


Grain milling at a community service center in Badejo, Yobe State, Nigeria – IsDB funded National Program for Food Security Project

Although not in the original design of the project, a credit component with simple disbursement, utilization and cost recovery mechanisms was introduced to ensure access to needed resources by farmers to sustain their new modes of operation. By the end of the project, considerable progress had been made towards greater uptake of innovations by farmers and agribusinesses. To sustain the gains they made, the communities involved expressed a strong desire for more sustainable rural credit system in the form of a registered microfinance institution serving their investments and financing needs.

**The results** – The project interventions enabled farmers to achieve substantial increases in average yields, ranging from 45% in lettuce cultivation to 256% in groundnut production (Figure 4.3). The project contributed to raising the living standards of smallholder farmers in these

three states. In Yobe, for example, a medical doctor changed his profession to farming because of the increased profitability of crop and livestock enterprises resulting from the project. The average household income was increased by more than 150%. The project: 1) produced 23,096 MT of crops, 2) enabled 10,021 smallholder households to have access to post-harvest technologies and farm mechanization, and 3) increased the number of households practicing improved farming techniques by 95%. Total of 515 farmers groups have been formed, compared to a target of 324. About 100% of the target farmers intensified their crop production and have been farming three crops per year for the past four years. The project sites became training grounds for farmers from the three states and beyond. They have, in essence, become platforms to nurture and grow sustainable value chains.



**Figure 4.3: Yield gains with and without the project intervention of important food crops. The key inputs were improved planting materials, fertilizers and good agronomic practices.**

Source: IsDB database

### A Third Entry Point: Catalyzing Knowledge Exchange Across Countries through Regional Projects

Regional cooperation between countries can be an effective means to leapfrog smallholder productivity gains by sharing knowledge on what works well (and what does not) under different conditions.

To this end, in 2013 IsDB Group funded a 5-country regional program, the Smallholder Agricultural Productivity Enhancement Program (SAPEP) for USD 68.54 million. The project covered Mali, Burkina Faso, Benin, Cameroon and Niger.

SAPEP was developed in partnership with the International Fertilizer Development Center (IFDC) and the Alliance for a Green Revolution in Africa (AGRA). The regional coordination under IFDC: 1) mobilizes and disseminates agricultural research results and knowledge across the countries; and 2) creates specialized national networks

across the production value chain that include plant breeders and seed multipliers, soil health experts, input suppliers, and agro-processors. These networks help to strengthen the capacity of those involved to improve smallholder agricultural productivity. The linkage among these national networks across countries is facilitated by creating knowledge-sharing platforms for effective technology transfer.

The program dovetailed with a similar one funded by the World Bank that also intervened in some of SAPEP's countries (World Bank, 2016). A strong focus of the SAPEP program was scaling up innovations that could improve the low soil fertility conditions faced by smallholder farmers, a major problem in much of sub-Saharan Africa. The program supported the wide-scale use of micro-dosing technology across three countries where it is most appropriate: Burkina Faso, Mali and Niger. This is an

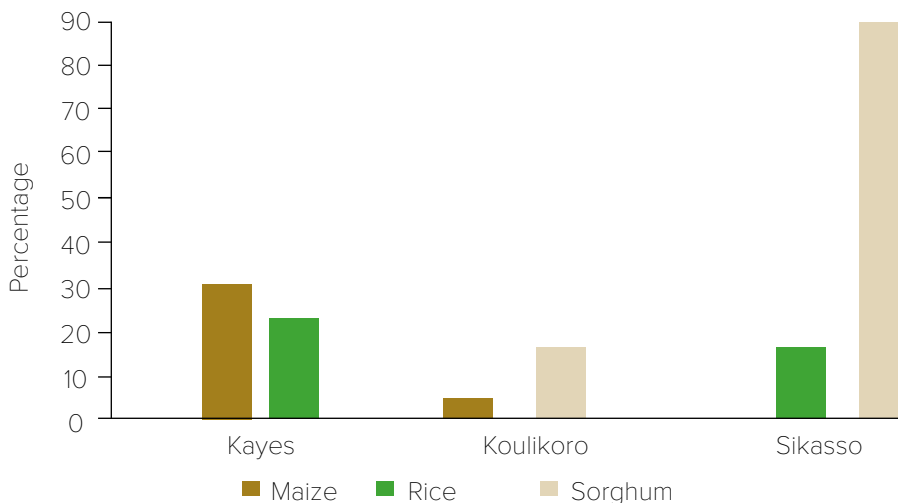


**On-farm demonstrations on the use of improved seeds and integrated soil fertility management in Sikasso region, Mali. The crops: Sorghum (hybrid variety, background) and cowpea (improved variety, foreground)**

agronomic practice that entails the placement of small amounts of fertilizers (including farmyard manure if available) into the planting holes (or at the base of growing plants) as opposed to broadcasting (Fatonji et al., 2016). It allows farmers to increase fertilizer use efficiency in low- to medium-rainfall areas (500 to 800 mm per annum). A challenge presented by this technology is the labor required to apply it, so the program addressed the problem by introducing the use of mechanized planters that were developed by the National Agriculture Research Systems (NARS) in Burkina Faso and Mali (Fatonji et al., 2016).

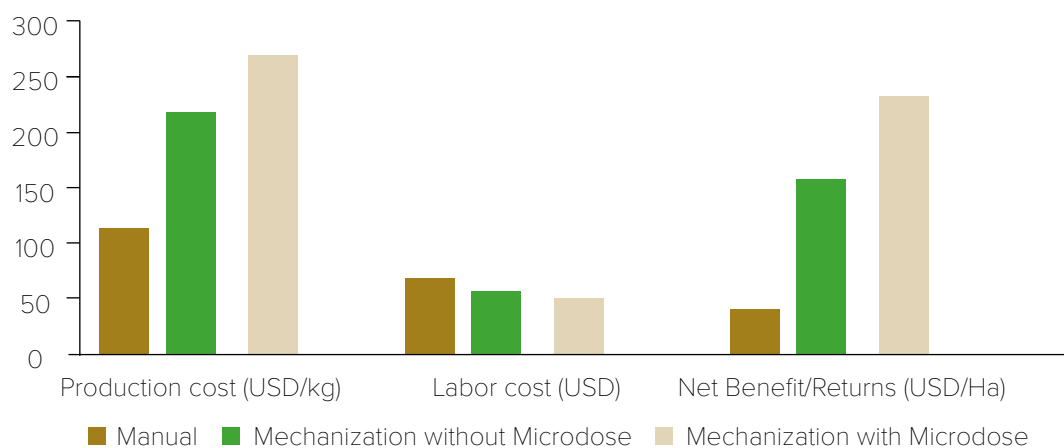
**The results** – The regional program facilitated wide-scale demonstrations aimed at creating broad awareness of this technology, which was already on shelf across the project countries. The value of using improved seeds, among other good agronomic practices (including soil fertility

management) was demonstrated to highlight the enormous potential yield gains under farmers' conditions which, for example, reached 31% for maize and 90% for sorghum in Mali (Figure 4.4). Such awareness creates demand for quality seeds and fertilizer from commercial companies, and this demand was further catalyzed by support from the program to map the soil fertility status of participating farmers. This increased demand has encouraged the development of private sector fertilizer companies to supply appropriate blends for the different sites and crops. The introduction of quality seed and mechanized micro-dosing has provided significant yield and financial benefits. In the case of Burkina Faso, it has increased the production of staple food crops of smallholder farmers by 141%, decreased labor costs by 32%, and delivered a five-fold increase in the net benefits accruing to farmers (Figure 4.5).



**Figure 4.4: Yield increase of improved varieties over local ones under rainfed conditions in three regions of Mali: Kayes, Koulikoro and Sikasso, in 2016**

Source: Project data; unpublished



**Figure 4.5: Yield and financial benefits of micro-dosing under the mechanization process in Burkina Faso**

Source: Project data, unpublished

## Lessons Learned

- It is essential to put in place policies to regulate the quality of inputs. If not in place and enforced, farmers can be exposed to fake seeds, and low-quality fertilizers and crop protection chemicals from those who want to cash in on the growing demand for inputs.
- The private sector should be considered an important strategic stakeholder at all three-entry points. Particular attention needs to be paid to seeds and fertilizer companies that are critical to sustaining impacts. They can also increase coverage through innovations such as information and communication technology (ICT) applications. Although the private sector was engaged in all three case studies presented, the level of

participation should have been greater.

- The inclusion of affordable financing schemes is essential. This was a missing component in all projects except SAPEP. In the case of Nigeria, a credit or revolving fund was introduced midway in the project at the request of the participating farmers and agribusinesses.

## Conclusion

The case studies presented here have highlighted three strategic entry points that can be used for interventions aimed at growing smallholder agricultural productivity and rural development in general. They provide practical platforms for exploring useful innovations and building strategic partnerships. Their use should, however, be governed by country-

and region-specific circumstances. Nevertheless, they provide a good framework for IsDB's ARD support to its member countries as they strive to improve the productivity of smallholder farmers and move towards achieving SDG 2 (Zero Hunger) by 2030.

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## Chapter 5

# Improving Livelihoods Through More Productive Livestock Systems

*Souleymane Kebe<sup>1</sup>, Javed Khan<sup>2</sup>, Bashir Jama<sup>3</sup> and Mohammad Al-Rawabdeh<sup>4</sup>*



### Key Messages

- Small-scale peri-urban dairy projects can significantly increase production by investing in different parts of the value chain, including: artificial insemination centers; feed and fodder production; animal health and veterinary services; milk collection and processing infrastructure; access to affordable finance; and upgrading the skills of farmers.
- Agro-pastoral development interventions are more effective when financed as regional programs, given the nature of livestock movements and challenges related to transhumance.
- Agro-pastoral development programs (such as those being implemented in the West African Sahel and in the East African drylands) are effective ways to improve smallholder livelihoods in IsDB member countries, particularly when meat and milk value chains are strengthened.
- Poultry and aquaculture production (fish farming) can significantly and quickly improve household incomes and nutritional status in member countries.

### Introduction

Livestock plays a major role in the agricultural systems and economies of most IsDB member countries. As is the case globally, the demand for animal products in developing countries is expected to more than double by 2050 (Food and Agriculture Organisation, 2016). This increased demand presents both an opportunity and a threat. It is an opportunity for livestock keepers who can produce for an expanding

market, increasing their incomes and improving their livelihoods. However, it can also be a threat because livestock production can have significant negative environmental impacts. Examples of such impacts include increasing greenhouse gas emissions, and the natural resource depletion, such as water, soil nutrients, and biodiversity. In addition, conflicts between farming communities and pastoralists is on the rise in many countries due to competition over using land for growing crops or grazing livestock. This is a serious concern, as such conflict has led to the

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death of people and the loss of property, especially among the agro-pastoralists in both East and West Africa (International Crisis Group Africa, 2017).

Given the importance of livestock in IsDB member countries, the Bank sees an urgent need to seize on emerging opportunities and manage growing threats to the industry. The livestock sector in Mali, for instance, accounts for approximately 50% of the country's agricultural GDP, and about 85% of its agricultural households keep some form of ruminants (Ciblis et al., 2015). In the Kyrgyzstan Republic, a member country, the sector accounts for about half of agriculture's contribution to GDP and is one of the strongest components of the rural economy (Nefedjev & Bolotbekova, 2016). Moreover, livestock are used to till farmers' fields and to transport inputs and outputs to and from markets. Animal manure also plays a critical role in soil fertility management by smallholder farmers in many countries.

Increasing investment in the livestock sector is essential, both from an economic perspective and because of its contributions to food and nutritional security. Livestock have a critical role to play in achieving the Sustainable Development Goals (SDGs), especially SDG 2 ('Zero Hunger'), by 2030. The need to adapt to climate change impacts adds to the impetus for increasing investments in the livestock sector. In addition, rising global awareness about health concerns related to the consumption of animal products, along

with *halal* (permissible) foodstuffs, require that IsDB-funded projects include educational programs that promote wholesome foods conducive to moral and physical wellbeing. *Halal* foods items not only abide with Islamic law but are also better for human consumption because of the way they are prepared and processed (Ismoyowati, 2015).

It is against this background that IsDB, since its inception in 1975, has invested in the livestock sectors of member countries, though its interventions were limited in scope. However, since 2012 a significant increase in such investments has occurred, with the total amount rising to nearly USD 350 million (about 80% of this total is going to projects approved since 2012). Investments in livestock, both from public and private sources, are expected to more than double in the coming decade and cut across the full spectrum of the sector in member countries.

## **Agro-pastoral Systems of Sub-Saharan Africa: Change is Taking Root**

### **West Africa – Country Investments are Fitting Well into Regional Programs**

The Sahel region is home to Africa's agro-pastoral livestock production systems. It is characterized primarily by the constant movement of herders and their livestock across communal and public rangelands. Moving cattle and small ruminants to the best grazing lands at the right time

is known as ‘transhumance’, an animal production practice characterized by regular seasonal movements between complementary ecological areas. A few individuals accompany the herds while the largest part of pastoral group remains sedentary. The herds leave an environment where pasture has become scarce and move towards areas that still appear to have abundant pasture. In this context, transhumance in West Africa may be considered a form of environmental adaptation, making good use of the ecological complementarity between the Sahelian and the Sudanian zones (Alidou, 2016)

The system leads to strong interactions between pastoralists and sedentary crop producers, resulting in a high potential for conflict with farmers. Such clashes often become serious in Africa’s dryland areas, both within and across country borders. Also, with constant movement across

borders, transboundary diseases control presents significant challenges on which governments spend considerable time and money to manage. It is important to note, however, that the system results in the transformation of natural resources that would not otherwise be considered economically important into valuable quantities of animal products that contribute to food and nutritional security in rural and peri-urban communities in the Sahel region of Africa.

### Country Programs Kickstart the Improvement of Agro-pastoral Systems

Country-specific IsDB investments target regions of economic importance. In Niger, the Liptako-Gourma Livestock Development Program was approved in 2003 for a total amount of USD 10.78 million. The project supported development of the country’s agro-



**Cattle on the move: Transhumance in West Africa (Alidou, 2016)**

pastoral areas, which also benefited pastoralists from neighboring countries. Similar projects were soon approved for Mali, and Burkina Faso. The regional Liptako-Gourma Integrated Development Authority, established in 1970, agreed to take responsibility for coordinating the country agro-pastoral projects while direct implementation was undertaken in each country by its ministry of livestock or animal resources.

IsDB's livestock investment portfolio expanded to include other countries in the Sahel. In Cameroon, for instance, the Bank approved a 5-year loan (USD 52 million) in 2012 for the Livestock and Fisheries Development Project (LIFIDEP) to support smallholder producers in the northwest of the country where agro-pastoralism is common. Extensive pasture lands in these areas remain unused due to the lack of water for livestock over most of the year. In

addition, livestock marketing is informal and involves numerous intermediaries using trading structures that are poorly controlled. IsDB thus invests in an integrated set of interventions, including water development, improving feed and veterinary services, and building or rehabilitating roads to improve access to structured markets.

LIFIDEP also provides islamic microfinancing to local communities. In its first three years, the project provided seed producers and pastoralists with training on pasture improvement practices. The project improved 46 hectares of degraded pastureland in 2016, which supported the fattening of 9,400 cattle without going on transhumance. This has also led to a remarkable reduction in the incidence of diseases, decreased mortality, and improved nutrition resulting in increased production and productivity.



## Cameroon Livestock Market Infrastructure Development Project

A project similar to the Liptako-Gourma Program was launched in Cameroon in 2016: the Livestock Market Infrastructure Development Project. A total of USD 42.42 million was made available to enhance livelihoods in the Adamawa, North, and Far North regions of the country by improving access to markets. This project involves: 1) building 16 market complexes; 2) constructing 16 veterinary clinics, 16 livestock inspection stations, and 15 ponds; 3) developing 790 hectares for forage production; 4) establishing 39 boreholes equipped with solar panels; 5) improving access to markets by constructing 48 km of roads; and 6) providing access to credit through a microfinance program. All these activities are complemented by a human capital development strategy.

## Regional Programs Connect the Dots

IsDB is also investing in regional programs to connect the dots, the country-specific programs. Two are highlighted here.

**The Sahel region:** The Sahel Sustainable Pastoral Development Program (SSPDP) was approved in February 2017 for a total of USD 105.16 million. The program supports three of the Bank's member countries (Mali, Senegal, and Burkina Faso) as they strive to build synergies among their individual investments in the agro-pastoral sector for greater impact. The program was developed within a collaborative framework between IsDB and the World Bank that was signed in 2015. The program is one of the first to be financed under the Lives and Livelihood Fund (LLF), a concessional financing mechanism developed in partnership with other public and private development agencies to support low- and middle-income member countries (see Chapter 11). SSPDP aims to benefit nearly 1.3 million people in the three countries. From this investment, it is expected that per capita milk consumption will increase from 61.5 kg to 67.65 kg/year in Mali, 17.67 kg to 18.34 kg/year in Burkina Faso (nearly 4%), and 26.35 kg to 28.99 kg/year in Senegal (10%) by 2030.

The design of this project was shaped by lessons learned from a livestock project in Mali, documented in an independent post-project evaluation done by the IsDB Group Operation Evaluation Department. The evaluation reported positive returns to interventions aimed at: 1) improving natural resource management that enhances livestock access to feed and water; 2) training animal breeders; 3) strengthening

livestock productivity; 4) increasing access to veterinary services; and 5) and improving market access. In the milk value chain, dairy processing units that integrate suppliers and collectors, as well as provide support services to these actors, are of critical importance.

**East Africa drylands:** The Bank made significant investments in 2015 in Uganda, Somalia and Djibouti, aimed at improving the livelihoods of pastoral communities in these member countries. An integrated set of solutions were rolled out that included the development of water resources, pasture lands, health and veterinary services, and community empowerment, among others. Technical development partners were engaged to assist the countries with rolling out project activities and build institutional capacity. Each country engaged a separate technical partner, unlike other regional programs that have engage just one to serve all participating countries. This was dictated by the specific needs and circumstances of the countries. However, IsDB plays a critical role in connecting the country programs and facilitating forums that allow them to periodically exchange information about what is, or is not, working well. The Uganda program, for instance, has made good progress with several of its integrated interventions (see Box), and hosted the other two countries in 2016 to share that information. This helped to overcome some implementation inertia and provided insights and encouragement as to what can be achieved under relatively difficult conditions. Thus, the Bank's regional investment is providing a platform for going to scale.



## The Uganda Dryland Development Project: Achievements in Livestock and Livelihoods Intervention (2015-2017)

- 3,052 producers have enrolled in cooperatives and the number continues to grow. It is through these cooperatives that all livestock interventions are channeled;
- 4 savings and credit cooperatives (SACCOs) have been formed in 4 sub-counties and have a total of 1,021 members. Livestock productivity improved – the project established 10 community managed artificial insemination centers;
- 640 cattle (improved breeds) and 3,500 sheep and goats have been provided for restocking producers. To date, 121 head of improved cattle (Sahiwal, Borans, and Friesian crosses) have been procured, of which 86 were distributed to selected individuals in the 4 sub-counties, and 35 cows were put at the Improved Breeds Multiplication Center for demonstration and training purposes. Additionally, 256 goats and 35 bucks (Galla breed) were procured and distributed to producers in need of restocking, Training was provided to 72 producers in order to ensure productive and profitable management of the goats they received from the project;
- 4 Artificial Insemination (AI) Centers were established and equipped to benefit farmers in the sub-counties. A total of 40 cows have been inseminated since the project started and 96 farmers have been trained in AI techniques.
- 46 Community Livestock Workers (CLWs) have so far been recruited and equipped to provide extension services at the parish level. Training and field demonstrations were conducted for 78 participants, including 21 CLWs, 11 district extension workers, and other community members. The focus of these efforts was hay making, livestock disease control (animal examination, veterinary drug use, dosages and administration), pasture improvement, and routine farm practices;
- 14 district-level extension staff have received training on appropriate livestock production practices and animal breeding to ensure sustainability of extension services beyond the end of the project. More still, the project supports 43 students through a vocational training scholarship program in a bid to fill gaps in extension staffing at the community level. Three district veterinary extension staff working in 3 of the 4 project sub-counties have been seconded to the project to support the delivery of mobile veterinary clinic services.

## Capitalizing on Livestock Market Demand During the Hajj Festivals

There is tremendous potential for livestock producers to benefit from opportunities created by the religious festivals associated with Hajj and the Holy Month of Ramadhan. IsDB has set up a program to organize the supply of sacrificial animals (called *Idahi*) required by the pilgrims to the holy city of Mecca at the end of their Hajj functions. The *Idahi* program is providing a unique mechanism for ensuring a ready supply of livestock that meets the demand for quality livestock, which is increasing rapidly as the annual numbers of Muslims performing Hajj rises. In 2017, the number of animals sacrificed under the project was 927,480, valued at nearly USD 112 million. The number of *Idahi* animals is estimated to have averaged 853,500 head over the last 9 years. For sustainable availability of the needed live animals that meet prescribed requirements at affordable cost, collaborative efforts are being undertaken by the *Idahi* project team and the IsDB Group. These efforts will lead to plans that ensure not only an adequate supply of animals but also that meat is properly processed for conservation and distribution to Muslim communities around the world.

## Growing the Dairy Industry: It starts with Smallholder Peri-urban Systems

The 'Ouagadougou Peri-urban Dairy Sector Development Project' of Burkina Faso is a model public/private partnership supporting smallholder dairy production systems. The USD 23 million, 5-year

project was approved in July 2011 and focuses on developing the milk value chain in the peri-urban area of Ouagadougou, the capital city of the country. The goal is to substantially decrease imports of milk and milk products that costs the country nearly USD 30 million per year.

The project has soundly implemented essential interventions for increasing the production potential of local milk cow breeds. This includes artificial insemination (AI) using semen from exotic breeds, improving feed and fodder systems, enhancing animal health through better veterinary services, and developing good marketing systems for milk products; the project has also increased access to credit for production inputs. From March 2017 to February 2018, more than 600 producers benefited from the insemination of 2,858 cows (the estimated conception rate was 55.7%). The AI program includes a robust training component that provides trainees with an understanding of basic anatomy, reproductive physiology, and the breeding management needed to achieve the best results.

The entry point is the farmers' cooperatives that benefit from the program and also provide services to the rest of the community. These local breeders will also be provided with training on fodder production, starting small (demonstrating production techniques on 200 hectares on 50 selected farms). Public funding provides the AI services while the farmers' cooperatives run the production systems, including local milk collection, cooling and packing facilities. The AI service seeks to



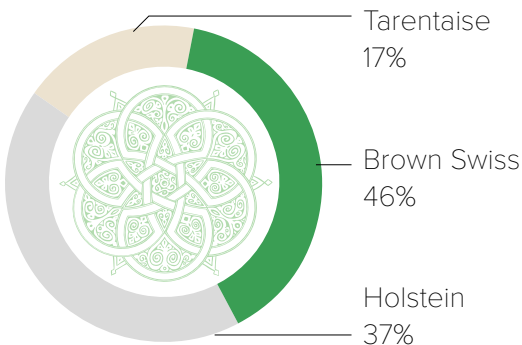
**Artificial insemination program in Burkina Faso supported by IsDB financed Peri-Urban Dairy Sector Development Project**

fertilize local breeding stock using imported semen from high milk-yielding breeds from Europe.

The starting breeding base is modest but will be rapidly scaled up to reach the 3,000 cows per year target. The breeding stock will be enhanced with the introduction of 500 high-performing cows of exotic breeds.

### Small-scale Poultry and Aquaculture Production: Finally at Home

The Bank’s investment in poultry and aquaculture are designed to quickly increase incomes and improve household nutrition. Poultry and fish production also provide a good ‘fit’ with women and the youth in rural areas, and thus help to engender more inclusive development programs. The high returns of fish and poultry value chains can rapidly generate benefits for smallholders, as demonstrated by Cameroon’s LIFIDEP initiative (see Box) and National Program for Food Security in Nigeria.



**Figure 4.1: Percentage contribution of exotic breeds to the artificial insemination program in Burkina Faso**



**Small-scale poultry farm supported by IsDB**





## The LIFIDEP of Cameroon: Making a Positive Difference

Activities under Cameroon's LIFIDEP initiative include building the capacity and infrastructure of beneficiaries and stakeholders for poultry and aquaculture production. The project has also supplied materials for the construction and rehabilitation of fishponds and subsidized the acquisition of day old chicks. Within eight months of launching the distribution of subsidized day-old chicks in the Northwest Region of Cameroon, a total of 241,500 chicks were supplied to poultry farmers in 32 cooperatives; they were delivered in eight batches at a unit cost of FCFA 345 (USD 0.65) compared to an average prevailing cost of FCFA 520 (USD 0.98) per bird. Thus, the project has subsidized an amount of FCFA 42,262,500 (USD 80,000) and supported the production of 404 tons chicken meat with a financial turnover of FCFA 606,542,344 (USD 1.14 million). In addition to the income from the sale of birds, farmers also gain additional income from selling bird droppings and from using them as organic manure on their own farms.

Fish farmers have been trained on fishpond construction techniques, the formulation of appropriate fish feed, and how to preserve fish using improved chokor ovens and ice. The project has supplied equipment needed for constructing or rehabilitating fishponds. Some of the impacts arising from project activities so far include the improved management of fishponds, an increase in the quantity and quality of fish produced (thanks to the use of better fish feed), and an increase in the number of fishponds. A total of 286 new ponds have been constructed, with a total surface area of 11,831 m<sup>2</sup>, and 353 abandoned ponds have been rehabilitated, with a total surface area of 20,880 m<sup>2</sup>. Post-harvest losses have been reduced through processing with modern ovens and the use of ice.

Preliminary results from the Cameroon LIFIDEP initiative, and from a similar one now underway in Nigeria, underscore the opportunities to significantly contribute to smallholder food security and incomes in member countries through investments in enhanced poultry and fish production. These value chains will be the subject of considerable attention in the coming years.



**IsDB-supported small-scale aquaculture (fish farming) in Cameroon**

Increased supplies of fish from aquaculture can improve local food security and can also lead to reductions in the cost of living as fish prices go down. Lower fish prices have the effect of increasing people's real incomes, enabling them to spend on other locally produced goods and services (Kassam, 2014). These consumption linkages arise when additional disposable income earned through aquaculture by fish-farming households, as well as the laborers working on fish farms, is spent on non-tradable goods and services, which stimulates further demand for local products and services.

From a global perspective, most livestock industries, especially the production of poultry eggs and meat, are likely to expand significantly, and most of this expansion appears destined to occur

in developing countries (UNSC, 2014; OECD-FAO, 2011). These value chains will be the subject of considerable attention in the coming decades.

### **Lessons Learned**

- Making investments that are commensurate with needs is essential to growing the livestock sector. This requires strategies that bring additional funding to bear through partnerships with other stakeholders, both public and private. And this is, indeed, precisely what the Lives and Livelihoods Fund aims to do.
- Forging strategic partnerships that produce synergies from each other's investments is essential for success. This is clear from the success of development partners in the same

geographic locations that build on IsDB's completed or ongoing agro-pastoral livestock projects. With respect to ongoing projects, partners should plan their investments to avoid duplication. Open knowledge-sharing is very important if potential synergies are to be realized.

- Bringing on board innovations that enhance productivity and reduce risks is vital to improving the performance of the sector. This was demonstrated by the dairy project in Burkina Faso that introduced AI services through farmers' cooperatives to rapidly improve local breeds of cows.
- Sustaining project gains beyond the life of the project requires strong ownership by beneficiaries and engagement of the private sector. The Burkina Faso dairy project is a good example because it involves stakeholders from across the value chain, making the scaling up of interventions more probable. The inclusion of Islamic microfinance in all projects will help ensure potential private entrepreneurs have the ability to acquire essential production inputs. This provides the opportunity for producers to invest, and in doing so be committed to the long-term management of any improved infrastructure. Such a kick-start microfinance program, along with public sector technical support, is especially critical in remote rural regions.

- With limited support, significant gains can be made fairly quickly in small-scale poultry, fish, and dairy production, both in rural and peri-urban communities. The Bank's investments in the livestock sector should, going forward, focus on these value chains.

## Conclusion

While IsDB interventions in the livestock sector remained limited for many years, the increase in recent project approvals demonstrates a positive shift that is poised to significantly contribute to transforming agriculture. Country-specific and regional programs dealing with agro-pastoral systems and smallholder production demonstrate the effectiveness of using a value chain approach to enhance livelihoods in rural and urban communities, where improving food security and incomes are top priorities. To strengthen project sustainability, efforts will concentrate (going forward) on initiatives that rest on public/private partnerships, access to affordable credit, and the development of human capital. This will insure that established infrastructure is properly managed and productive for a long time after projects are completed. Looking forward to increased investment in the sector, poultry and aquaculture production will require more attention as part of strategies to grow the productivity of smallholder agriculture.

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## Chapter 6

# Taming the Waters: Innovative Solutions to Reduce Water Scarcity in Agriculture

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### Key Messages

- Investment in small- and medium-scale water harvesting structures can be an important entry point towards meeting the diverse social, economic and environmental needs of rural communities.
- Adopting advanced water management innovations can improve water use efficiency, increase agricultural productivity (including the production of high-value horticultural crops) and incomes.
- Strengthening the capacity of national institution along with treating water as an economic good (charging for true value of water) can enhance the sound management and sustainability of irrigation infrastructures.

### Introduction

The IsDB has played a key role in supporting its member countries to address the needs of water management and water security. The Bank's member countries have different levels of water scarcity issues. The average annual total renewable water resources in densely populated arid areas of Africa, the Middle East, and Central and West Asia is 913 m<sup>3</sup> per capita, an amount that falls below the threshold of 1,000 m<sup>3</sup>. This puts these countries among those facing chronic water shortages (Organization of Islamic Cooperation, 2015).

According to the United Nations World Water Assessment Programme (2017), in global terms the agriculture sector is the largest consumer of freshwater, representing 70% of all water withdrawn, followed by industry 19%; the smallest consumer, at 11%, are municipal areas (Figure 6.1). In IsDB member countries, agricultural water use is even higher (84%), with municipal and industrial use amounting to 9% and 7%, respectively, of all water withdrawals. At the regional level, the highest agricultural consumption of water occurs in the countries of South Asia, where it accounts for 93% of total withdrawals, followed by Latin America and the Middle East and North Africa (MENA) Regions, where agriculture accounts for 87% and 86% of all water withdrawals, respectively (Organization of Islamic Cooperation, 2015). On the other hand, the

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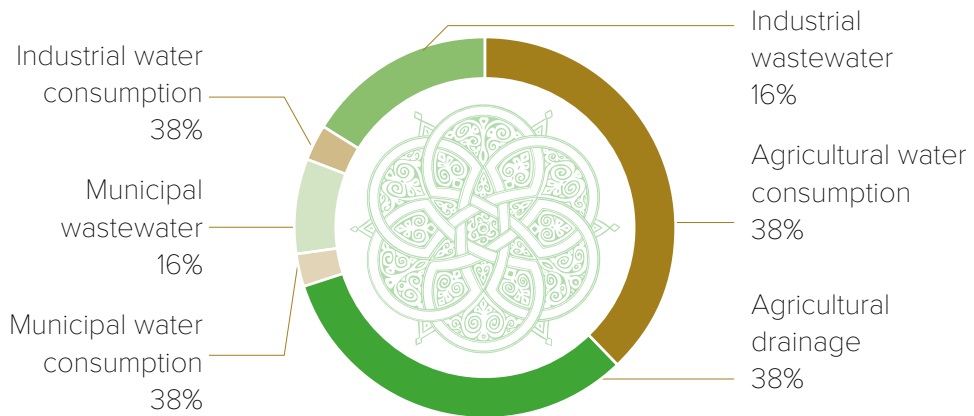
3 Agriculture Global Practice, IsDB

4 Social Infrastructure Global Practice, IsDB

5 Regional Hub, Almaty, Kazakhstan, IsDB

6 Social Infrastructure Global Practice, IsDB

7 Regional Hub, Kampala, Uganda, IsDB



**Figure 6.1: Fate of freshwater withdrawals: global consumption and wastewater production by major water use sector (WWAP, 2017).**

lowest agricultural water use by member countries occurs in East Asia, followed by sub-Saharan Africa, where it amounts to 67% of all water withdrawals (Organization of Islamic Cooperation, 2015).

### IsDB's Interventions to Improve Access to Water

Since its inception in 1975, the Bank has provided USD 12.597 billion in financing for some 320 water sector projects. This portfolio is made up of large- and small-scale interventions in irrigation and drainage, water storage, rural water supply, and sanitation. Water management projects account for 24% of the Bank's total approvals, making it the third largest portfolio of interventions; IsDB is currently investing USD 3.5 billion in various sub-Saharan Africa, MENA, and Asian countries.

The Bank's investments in water address flood protection, soil salinity management, climate change, and water economics,

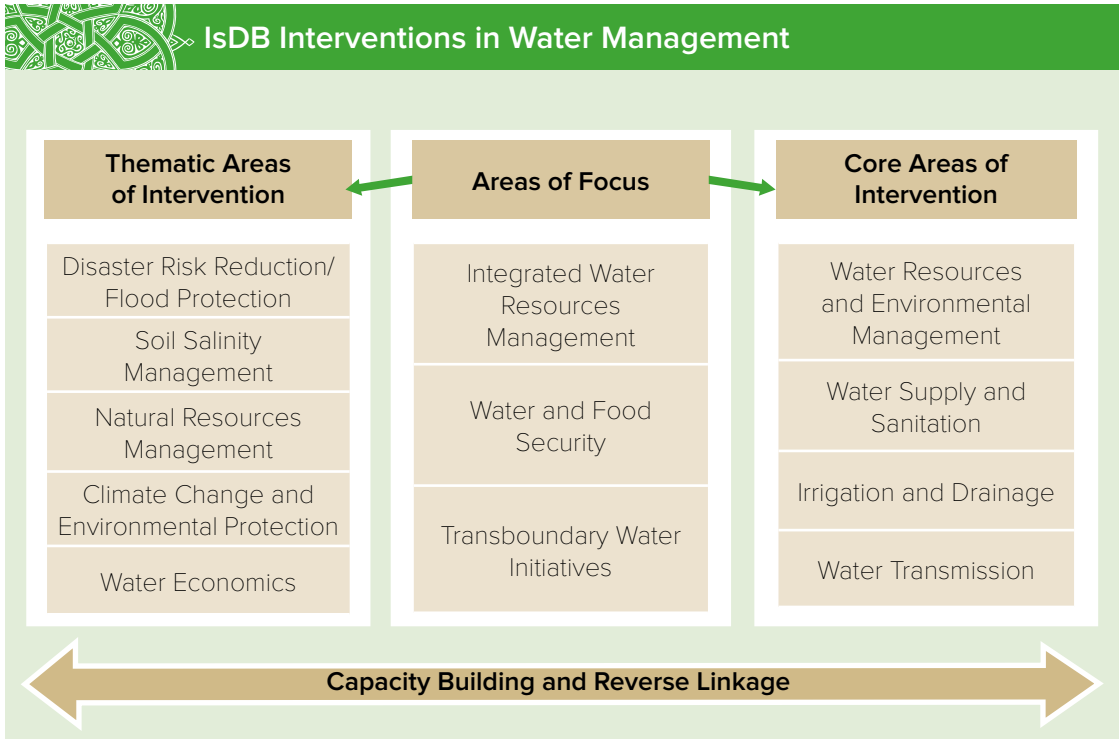
with a special focus on strengthening the use Integrated Water Resource Management (IWRM) practices. The core areas of interventions include irrigation and drainage, water resource management, water supply and sanitation, water harvesting and bulk water transfers (the transmission of treated water from one location/region to another through pipes and aqueducts).

### Harnessing Advanced Technologies to Improve Water Efficiency

Advances in technology are transforming greenhouse production systems, as demonstrated in the Bahrain project. IsDB supported farmers in Bahrain – through the 'Hawrat Ali Agriculture Growth Pole Incubator' (HAGP) project – to have access to hydroponic technologies, a soilless system to increase the production and productivity of high-value crops, such as red cherry tomatoes, lettuce, cabbage,



## IsDB Interventions in Water Management



## Scalable Hydroponic Irrigation Systems

A hydroponic irrigation system is one in which crop roots receive a balanced mix of nutrients dissolved in water with all the chemical elements needed for plant growth. Plants can grow directly in the mineral solution, or in an inert medium or substrate; no soil is used to grow the plants.

The vertical farm configuration is one that works well. It is a closed system that can support the simultaneous cultivation of three different types of vegetables, with environmental controls for each crop. Cultivation racks are placed in a stacked structure, which allows growing trays to be put on both sides of the nutrient solution tubing and power lines.

The technology deployed under the HAGP project has been well-tested and is readily available. It can be replicated in any economic context and environment, if the appropriate government agencies, as well as financial and technical partners are brought together. However, the level of sophistication, the institutional model for management, and the technical capacity requirements of the model need to be appropriately addressed and adapted for each context.

cucumbers, blueberries, strawberries, and cut flowers. Production costs are low compared to traditional greenhouse operations, productivity is significantly higher, and the quality of produce is better.

Notwithstanding their initial high investment costs, hydroponics is providing opportunities for countries and communities to meet some of their food and nutritional security needs under difficult conditions – where soil nutrient quality is low, salinity and water scarcity are significant, land availability is limited, all of which present major constraints to crop production. Bahrain is one country where the use of hydroponics is rapidly growing; others in the Arabian Peninsula include Kuwait, Oman, Qatar, and the United Arab Emirates (UAE). This is in part due to farmer-to-farmer extension and subsidies by governments to farmers. For example, in the UAE 50% of the costs

incurred by a grower in establishing such systems are covered by the government (International Centre for Agricultural Research in Dryland Areas, 2017).

The Bahrain HAGP project served as an incubation center for testing and disseminating new greenhouse technologies and farming practices in the country. It employs fully automated controls to manage eight greenhouses that feature vertical production systems, LED lightening, reverse osmosis systems, advanced cooling pads, and hydroponics. The center is fully equipped with post-harvest sorting, grading and storage facilities, as well as training classrooms and laboratory facilities. It has proven to be a viable agribusiness, which can be used for agricultural development and the creation of employment opportunities for young agripreneurs (Islamic Development Bank, 2016).



**Tomato- and lettuce-growing greenhouse equipped with hydroponic systems in Baharain supported by IsDB**



### Upper Atbara Dam Project in Sudan, supported by IsDB

#### Dams and Water Harvesting Structures for Agriculture

The project in Eastern Sudan is designed to increase the irrigated land area and generate relatively cheap hydropower. These objectives were met by constructing a multipurpose dam complex comprising two dams on the Upper Atbara and Settit rivers, with a 13 km long dyke system joining the two main dams to form a common water storage reservoir of 3.6 billion cubic meters of water, which will be available for irrigating an additional 180,000 hectares of land.

Key expected results include reducing the incidence of extreme poverty in the project area, down from 36% in 2010 to 26% by 2020, increasing average annual per capita incomes of 160,000 project area farmers by USD 192, and the production of cotton, fodder, groundnut, sorghum, sunflower sugar cane, vegetables, maize, and wheat from a total of 383,146MT in 2010 to 574,720 MT in 2020. IsDB provided USD 150 million for the mega water development project on

the Upper Atbara and mobilized other resources to fund the project of USD 1.3 billion through co-financiers of Arab Coordination Group (i.e. Arab Economic and Social Development Bank, Kuwait Development Bank, Saudi Development Bank, Abu Dhabi Fund for Development, OPEC Fund for International Development) as well as Government of Sudan.

#### Building Resilience in the Livestock Sector Through Development of Rural Water Supplies

IsDB is supporting the Government of Sudan to scale up rainwater harvesting through projects for agro-pastoral communities in the Al-Gadarif, White Nile, South Kordufan, Sinnar, and Darfur states. Annual rainfall in these states is typically under 800 mm, is unimodal (one season only), and is becoming highly variable, due to climate change. The main purpose of this project is to increase the supply of water for livestock, but also for irrigation and domestic use.

Working with local institutions and communities, the project used relatively simple rainwater-harvesting techniques to making water available during the dry season. The main water-harvesting and storage facilities used included ‘*haffirs*’ (a local word referring to shallow ground reservoirs, coupled with small water filtering plants), small earthen dams, ground water wells, natural depressions, and rooftop harvesting that fills small tanks next to family dwellings.

The impact over a span of 3-5 years has been enormous, benefiting more than 300,000 people and more than 5.7 million head of livestock in the region. However, sustaining these benefits requires efficient management of the water infrastructure and in ways that accommodates the needs of different stakeholders. Hence, the project established a water-users association to operate and maintain the water-harvesting structures. The association engendered community participation and

established shared norms to manage the resources collectively. It helped manage conflicts among the different users related to water scarcity, which intensify during the dry season. Additionally, the association introduced water service charges to users. This enabled the association to more effectively carry out its supervisory functions. The project built the capacity of the association and its overall governance, which is critical to the success of such organizations (Harvey & Reed, 2006)

Having more water nearby has provided several benefits to the communities in the Al-Gadarif, White Nile, South Kordufan, Sinnar, and Darfur states. Children living in the villages are now able to attend school, rather than miss classes to help their parents look for and carry water. The presence of dams lessens the burden on women, who no longer have to walk long distances to retrieve water from point sources (usually boreholes) as they did prior to project implementation.



*In dry season April 2011*



*In rainy season October 2011*

**IsDB financed project – Alaa’wag Dam in White Nile State, Abu-Habil Waadi in Sudan**



**Haffirs (using harvested rainwater) fill animal watering troughs in Sudan**

There are indirect advantages as well – the increased availability of water encourages livestock to settle locally for around eight months of the year, so they are moved less frequently and milk and meat prices in the region remain stable. Furthermore, because there is increased access to water, more families settle in those areas, and engage in income-generating activities, such as working in and operating restaurants, shops, and wheat mills. The small markets in villages attract nomads and farmers, which stimulates economic activity in the area.

### **Improving Smallholder Farmer Access to Irrigation Facilities: The Mozambique Chókwè Irrigation Scheme**

The development objective of the Chókwè Irrigation Scheme Rehabilitation Project was to improve agriculture productivity and production, and consequently increase the net incomes of 17,000 farm households.

Among the challenges being addressed by this project are poor management of irrigation and drainage systems, limited land preparation, and high operational and maintenance costs. The main irrigation canals are running well, but secondary and tertiary canals need to be rehabilitated. The tertiary canals, especially, have seriously deteriorated since they were built in the late 1950s. The project improved secondary and tertiary canal network with flume canals that reach the farm level. Improved furrow irrigation was introduced on farms after levelling the land. Project achievements include:

- Increasing the supply of water to 7,000 hectares, up from 1,200 at the beginning;
- Improving the socioeconomic status of more than 5,000 smallholder farmers by providing them with access to irrigated lands;



**Chókwè irrigation infrastructure is improving the socioeconomic status of more than 5,000 smallholder farmers in Mozambique**

- Increasing agricultural productivity and production (with the main crop being rice);
- Increasing average yields from 1 MT/ha to 5 MT/ha; and
- Rehabilitating 2,120 km of water delivery canals to the flume system, thereby increasing water delivery efficiency from 62% to 96%.

**The Integrated Rural Development Project (IRDP) in Azerbaijan**

The overall goal of this project is to build irrigation systems in Agdash, Yevlakh, Sheki and Oghuz districts, thereby reducing rural poverty through increased food security and income-generating opportunities. The objectives of the investment are to efficiently deliver water resources all the way to the farm

level, and to support farmers in learning how to better utilize water resources to make their operations more productive and profitable. The project's activities are improving the financial sustainability of smallholder farms, enhancing crop production using furrow and rainfed irrigation, and improving livestock rearing through more effective advisory services. The total irrigated area benefiting from the project is 60,000 hectares, and it targets a 15% increase in the volume and diversity of agricultural products, as well as a 40% increase in farmers' average income.

**Water Technologies Matter**

Introducing new water technologies through IsDB projects will help member countries to use their scarce water resources more efficiently, reduce water losses, and lead to higher yields

and improved smallholder livelihoods. The Bank has been working with sister institutions, such as the International Center for Biosaline Agriculture (ICBA) to mainstream advanced irrigation technologies and water measurement tools into IsDB portfolios. These technologies are vital to optimizing water use efficiency and sustaining the water structure and irrigation schemes.

Due to the increasing impacts of climate change, water management institutions in member countries are striving to address the vulnerability of irrigation and drainage systems to extreme weather events and improve the long-term resilience of the Bank's investments. Failure to successfully do so could adversely affect the potential benefits of IsDB's investments and alter its development trajectories. A few of the strategies derived from the climate change policy paper (Islamic Development Bank, 2017) and the Synthesis Report of the Evaluations of IsDB Interventions in Agriculture and Rural

Development Sector for the Period 1976-2014 (Islamic Development Bank, 2016) are highlighted below:

- Focus on the design stage of a project using a checklist when making risk assessments, which should be based on expert opinion and scientific knowledge in order to strengthen and increase the quality of the project from the beginning;
- Have a flexible strategy for financing adaptation and mitigation projects, as this will allow the Bank to expand its financial support to a greater number of initiatives;
- Engage with the beneficiary communities and other stakeholders from the inception of projects to strengthen their capacity to manage water resources in ways that enhance equity and sustainability in water use;
- Ensure that a multi-sectoral approach is taken in which, for example, all (or most) agriculture and rural



**The Integrated Rural Development Project in Azerbaijan is improving water management on 60,000 hectares of farmland**

development projects aimed at a specific country or region are included under one single intervention to ensure an integrated approach; and

- Collaborate on financing projects through co-locating and co-financing with development partners to increase stakeholder participation, raise visibility, further build synergies, and exchange knowledge and best practice on climate-related issues.

## Lessons Learned

- Building the capacity of local institutions, including community-level water users associations, is essential to ensuring their participation in managing water resources and the infrastructure put in place to increase access to it in an efficient, equitable and sustainable way.
- Investing in the use of advanced water technologies (ICT systems, and sprinkler, drip- and micro-irrigation systems) will promote the production of high-value crops and in ways that increase the frequency of production, hence contributing to increased incomes and improved livelihoods for smallholder farmers and agripreneurs.
- Climate change is affecting water availability for agricultural production, but the use of integrated water resource management practices can help mitigate adverse effects. However, there is need to build institutional capacity in IWRM techniques.

In addition to the key lessons learned at the project level, there are some program-level lessons that should be considered in policy and planning discussions. In general terms, it is very important to:

- Establish a long-term program for supporting water sector reforms and Improved operations and maintenance;
- Enhance service delivery and improve tariff and billing systems; and
- Encourage regional cooperation in transboundary river basins.

## Conclusion

IsDB aims to increase action for sustainable development of operations through efficient management, improved quality of projects at entry, and enhanced impact and effectiveness, as it is committed to helping member countries end poverty, achieve zero hunger, and improve water management to reduce water scarcity (SDGs 1, 2 and 6). This will require greater attention to how food is produced, and how water is used to produce it (since about 70% of all fresh water goes to agriculture). In addition, making necessary changes during implementation has been shown to result in higher quality irrigation schemes, so projects must be designed with built in adaptive flexibility.

Early on, the Bank recognized the importance of financing the sustainability elements of water assets, including the



operation and maintenance of equipment, capacity building, and effective tariff systems. It considers them to be primary project components and has mobilized partners to support them. This approach has been and continues to be critical to project success, and for the sustainability of agricultural productivity.

Finally, there is a need for strong partnerships with implementing agencies, relationships that are critical for project success, achieving policy reforms, and building institutional capacity. Implementing agencies will also need detailed knowledge of the Bank's policies to facilitate the long-term development of mutually beneficial partnerships.

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## Chapter 7

# Opening Market Opportunities to Smallholder Farmers

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### Key Messages

- Investing in market institutions (including infrastructure) can substantially increase the incomes of smallholder farmers. The IsDB Group is committed to supporting its member countries as they expand rural Infrastructure development, given that such expansion enables businesses rural areas to thrive.
- Countries that have put in place pro-smallholder policies have done relatively better with IsDB project financing. The Bank is supporting the efforts of member countries to strengthen and streamline their agriculture and rural development policies. This includes policies that facilitate contract farming, which can greatly improve market access for smallholder farmers and stimulate market growth.
- Smallholder farmers stand to make substantial returns from integration into formal, structured markets, which are critical for poverty alleviation and rural growth,
- Structured markets lead to a broader ‘commodity ecosystem’, formal commercial trade that widens local tax bases, and serve as primary vehicles for strengthening national food security.

### Introduction

**A**ccess to markets is essential to reduce poverty and increase food security. Developing effective farmer-market linkages remains one of the best opportunities to grow agriculture, on which an estimated 2 billion people worldwide

living in smallholder households depend for their livelihoods. Data show that income growth generated by agriculture is almost four times more effective in raising living standards than growth in other sectors (Commission on Growth, 2008). Rapid urbanization, population growth, and improving infrastructure in recent decades have created massive opportunities for farmers around the world. Smallholder farmers in developing countries, however, face major obstacles to exporting their produce due to persistent protectionism

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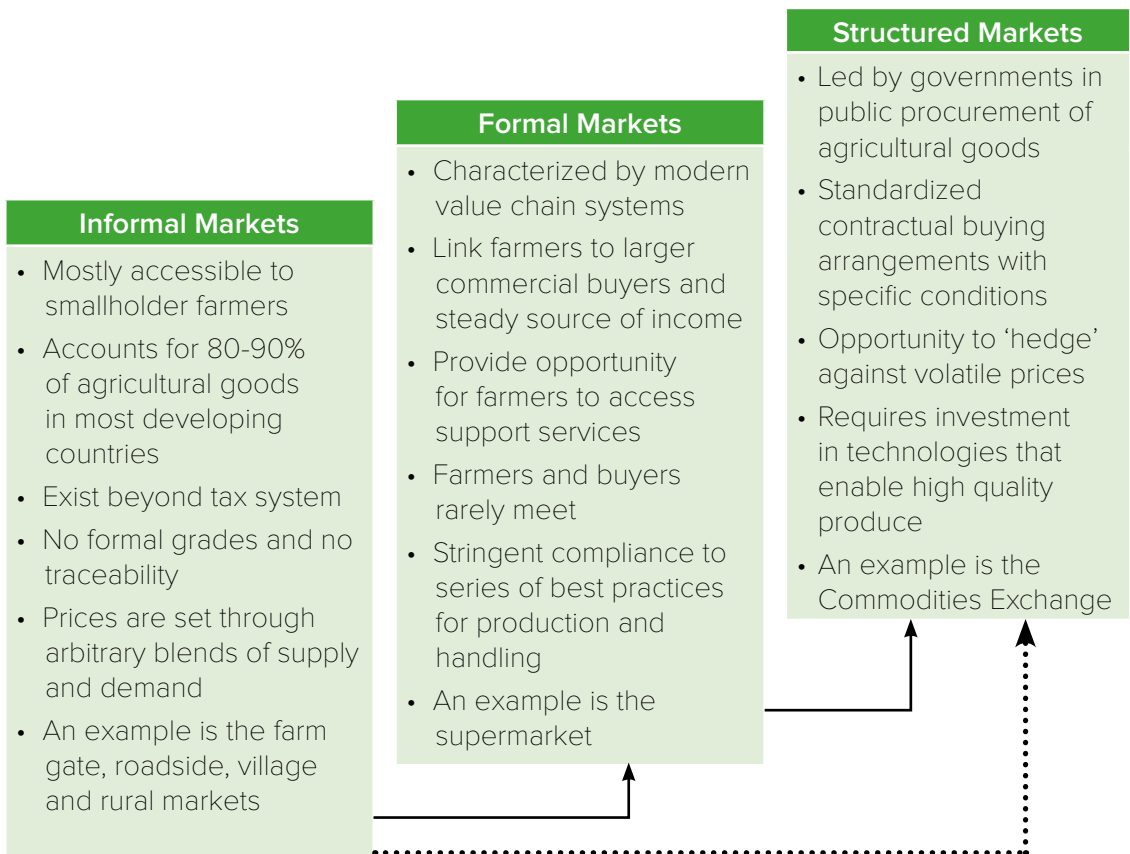
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in developed countries and fierce competition in an increasingly globalized market for agricultural products, especially those supplied to supermarkets through well-established value chains (United Nations Conference on Trade and Development, 2009). Many member countries in sub-Saharan Africa (SSA) still depend on a narrow range of primary commodities (for example, cotton, coffee, and cocoa) to earn foreign currency. Most member countries, particularly in the Middle East and Africa, rely heavily

on commercial food imports to meet the increasing demands of their growing affluent populations.

Since its inception, IsDB has supported its member countries with projects that develop and strengthen smallholder farmer's access to local and regional markets, as well as to international commodity markets. Four case studies are presented here that highlight some of those experiences and provide some important lessons that could inform policy development.



**Figure 7.1: Major types of market structures (Adapted from: Ferris et al., 2014)**

## Globally Integrated Production Market Systems: Placebo or Panacea?

In general, there are three types of markets: informal, formal and structured (Figure 7.1). In developing countries, including IsDB member countries, informal markets are the main outlets used by smallholder farmers. The case studies provided here typify these market structures, although not in a mutually exclusive manner. Studies show that in developing countries, 80-90% of agricultural goods are traded in informal markets (Ferris et al., 2014). These markets provide significant income opportunities for value chain stakeholders including smallholders, wholesalers, and retailers. Smallholder farmers often find it difficult to benefit from opportunities provided by formal and structured markets (commodity exchanges) due to lack of infrastructure, regulatory frameworks, access to technology, and know-how.

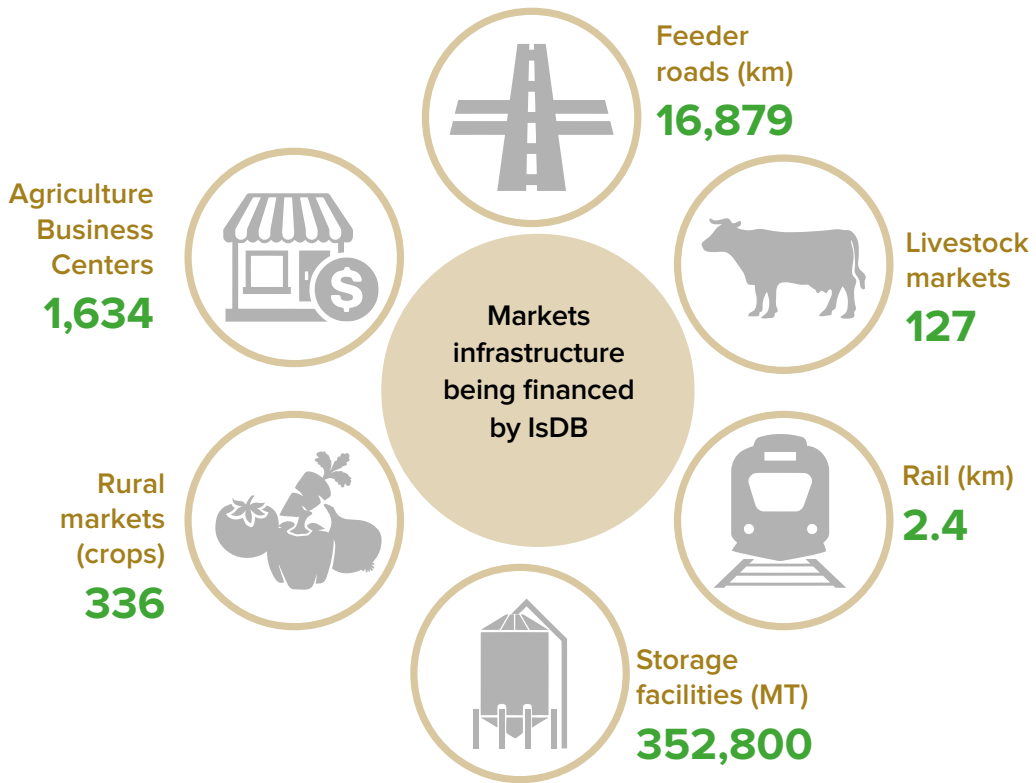
In recent years, food systems have become globally integrated, more knowledge-based, and capital-intensive. Large-scale farmers are better positioned to capitalize on market opportunities, cheaper capital and new technologies. The large-scale farmers are also better placed to manage the risks associated with market volatility, adoption of new technologies, and the diffusion of knowledge, and as a result have higher productivity and technical efficiency. IsDB support to member countries is designed to address some of these challenges – that is, to transform smallholder subsistence farmers

into commercially profitable enterprises. Projects and programs financed by the IsDB Group are aimed at increasing smallholder productivity and enabling them to benefit from dynamic national, regional and global markets.

## Linking Smallholders to Structured Markets: Commercializing Sierra Leone Smallholder Farmers

IsDB is supporting efforts by the Government of Sierra Leone to facilitate transformation of tens of thousands of subsistence smallholder farmers to commercially profitable agricultural producers under the 'Linking Farmers to Markets Project'. The project aims to increase smallholders' income and reduce household food insecurity by improving farmers' production and marketing capacity. The project, which started in July 2014 and is scheduled to be completed by the end of 2018, supports value chains of staple crops (value addition and diversification), construction of market facilities, development of irrigation infrastructure to improve crop yields, and the construction of rural feeder roads and transportation facilities for agricultural produce.

To date, the project has built 25 agriculture business centers (ABCs), mainly for rice and cassava farmers. Each ABC is equipped with agricultural machinery, such as power tillers, rice haulers, rice threshers, rice cutters and cassava graters. The equipment, seeds and fertilizers are provided on a cost-sharing basis between the project and participating farmer



\* IsDB active portfolio as of February 2018 (IsDB Database)

organizations. These ABCs are currently in the process of being registered as limited liability companies with adequate capacity, infrastructure and equipment to deliver services to their clients. The sustainability of each ABC as a viable

business enterprise will mainly depend on the capacity of the farmer organizations that operate them, but will also require that proper business regulatory frameworks are enforced by local authorities.



**An Agri Business Center (ABC) (left) and a farmers' group processing rice at an ABC (right), Sierra Leone – IsDB-supported Linking Farmers to Markets Project**



**Bags of fertilizer being properly stored at an ABC**

To improve smallholder efficiency and productivity, the project provided 'starter input packages' of 230 MT of rice seed, 8 MT of vegetable seeds and 1,100 MT of fertilizers to 260 different farmers' organizations. To date, 75% of the target farm fields are planted with improved varieties and farmers have increased fertilizer application by 50%. The project trained and deployed more than 100 extension workers and 200 district agricultural officers on good agriculture practices (GAP).

The project is also financing the construction and rehabilitation of about 600 km of feeder roads in rural areas to reach hundreds of smallholder farms, giving them easier access to input and output markets. Those farmers, through their apex farmers' organizations, were provided with ten 10-ton trucks to enable them to transport their (aggregated) produce to local and national markets. The project reduced the distance farmers have to travel to get to input and output markets by more than 50%. While there is no data to report, interviews with these farmers indicate that post-harvest losses have been substantially reduced.



**Feeder road under construction to help connect farmers to input and output markets**

Recognizing the importance of effective water management to improve crop yields and the profitability of smallholder farmers, the project supported small-scale irrigation development schemes. A total of 500 hectares of inland valley swamps are being developed or rehabilitated, enabling thousands of smallholder farmers meet their production targets and fulfill contractual arrangements with off-takers through the ABCs. When completed, the project is expected to increase farmers' incomes by 20% and improve food security in the communities participating in the project by about 25%.

### **There is Money in Groundnuts: Enhancing Value-Addition in the Gambia Groundnut Sector**

For about 500,000 smallholder groundnut farmers, Gambia Groundnut Corporation (GGC) has been the only formal market outlet at their disposal. These farmers cultivate less than 1 hectare of land and aggregate their production through Cooperative Produce Marketing Societies (CPMSs). They then collectively sell their produce to GGC, a government-owned agency that buys, processes and exports

the groundnuts and its derivatives. The GGC buys nearly 80% of the total commercial crop through the cooperatives at a mutually agreed predetermined price negotiated by the stakeholders.

Selling to GGC brings several benefits to smallholders. For one thing, it provides them with a guaranteed market. The Corporation extends credit through the CPMSs for buying groundnuts from farmers, thus providing immediate cash in hand to the sellers. Its network of transport, grading and storage facilities extends across the country, thus providing ease of access. Farmers benefit from minimum support price, thus safeguarding them against abrupt variations in international prices. For these reasons, the GGC has been seen as a lifeline for the survival of the sector and the millions of rural residents that rely on it for nutritious food, as a main source of cash, and for fodder for their livestock.

The IsDB Group has intervened in the sector at a time when the GGC itself was struggling for its survival. Gambian groundnut producers were unable to comply with the increasingly strict product quality, health safety, and sanitary and phytosanitary standards of the international markets, particularly the EU market, which is the main outlet for Gambian exports. The high level of aflatoxin content and free fatty acids in groundnuts and groundnut oil made it unsuitable for export to EU groundnut markets. Gambian products were instead destined to be used as low-value bird feed. Facing high post-harvest costs due to a dilapidated infrastructure, GGC found it difficult to absorb this price

decline. GGC lost its international market access and farmers lost their sole sale outlet.

Smallholder groundnut producers reverted to informal markets and traders to secure immediate cash for their product, often at much lower prices. Over time this led to a gradual decline in groundnut production, putting the entire groundnut value-chain in peril.

The IsDB Group developed an integrated approach to revitalize the groundnut sector of Gambia, and to enable smallholders to regain access to international markets. The Group's interventions were targeted across the value-chain, but particularly post-production activities, to enable the country to have access to high-value added product markets.

The objective of the program was to modernize, expand and improve the efficiency of GGC operations, so it is able to: 1) maintain its market share; 2) position itself in the high end of the groundnut value-chain to enhance its profitability; and 3) preserve and increase the income of 70% of rural population engaged in groundnut production.

This innovative Group-wide program supported a three-pronged approach to achieve its objectives:

- 1) Providing a USD 14 million rolling line of financing for the GGC through the Islamic Trade Finance Corporation (ITFC) to finance the purchase of groundnuts from farmers at favorable rates;



- 2) Establishing an investment program for upgrading the aflatoxin testing, grading, processing, transport, and marketing infrastructure of GGC to improve production quality, strengthen grading and quality control procedures, and lower operational costs; and
- 3) Providing technical assistance to improve the governance of the GGC and address production bottlenecks.

A major emphasis of the investment program was on improving the quality of the produce and reducing the aflatoxin content in post-production operations to allow Gambia access the more lucrative processed and edible groundnut markets.

The program will have wide-ranging benefits not only for the groundnut sub-sector but for the economy as a whole, which relies on groundnuts as a key diversification export and a source of

foreign exchange. The growth of the sector means that half a million farm households will have the cash they need to access social services, such as health care and education. Moreover, for many Gambians, groundnuts are the sole source of protein and an important way to prevent nutritional deficiencies among adults and children alike.

For the sub-sector and its stakeholders, the program is bringing back the lost export earnings attributed to the downgrading of groundnut products as bird feed, and in fact Gambian producers were facing a complete loss of market access abroad because even the market standards for bird feed have been raised. The program will preserve and increase the socioeconomic lifeline of 500,000 farmers engaged in groundnut cultivation. Furthermore, it will reduce threats to the health of the people and livestock, caused



by very high daily intake of aflatoxin-contaminated groundnut and groundnut products, which has contributed to a rising incidence of liver cancer.

All this will be driven by the revival of the GGC as a profit-making entity, as it sees its profits increase from the lows of about 1.5% to over 17% in a short period after the upgrade of its physical and institutional infrastructure. It expects to regain its share of the ‘Hand Picked and Selected’ groundnut market, and in fact break into the lucrative confectionary products market. GGC will expand into the briquetting business and adopt sustainable electricity production methods using co-generation technology relying on groundnut shells, saving it more than USD 1 million in operational costs annually. The revival of GGC bodes well for the revival of access to formal markets for smallholder producers.

The groundnut sector of Gambia demonstrates the importance of upgrading local production systems to meet the emerging modern requirements of globally integrated value-chains, which often favor large farmers. Concerted and timely efforts are required by governments on the policy front, as well as by public and private sector financiers, to catalyze necessary changes in a timely manner. The inability of the food sector to quickly respond to emerging demands and requirements of buyers can diminish or often eliminate access to markets that have traditionally been taken for granted by developing countries.

## **Betting on Smallholders to Spur Rural Growth in Morocco**

In 2008, the Government of Morocco initiated far-reaching structural and sector reforms. Among them was the Green Morocco Plan (2008-2020) – a transformational agenda to reshape the agriculture sector in the country. The Plan was launched in April 2008, with an overall goal of improving the farming business climate and strengthening competitiveness in the sector in ways that lead to inclusive economic growth. The Plan rests on two major pillars:

- The first aims to develop modern, efficient and high value-added agriculture driven by private sector investment. The focus here is to improve the productivity of large commercial agriculture and enhance the competitiveness of Moroccan agricultural produce in international markets.
- The second pillar supports marginalized groups and smallholder farmers with the objective to developing the value chains for high value crops (for example, olives and other fruit crops).

IsDB is providing the Government of Morocco with a total USD 80 million to support efforts aimed at using marginal lands for the cultivation of olives, a high value-added crop. Among the beneficiaries are about 18,000 smallholder olive farmers (with farms of less than 5 hectares) who are involved in not only

olive production, but also the processing and commercialization of olive oil. The project supports these farmers in three major areas: 1) improved irrigation infrastructure and water management; 2) the development of olive plantations that now cover a total land area of 18,615 hectares, coupled with the construction and operation of 18 olive processing facilities with a total capacity of 1,600 MT/day; and 3) construction of about 50 km of rural roads to improve market access. Funding was also provided for building the knowledge base and management capacity of participating smallholder farmers.

**Project location:** Based on a community needs assessment, as well as the development potential and availability of development plans, project activities were focused on 14 localities in 5 regions: Fes-Meknes, Marrakech, Oriental, Beni Mellal-Khenifra, and Tanger-Tetouan Alhoceima.

**Impacts and outcomes:** The project, which will be completed in mid-2019, will provide participating farmers with a 3-fold increase in income. The average yields of the olive crop are expected to increase from 2 MT/ha to 4 MT/ha, and coupled with area expansion, production volume is expected to rise from 4,620 MT to 75,000 MT by 2020. The processing capacity of the beneficiaries is also predicted to increase from 1.1 million MT to 2.2 million MT. The project has so far enabled the planting of an additional 10,000 hectares, representing 57% of the final target. By mid-2018, the planted area will be reach 15,700 hectares. Farmers will aggregate

their crop production for marketing purposes, and the project will strengthen their linkages to private sector business operators. This will provide smallholders with access to new technologies and closer connections to the market. The construction of the 18 processing plants is an important contribution by IsDB to the implementation of the Government of Morocco's Olive processing master plan. The IsDB-financed processing units will service a much larger existing olive plantation area. IsDB's olive value chain project will contribute to Morocco becoming one of the top five olive oil producers in the world and result in a substantial leap in quality.

### Making Trade Financing Work for Smallholder Farmers

The International Trade Finance Corporation (ITFC), a member of the IsDB Group, was established in 2008. Over the past five years, it has doubled its efforts to ensure that smallholder farmers' benefit from global commodity markets. These efforts are creating jobs, improving productivity, alleviating poverty, and bolstering food security in many SSA countries. Since its inception, ITFC had provided USD 4.7 billion in commodity financing for member countries, mainly in the SSA region. In 2017, agriculture accounted for the largest share (59%) of ITFC's trade financing portfolio for SSA, primarily cotton and groundnuts. Burkina Faso, Cameroon, Cote d'Ivoire, and Gambia are the main beneficiaries of ITFC financing (see Box).



## In Appreciation of the Strategic Partnership Between SOFITEX and ITFC

“Despite the challenging market environments, ITFC as one of the strategic partners of SOFITEX provides around 36% of financing needs of the company. ITFC financing enables SOFITEX to be effective and efficient in purchase and transfer of cotton seed and ginning. Due to improvements in efficiency of operations, cotton producers and other partners are getting paid on time, which directly impacts the socioeconomic well-being of our society. Besides, the financing received from ITFC also contributes to intra-OIC trade, where around 33% of our orders are coming from OIC Member Countries.”

– Mr. Wilfried A. G. Yameogo, CEO of SOFITEX

**Source:** ITFC Annual Report 2017



## Supporting Input and Output Markets to Maximize Impact

In 2014, ITFC launched its second Africa trade initiative (2014-2019), which includes input financing for smallholder farmers that produce export commodities. Under the initiative, ITFC aims to increase its total financing to smallholder farmers in SSA to USD 1 billion by 2019. The input financing model (improved seeds and fertilizers) will enhance agricultural productivity, particularly of the staple crops that are critical for food security in member countries. The combination of commodity export and input financing is expected to substantially increase farmer access to remunerative markets.

### Lessons Learned

- Policies and regulations that are conducive to strengthening agriculture are critical to the commercialization of smallholder farming operations.
- Value-chain development contributes to productivity enhancement, in addition to linking farmers to markets.
- Smallholder farmers will pay for inputs and extension services given that they have access to know-how and guaranteed markets. This is the case for contract farming case of Gambia groundnut farmers presented above.
- The groundnut sector of Gambia demonstrates that, with proper investment in infrastructure, smallholders operating in local production systems can meet standards and requirements of

globally integrated value-chains, which often favor the large farmers.

### Conclusion

Today, a significant number of the IsDB Group's member countries are large producers of wheat (Pakistan, Turkey, Iran, Kazakhstan, Egypt, Morocco and Uzbekistan), barley (Turkey, Kazakhstan, Morocco), cassava (Nigeria, Indonesia, Mozambique, Cameroon, Sierra Leone, Benin), Maize (Indonesia, Nigeria), Millet (Nigeria, Niger, Mali, Burkina Faso, Chad, Senegal), potatoes (Bangladesh, Iran, Algeria, Egypt), rice (Indonesia, Bangladesh, Pakistan, Egypt) and sorghum (Nigeria, Sudan, Burkina Faso, Nigeria). Livestock production is also important to the economies and livelihoods of a majority of member countries. However, most of the value chains for these products remain underdeveloped and overwhelmingly local.

In the past five years, many IsDB member countries, particularly LDMCs, have placed increased emphasis on smallholder commercialization. The underlying principle of this change – from a narrow focus on food security by improving productivity to the development of value chains and agribusinesses – stems from the fact that developing countries realize the importance of markets to improving the standard of living of smallholders and rural households. Opening markets to smallholders can spur entrepreneurship and enterprise development, generating employment for a rapidly growing population of young people.

The Group will continue to support member country efforts to improve market infrastructure in ways that ensure inclusive access to remunerative markets and provide needed opportunities for commercializing subsistence agriculture. This will enable smallholder farmers to transition from informal to formal and structured markets. The Group will support efforts to enhance the role of the private sector in developing value chains, as well as initiatives aimed at mobilizing finance, providing effective mechanisms of service delivery, and contributing to agricultural research. The Group will continue to provide trade finance for strategic commodities that are of critical importance to LDMC economies.

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## Chapter 8

# Empowering Local Communities to Achieve Sustainable Development

Momodou L. Ceesay<sup>1</sup> and Jemal Mahmud<sup>2</sup>



### Key Messages

- Public budgetary and policy support is essential for integrated rural development programs to take root effectively. The IsDB Group is committed to supporting its member countries achieve this, and in ways that scale up and sustain the impacts gained.
- Continuity and sustainability of integrated rural development projects can be achieved through the active involvement of project beneficiaries from the inception stage to completion.
- New innovations, including those that enhance productivity and link farmers to markets, are essential entry points. Early interventions must focus on quick wins.
- Integrated rural development programming requires strengthening the delivery capacity of national institutions. Engaging with relevant stakeholders, including the private sector, is also an integral part of the process required to achieve and sustain impacts achieved.

### Introduction

The integrated community-driven approach to development has been adopted by governments, development organizations, and NGOs in implementing various community projects. Integrated Community Driven Development (ICDD) enables communities to exercise control over the planning, decisions and resource uses related to development interventions (Islamic Development Bank, 2016a). This approach has led to some remarkable achievements in agriculture and rural

development programs in IsDB member countries (Islamic Development Bank, 2016b; Nkonya et al., 2012).

### Integrated Community Driven Development Models

In sub-Saharan Africa, most of IsDB's member countries face decreasing food production, low household incomes, and a lack of access to basic services, such as primary health care, education, and potable water and sanitation. In view of this, the likelihood was quite high that most of those countries would not achieve the 2015 Millennium Development Goals

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(MDGs). The Millennium Village Project (MVP) model was appealing, as it was specifically designed to achieve the MDGs. The Sustainable Village Project (SVP) concept was also introduced as a flagship program and implemented in tandem with the MVPs. Because of the challenges faced in implementing the projects, IsDB worked in close collaboration with the Millennium Promise Alliance (MPA) of the Earth Institute in New York through its affiliate agency, the Millennium Development Goals Center, based in Nairobi, Kenya, and Dakar, Senegal. The objective in partnering with the MPA was to provide technical backstopping and advice to its various project implementation agencies.

Below is a brief overview of selected ICDD projects and programs. The ICDD approach is highlighted using case studies of SVPs and MVPs in specific member countries, along with some of the challenges and lessons learned.

### **Sustainable Villages Program**

The Boards of IsDB and the Islamic Solidarity Fund for Development (ISFD) approved the Sustainable Villages Project concept in May 2011, and charged their respective institutes with responsibility for launching it with full-scale pilots in Chad and Sudan later that year. USD 120.0 million was approved for loans, and USD 1.2 million in grants, the total to be divided equally among five target countries (Chad, Guinea, Mozambique, Sudan and Kyrgyzstan).

The SVP was formulated as an open, multi-donor initiative in order to attract and facilitate national and international partners to collaborate in the projects. In terms of local grass-roots-level development, there are two main approaches that have been tested and proven over the years. The SVP embodies best practices selected from two internationally recognized development approaches: 1) the local institutional development method, which directly strengthens local governments and governance; and 2) the community empowerment approach, which focuses on building the capacities of people in target communities. The ICDD approach has proven to be a popular tool for implementing SVPs (and MVPs) because it brings community members, local organizations and government representatives together through series of capacity building programs. This encourages and strengthens direct institutional linkages between target communities and the government bodies.

Through this approach, IsDB Group financing has become more demand driven, focusing both on generic rural development activities (including basic social services) as well as building agricultural infrastructure. This responsiveness to community priorities has contributed to narrowing socioeconomic gaps within the target communities.

Since the approval of the program, the Group has financed a number projects and added three beneficiary countries to the mix – Mali, Senegal and Uganda (Table 8.1).

**Table 8.1: The IsDB Group's financing for SVPs and MVPs (USD million)**

Country	Project	Amount of Financing	Target Beneficiaries
Chad	SVP	11.7	45,000
Guinea	SVP	12.0	37,000
Kyrgyzstan	SVP	20.1	118,000
Mozambique	SVP	9.0	65,000
Sudan	SVP	20.0	45,000
Mali	MVP	8.0	55,000
Senegal	MVP	20.0	60,000
Uganda	MVP	9.0	150,000

In designing its SVPs and MVPs, IsDB took into consideration the limited capacities and experience of local governments and community organizations. The Bank took a mixed bottom-up top-down approach. It worked closely with the Millennium Promise Alliance of the Earth Institute (Columbia University, New York), to incorporate International best practices aimed at making its projects both effective and efficient, especially the SVPs it funded.

To enhance the capacities of beneficiary communities and consolidate their inputs into the projects, SVPs were designed using a 'block finance' approach, which simply means a fixed amount of funds are allocated for each sector's interventions. This enabled each community to develop and prioritize interventions based on their unit cost relative to the fixed amount of funds available for implementation. However, this can result in higher per capita costs for a given intervention, which in turn can impede the ability of beneficiary governments to replicate the work using their own resources.

### Quick Wins

Despite some major challenges, remarkable quick wins have been achieved by the SVPs and MVPs in Guinea, Mozambique, Uganda, Sudan, Senegal and Mali. In **Sudan**, for example, the implementation of the SVPs in Kulbus and West Darfur, have delivered a near-term but far-reaching solution to the decade-long conflict between farmers and the nomadic communities in the area (locally known as the Janjaweed). The project drilled 19 boreholes to increase the supply of potable water in the area, both for human and animal consumption, which has helped to reduce at least one major source of conflict between the nomadic Janjaweed and smallholder crop farmers. More importantly, the project provided a common forum that enabled the two warring factions to gather and peacefully discuss how to resolve their differences.

With respect to health services, the SVP has provided the hospital with an adequate supply of drugs, essential medical equipment and furniture, five desktop

computers, and two electrical generators. The project carried out a renovation of the hospital, giving it a complete facelift. A similar contribution has been made to the boys and girls secondary schools in Kulbus, providing approximately 300 pupils with chairs and desks and refurbishing both school buildings.

The project has created job opportunities, especially for women and youth. Most of those who completed school now have a job, and a reasonable number the young people are presently earning regular incomes serving the project as community facilitators and extension workers.

In **Mozambique**, youth comprise around 59% of the total population of Molumbo Sedi District. Given this fact, the SVP intervention strategy focuses largely on capacity building, especially for women. Forty young people (mainly women) participated in adult literacy training, and 480 women were trained in matters of nutrition, 77 of which were in the youth community. Twelve young women even received training in the production of radio programs aimed at young people and women.

To ensure food security and reduce malnutrition, vegetable production is being promoted in Molumbo Side District communities (Zambezia Province) that are participating in the SVP. According to the 2017 census, this district has a population of 62,000 people, with nearly 68% of them being women. Regular visits are made by the project's extension staff, who provide field training and monitor the progress of farmers in the area. Training activities focus on production techniques for maize, beans, soybeans and various other vegetables. Table 8.2 shows the impact on incomes of these interventions during the agricultural season 2016/17, compared with the previous year 2015/16.

The main objective of the SVP in Mozambique is to promote the transfer of technology and innovations aimed at improving agricultural productivity and enhancing the socioeconomic development of the communities covered by the project. To this end, an emphasis is given to ensuring that women have increased access to basic services, as well as more and better socioeconomic opportunities.

**Table 8.2: Increase in average income generated by specific crops over two agricultural seasons, 2015/16 and 2016/17, in the Molumbo District (Mozambique)**

Crop	2015/2016	2016/2017	% Change
Maize	6,421	9,766	+52.1
Beans	2,432	9,052	+272.2
Various vegetables	10,000	10,312	+3.1
Soybeans	1,612	1,641	+1.8

Source: SVP Annual Progress Report 2017



**The Mozambique SVP provides training by knowledgeable extension staff to farmers in Malico village on the use of good agricultural practices to establish and produce high-value horticultural crops**

In **Uganda**, the IsDB-supported MVP has made remarkable progress, including but not limited to the construction of several community access roads. As a result of its efforts to rehabilitate roadways, the Uganda MVP succeeded in opening up an abandoned access road that was last traversed by a vehicle in 1968. This road is now being used by 20 to 30 ten-ton trucks carrying matoke bananas from farms to markets in Kampala.

The project has also constructed or rehabilitated a number of health facilities, including a regional hospital in Issingiro District with staff housing capable of accommodating three doctors and up to seven nurses.

With respect to education, the project has rehabilitated a number of schools and provides school enrichment products and services (including personal sanitation pads for girls) that have increased student retention. Pupils as low as the third grade

are exposed to the use of information technology through computer classes introduced in selected schools, both in Isingiro and Ruhira Districts.

Through the combined efforts of parents and teachers, a sustainable school feeding program has been introduced in various schools. A mechanism was put in place allowing schools to collaborate with farmer cooperatives that supply food to each school. The integrated nature of this project also enabled farmers to intensify the availability of veterinary services for their livestock, improving the quality of their cattle breeds and increasing poultry farming in the two districts, both by individual farmers and by schools.

Below are some of the key result indicators for the MVP Phase I & II interventions in Issingiro and Ruhira in Uganda:

- The percentage of households having enough food to get through the year has increased from 20% to 85%;

- Post-harvest losses have been reduced from 30-50% to less than 10%;
- The average household income in the MVP Phase II has risen from less than USD 5 per year to USD 1,760 (~UGX 6,400,000) per year.
- The prevalence of underweight children under-5 years of age has been reduced from 11% to 8%;
- The proportion of children under-5 who are moderately or severely stunted has declined from 50% to 42%;
- The proportion of children under-5 who are moderately or severely wasted has dropped from 3% to 0%;
- The proportion of households that live on less than a dollar a day has been reduced from 60% to about 18.6%;
- Gender parity in primary school education increased from 1.05 to 1.07;
- The proportion of women who attended the four ante-natal care visits recommended over the course of their pregnancies increased from 33% to 85%;
- In addition, skilled birth attendance increased from 9% to 90%;
- Bean yields increased from 0.5 MT/ha to 2.0 MT/ha, while maize yields increased from 0.7 MT/ha to 3.8 MT/ha;

- 95% of the population in the project area is now food secure throughout the year; and
- 61% of the members in Isingiro District Savings and Credit Cooperatives (SACCOs) are women.

The Uganda MVP Phase II took a gender-based approach to all its project interventions, including those in the agriculture sector. Table 8.3 shows a gender-based breakdown of activities implemented under the MVP II.

## **Key Interventions and Achievements of the MVP in Senegal**

### **Agriculture and Agribusiness**

The overall goal of the MVP in Potou (in the Niayes zone of Senegal) was to support project communities' efforts to achieve the MDGs. Agriculture and agribusiness were critical for realizing the project's objectives, given that 65% of the people in the region derive their livelihoods from the sector. This MVP focused on increasing agricultural productivity through provision of quality farm inputs and strengthening cooperatives' services to enhance their efficiency, productivity and profitability, transforming them into sustainable enterprises capable of providing quality services to their members.

**Table 8.3: Summary of activities and impacts under the Millennium Village Project, Phase II, Uganda**

Project Activity	Impact of activity	# Farmers impacted	
		Women	Men
Construction of soil conservation structures on farm (1,000 km)	<ul style="list-style-type: none"> <li>Farmers knowledgeable about soil conservation practices</li> <li>Improved crop productivity</li> </ul>	3,500	3,600
Train farmers on good agronomic practices, including integrated soil fertility and organic and inorganic fertilizer use	<ul style="list-style-type: none"> <li>Farmers knowledgeable about good agronomic practices, including integrated soil fertility management</li> <li>Improved crop productivity</li> </ul>	4,100	6,000
Train framers on improved post-harvest handling	<ul style="list-style-type: none"> <li>Farmers knowledgeable on post-harvest technologies</li> <li>Increased food security (hunger months reduced from 5 to 1)</li> </ul>	1,961	2,958
Procure and distribute vacuum grain storage facilities	<ul style="list-style-type: none"> <li>Farmers having access to appropriate facilities to store their produce.</li> <li>Increased food security</li> </ul>	400	400
Provision of Friesian cows to farmers (60 heifers)	<ul style="list-style-type: none"> <li>Improved household nutrition and incomes through sale of milk</li> </ul>	28	32
Provision of agroforestry and fruit tree seedlings to farmers (5 million seedlings)	<ul style="list-style-type: none"> <li>Improved tree cover in project area</li> <li>Improved household access to tree and fruit products</li> <li>Improved nutrition (availability of fruit trees and fuel wood for cooking)</li> </ul>	4,220	4,180

**Table 8.3 (Cont.)**

Project Activity	Impact of activity	# Farmers impacted	
		Women	Men
Train community agriculture and livestock extension workers on appropriate extension methods	<ul style="list-style-type: none"> <li>Enhanced knowledge about effective extension methods</li> </ul>	20	40
Promote crop and livestock diversification on farms	<ul style="list-style-type: none"> <li>Diversified sources for food and nutrition</li> <li>Enhanced food and income security</li> </ul>	1,500	1,440
Increase membership of farmer cooperatives	<ul style="list-style-type: none"> <li>Easier access to farm inputs</li> <li>Better bargaining power, improved quality and quantity of agricultural products, value addition, and improved household incomes</li> </ul>	20,650	9,450
Increase membership to Savings and Credit Cooperatives (SACCOs)	<ul style="list-style-type: none"> <li>Easier access to credit facilities</li> </ul>	22,378	14,266



**Ugandan farmers learning about livestock care at one of several training sessions (left) and poultry distributed to Abarikuntuma Poultry Cooperative (right)**





**Community demonstration tree nurseries in Issingiro, Uganda**

### Increasing Agricultural Productivity

The major cause of low agricultural productivity in the project area is limited access to water for irrigation; improving that access through the MVP has significantly increased the production and productivity of participating farmers. The initiative has led to better soil and crop quality, and ultimately to sustainable improvements in yields. The project is collaborating with Columbia University on a shared solar-powered irrigation pilot project. The basic design of the system is composed of central energy generation points from solar panels that power from 4 to 7 different submersible pumps. The pumps draw water from boreholes that are located at the farm sites being irrigated. The pilot is being run in Gabar, in the Niayes section of the MVP cluster (a low-lying coastal area) where the water table is close to the surface. The farmers connected to the system mainly grow onions, though other vegetables

(carrots and tomatoes) are grown on a smaller scale. Given the demand for irrigation, the system has high potential for being commercially viable. The project has tremendous potential to meet the irrigation needs of farmers, not only in northern Senegal but in other parts of the country as well. What is needed for the next step is the financing necessary for scaling it up.

Other farmers are using other forms of irrigation, such as high-capacity diesel-powered pumps to irrigate large areas. Each of those sites has a borehole with a capacity to provide 60 m<sup>3</sup> of water per day. In the Niayes zone, there are 24 horticultural plots of one hectare each (equipped with motor-pumps and mini-drillings) that are being used by 120 farmers (~ 2,000 m<sup>2</sup> each) to produce onions. The irrigation systems are managed by 13 different cooperatives. The average onion yield is about 30 MT/ha and each farmer earns an estimated USD 1,962 for

two cropping seasons per year. In the Dieri zone, the project introduced market gardening for 320 direct beneficiaries by putting in place eight 4-hectare community gardens. Each garden has an equipped borehole and an irrigation system with the necessary basins and water tanks in place.

These shared gardens have significant potential to become successful income-generating businesses in their respective villages over the longer term. However, the project is struggling to find sufficient funds to complete the construction of additional gardens, as well as with helping farmers receive production credit to use as working capital. Leaders of the cooperatives and the farmers receive training on: organizational leadership and management; improved water management practices; maintenance of the gardens' equipment; and on good agronomic practices. Overall, in terms of design and engineering, the irrigation projects are working well. The pumps are irrigating, and farmers are producing. However, continued operation depends on farmers making agreed payments, and the

current estimated repayment rate among participating farmers is only 25%.

### **Key Challenges in SVP and MVP Implementation**

As stated by ISFD in its Annual Effectiveness Development Report 2015, *"Implementing a SVP is faced with numerous challenges and constraints especially at the initial stages. This is primarily due to the complex nature of the design of the projects. The SVP in particular includes interventions in several sectors (such as agriculture, health, education, water, sanitation, IT, rural roads, energy, and micro-finance)"*. In addition to these, most SVP and MVP project locations are in remote rural areas, making it difficult to access the intervention sites. Hence resulting in high project implementation cost. It is very difficult to attract and retain qualified staff.

### **Lessons Learned**

- Integrated approach of the SVP/ MVP models can be very effective in alleviating poverty by co-locating



**Solar irrigation system in Gabar, Senegal**



**Irrigation activities in the Dieri Zone, Senegal**

investments in health, education, agriculture, water, energy and infrastructure (e.g. rural roads);

- Community environment and the involvement of the design of the project activities enhances ownership and sustainability;
- Flexibility in procurement methods significantly helps with achieving speedy and timely implementation of SVPs and MVPs; and
- The high per capita cost associated with ICDD programs can be offset by forging public-private partnerships.

## Conclusion

It is evident that the SVPs and MVPs, as models of community-driven development approaches, can achieve tangible impacts in rural communities within a short period of time. The next challenge then is identifying mechanisms to replicate and scale up benefits to the many in Africa and other regions that can gain from an integrated approach to achieving holistic development in their agriculture and related sectors. As demonstrated by the country case studies presented here, solutions begin with strengthening the ownership and knowledge-base of beneficiary communities. This requires support from qualified and experienced technical staff from national institutions charged with program execution. In some countries, this is limited and will require international or local institutions that can supplement the skills needed, as well

as train trainers and the communities on sound implementation of the integrated components of the programs. These investments are essential to achieve the desired impacts. This calls for commensurate budgetary support from governments and development partners, at least until the process takes root, typically over a 5- to 10-year period. This would allow the private sector and the target communities to drive momentum and the benefits of the program forward and at scale.

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## Chapter 9

# Beyond Microfinance: Inclusive Financing for Rural Development

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### Key Messages

- IsDB's approach in rural finance provides a sustainable and effective means for combating rural poverty. This mode of financing allows the capital provider and the recipient share the risks and benefits.
- Financial institutions would realize higher returns operating as trading businesses than banks in rural areas.
- Group value chain financing is an excellent way to extend affordable rural finance.
- Policymakers and advisors should empower microfinance institutions to strengthen rural economies by adjusting the regulatory framework.

### Introduction

Conventional microfinance institutions (MFIs) have been notably successful in providing affordable access to credit in rural areas. Still, it is fair to ask how conventional microfinancing compares to Islamic financing, and which might work best in member countries.

Over the past forty years, rural finance has accomplished much – from increasing food production, to improving rural development, to decreasing rural poverty through rapid disbursement of subsidized loans to target populations, to the building up of sustainable local institutions that serve the poor. In the 1960s and 70s, as the Green

Revolution spread across Asia, employees of state-owned banks began showing up in rural areas on their bicycles, motorcycles, or jeeps searching for trustworthy villagers to whom they could provide credit. They came thinking they could help feed people and increase rural economic growth.

In the late 1970s and early 80s, there was a growing debate and steady criticism about the viability and effectiveness of state-delivered credit to poor farmers by governments and donors; indeed, most programs were incurring large loan losses and required frequent recapitalization to continue operating. It became increasingly evident that market-based solutions were required, and this led to a new approach that considered microfinancing as an integral part of the overall financial system (Robinson, 2001). Professor Muhammad Yunus, the founder of Grameen Bank, advocated

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strongly for this approach (Odell, 2015). He debunked misconceptions about the rural poor as not being credit-worthy and was able to convincingly demonstrate that by forming community level groups, the provision of collateral was unnecessary – social pressure ensured that group members repaid their debts on time. This enabled poor people in rural areas, who were long considered too poor to qualify for traditional bank loans, to gain access to credit. Within a short time, microfinancing became popular as a viable business model. Microfinancing expanded rapidly as governments, donors and private institutions attempted to replicate the approach.

Various impact studies, however, showed that the high interest rates (which averaged 30%) imposed on the poor achieved mixed results in alleviating poverty; there was no solid evidence that microcredit leads to a large and sustained increase in income and consumption for beneficiaries (Odell, 2015). Those studies have shown that financial services alone are not a panacea for reducing poverty. Nevertheless, conventional microfinance has been successful in providing access to credit for millions of people around the world.

## Islamic vs Conventional Microfinance Institutions

Both Islamic and conventional microfinance concepts provide the same three financial services to help the poor: build income generating assets; stabilize consumption; and protect businesses from future risks. Islamic MFIs started in a way similar to how conventional financial institutions began – but they have adapted the conventional model to comply with Islamic principles. It was no surprise that most Islamic MFIs started with Murabahah financing (fixed returns finance contracts) and as a result, their effectiveness as a means of poverty alleviation remained limited much the same as their conventional counterparts.

Islamic microfinance in its initial practice was providing all the benefits that conventional microfinance was providing and ended up being constrained by the same limitations of conventional microfinance. It is faced with the challenge of reducing the cost of financing in addition to the extra burden that the complexity of Islamic financial instruments brings to the overall process of financing. Microfinance institutions implementing Shari'ah-compliant instruments comply in the form of financing



### Murabaha Transaction

In a Murabaha transaction, the MFI purchases an asset on behalf of the client and sells it to the client at a profit. The client approaches the MFI with an invoice from the supplier what they need to purchase (such as seeds, fertilizer or other inputs). The bank transfers the funds to the supplier and sells it to the client at a profit, which is to be repaid on a deferred basis.



## Salam Transaction

Salam transactions are excellent for providing working capital to small businesses especially in the field of Agriculture. Salam not only provides working capital to farmers, it assures them of a market. MFIs will purchase the product from a farmer at a discounted price and advance the cash to him or her for purchasing inputs, labor, etc., to be delivered during harvest 6 months later. In order to profit from the transaction, the MFI will negotiate with a buyer to sell the harvest that it is expecting to receive.

but struggle in realizing the value of conducting trade and investment with its clients.

An effective Islamic Microfinance institution has to behave more like a trader and investor than a banker. Compared to a banker, a trader will add value to the transaction by: providing transportation services; purchasing in bulk at wholesale prices; take ownership of the traded goods; and marketing the goods. Those features distinguish an ideal Islamic MFI as a risk-sharing institution which is a clear departure from the usual banking culture and mandate. In conventional finance, engaging in business transactions is seen as an unnecessary liability of which financial institutions should stay clear.

Islamic finance does not differentiate between the financier and the investor functions and mandates that Islamic MFIs mediate (take and deploy) funds in the most efficient and prudent manner. The mindset of such an institution is to focus on business-related risks more than repayment-related risks. Financing will be provided on the basis of prevailing business opportunities rather than the ability to repay the financing. Islamic MFIs have the

freedom to engage in the value chain and conduct business with their clients. By doing this, Islamic Microfinance serves not just to provide financial inclusion, but it also to democratize business opportunities. Furthermore, they should be able to negotiate lower price for assets they are purchasing on behalf of their clients. Over time, they can better understand the needs of their clients. They can identify popular products and suppliers and negotiate preferential trading agreements as a wholesale agent. Alternatively, they can directly purchase seeds or fertilizers from the suppliers in bulk and sell them to their clients when the demand arises.

Recently, IsDB's interventions promoted the adoption of a comprehensive economic empowerment approach through a full merging of financing, partnership, SME investment support (value chain financing), and other non-financial services. The Bank's programs in this sector provided a more sustainable and effective model for combating poverty. Those programs have provided solid evidence of positive impacts, as illustrated by the following two case studies on how IsDB's interventions increased access to affordable financing in rural areas.

### How Have Financial Institutions Realized Higher Returns Operating as a Trading Business?

Traders operating in rural areas often function like a monopoly and generate high profits at the expense of poor farmers. Farmers will not be able to convert their labor in the field to revenue so long as they fall victim to two types of sharks – the ‘loan shark’ and the ‘middleman shark’. Middleman sharks often go to rural areas to purchase agricultural production on the cheap from desperate farmers. In many cases, these two sharks are the same person and their activities enslave large communities who remain trapped in the poverty cycle.

In Palestine, under an Islamic microfinance program called the ‘Deprived Families Economic Empowerment Program’ (DEEP),

which was financed by IsDB, the MFI provided raw materials and working capital through a *salam* (an advance purchase) agreement with women cooperatives. Palestinian women are well known for their expertise in producing *maftoul* (Palestinian couscous). The MFI orders the amount of *maftoul* to be produced and pays the women cooperatives upfront. After the agreed period for delivery, the MFI receives the *maftoul* and then exports it to the EU.

The MFI in the *maftoul* value chain role provides advance financing for raw materials; it brands, labels and packages the product so that it is ready for export. The MFI ensures that product quality meets high European standards, and then collects and sells the *maftoul* to exporters for a profit, as illustrated in Figure 9.1.



**Figure 9.1: Risk sharing through Salam transactions in a Palestine financing model**



By using a business trader approach (Islamic finance) both parties, the client and the MFI, enjoy the fruits of success. Through *salam* financing, suppose each woman needs USD 500 to buy seeds to sell USD 1,000 of *maftoul*; since the target profit rate is 20%, the MFI contracts the *maftoul* for USD 833 ( $1,000/1.2$ ). It then negotiates with a buyer for a 30% higher price, selling at USD 1,300. The MFI receives the *maftoul* from its clients (the women) and sells to the buyer at USD 1,300. The transaction returns 50% in additional profit, USD 300, out of which USD 150 was realized by the clients. The IsDB-supported MFI was able to generate a more significant profit for itself and its client, clearly a win-win scenario generated by the MFI's ability to play the role of the trader. The 30% discount negotiated by the MFI is actually the middlemen rate that currently exists in the value chain. Hence, by cutting out the middlemen, their benefits are taken by the MFI and shared with its clients, resulting in the win-win scenario. This was possible because the Islamic MFI was able to negotiate with the buyer and obtain a higher price than the client could.

On the other hand, in a non-profitable outcome where the *maftoul* produced by the women falls short of the quality required and needs to be discarded, the loss will be shared. In this case, the women cooperatives (the clients) will lose the amount they invested in inputs (USD 500) if they borrowed from the Islamic MFI. If they borrowed from a conventional MFI, they would still be liable for paying the principal and interest due (USD 650).

Hence, the women bear less risk by engaging an Islamic MFI (USD 150). The Islamic MFI will also lose the potential profit from their sale to the exporter (calculated at USD 181), although no actual direct loss is incurred. Each stakeholder in the value chain bears some form of real business risk, which goes beyond credit risk in the conventional model. By sharing the risk, the Islamic MFI has an intrinsic interest in ensuring the success of the transaction. The risk accepted by the Islamic MFI is derived from its role as an aggregator of *maftoul* from the women cooperatives, its responsibility to ensure product quality and, most importantly, as the marketer of the *maftoul*.

Islamic MFIs helped the farmer gain access to markets and plays the role of an 'aggregator' by purchasing the produce of small farmers in order to sell them to a large buyer. As an aggregator, Islamic MFIs are in a good position to negotiate with the buyers for better prices than would ordinarily be enjoyed by farmers. If financial institutions were to operate as a trading business, they would realize that there are a lot of opportunities in rural areas.

### How Has the Group Value Chain Approach Benefited Smallholders?

The Abu Halimah greenhouses project started in May 2011 through the Bank of Khartoum's (BOK) Microfinance Unit. Instead of providing small loans, which defines the microfinance industry, BOK ventured into grouping those small/micro projects into one large project. Large projects were developed involving hundreds

and in some cases thousands of beneficiaries, with each investment totaling up to USD 3 million. This approach was found to be more sustainable and, with an internal rate of return (IRR) of about 20% per annum, more effective. Each beneficiary received more income by sharing in the venture's profits and being co-owners. By being a real partner in operating these businesses, BOK developed its expertise in the area of agriculture and livestock development.

The Abu Halima Greenhouse Project was initially conceived by agricultural graduates. Many of them were unemployed or were working on other farms for very low pay and wanted to

create an opportunity to work and reap the fruits of their labor. These graduates formulated an initial business proposal and approached the BOK for financial backing. The business proposal was further developed jointly by BOK staff in coordination with community groups. A consultant was hired by BOK to support the graduates (the clients) in developing their business ideas into operational plans with the various Islamic finance instruments that may be provided to targeted clients.

The project rested on an innovative idea of producing winter crops (such as tomatoes) during summer, producing them in a controlled greenhouse environment.



**A winter green pepper crop being grown in a greenhouse. When harvested, these less expensive peppers will compete with the high-priced ones that are imported in summer**

During the summer, imported tomatoes cost five times the locally produced ones sold in the winter. In addition, the greenhouses are able to produce high-value crops that are usually imported during winter (peppers, for example). BOK refined the business proposal in consultation with the graduates and submitted the proposal to the investment board for approval to commission a detailed feasibility study. During this period a strategic technical partner, a Turkish consultant, was hired to train the graduates on how to manage the greenhouses and the business.

Based on the feasibility study, the BOK board approved SDG 10.90 million (USD 3.27 million at that time) with the possibility of increasing up to SDG 15 million (then USD 4.50 million) in the form of a trust financing contract, or *mudaraba*. The BOK ceded control of the project after the 5-year implementation period. Its investments was for constructing 25 productive greenhouses, each 1,710 m<sup>2</sup> and composed of 5 tunnels of 342 m<sup>2</sup> each.

Interested graduates who applied to be part of the project underwent a thorough interview that tested their capacity and commitment to the project. During the 5-year implementation period, the graduates received about SDG 2,700 (USD 810) per month, about 40% of the profits generated from the project. Since the key to the project's success is being able to sell all the high value 'off-season' crops, BOK negotiated master contracts

with large supermarkets such as Home Centre and Sanaa.

One interesting feature of this project is that there is no requirement for collateral or third-party guarantees. The graduates signed a personal guarantee to remain committed to the project throughout the 5-year implementation period. BOK reserved the right to remove any graduate and replace him or her with another if the graduate is not serious or committed to the project. At the end of the 5<sup>th</sup> year, all of the project's assets (estimated at SDG 10 million) were transferred to the Graduates Association (made up of the 125 selected graduates) after which they expected to receive at least SDG 6,750 a month from the produce.

Another interesting feature is that as *Rab-ul Mal* (investor or provider of funds), the BOK had the right to extend the *mudarabah* for another year due to crop failure or other unforeseen circumstances. Therefore, the bank had a buffer of one year to ensure its target returns for the investment were met. The bank ensured the welfare of the graduates. The target returns during project implementation was more than what farmers would have earned if they worked on their own or if they worked on another farm.

At the end of 2013, the default rate was around 12% for individual *murabahah* financing, while in the project financing the figure was only 3% (Alsagoff & Surono, 2016). This rate is much better than the



**A greenhouse nursery to produce seedlings for smallholder farmers, a part of the IsDB/Bank of Khartoum-funded Abu-Halima Greenhouses Project**

country-wide average of 22.9% in non-performing loans after 90 days (PAR>90) or the PAR>30 average of 28.6%, but is relatively high compared to the average in the African region (2.3% and 1.7%). According to the BOK, this is due mainly to the deteriorating economy. The project financing's weighted average Return on Investment (ROI) was 18%, above the ROI of individual *murabahah* financing of 14% in local currency. The profitability was at a competitive level with the median market benchmark, which was 1.8% in hard currency at the time.

Sudan as a whole has experienced extraordinary inflation, and a mere 18% ROI may be considered a bit thin to cover the inflation abrasion. However, the profit should be benchmarked using the prevailing inflation rate (11-12%) when the

project was conceived, and therefore an 18% local currency profit is a promising and fair rate for such businesses. In terms of sustainability, operational self-sufficiency stood at 1.3 – above the country average of 1.1, though slightly below the Africa average of 1.4.

A BOK Business Officer (BO), the equivalent of a credit officer, on average services around 20 clients, while in the project financing, the average clients per officer is 60. The nature of group financing in a localized project area enables the BO to operate more efficiently and monitor the business more closely. A BO is deeply involved in the financed business, contributing financing expertise and building the capacity of the beneficiary at the same time. With the help of a technical partner, the BO

can also identify the business-associated risk together with the beneficiaries and discuss risk mitigation measures.

IsDB microfinance interventions have demonstrated that value chain project group financing can be very effective in developing sustainable business models that entail financing for the rural poor.

### Lessons Learned

MFIs are able to empower their clients by going beyond their traditional financial intermediary role. By doing so, they can make a significant and sustainable impact on improving the livelihoods of the poor. Still, several key lessons should be heeded:

- Islamic MFIs are typically in direct violation of central bank restrictions on microfinance institutions purchasing assets.
- In conventional microfinance there are procedures for lending and procedures for procurement. However, in Islamic microfinance there are procedures for procurement and procedures for sale. So, on the one hand it complicates matters for the institution but on the other it facilitates things for the beneficiary.
- Value chain group financing projects require more commitment in terms of resources, as well as financing size. This dedication of resources and high overhead can only be compensated in projects that are larger in scale.
- IsDB has found it difficult to encourage MFIs to move away from microcredit and take up an active role in business ventures. Existing MFIs and funds are based on the Grameen model of microcredit, and it will take significant effort and the right government policies to change their mindset from providing microcredit to embracing a trading business approach.
- Larger institutions compared to smaller ones are more hesitant to change, requiring capacity building to change mindsets from top management down to the staff level.
- Staff that come from banking backgrounds have difficulty in accepting other methods that require understanding and being involved in business operations.
  - This approach works well in rural areas where market failure is common. Careful study is needed by MFIs to understand the causes of market failures in order to generate successful business solutions.
  - MFIs can develop sustainable rural businesses that effectively provide sustainable incomes to poor villages.
  - Any microfinance institution that is interested in providing Shari'ah-compliant finance needs to develop its capacity in three areas: 1) the systems, processes and documentation needed to implement Shari'ah-compliant financing; 2) the economic activities undertaken by

clients and the opportunities that arise from being an active participant; and 3) how to engage with various stakeholders within the value chain in order to add value for the clients.

- It is critical to pilot and then scale up the value chain group financing project model in other regions and settings, which may complement the existing Islamic microfinance model and add to its potential for supporting small agribusinesses that contribute to poverty alleviation, financial inclusion, and equitable economic growth.

## Conclusion

Governments should empower MFIs to strengthen the rural economy by changing the regulatory framework to enable additional services. Financial Institutions should endeavor to improve their ability to operate more widely and develop other innovative modalities in line with clients' needs and desires, while observing the essence of Islamic financing regulations. IsDB is in the unique position of being the global leader in promoting Islamic banking and finance. This comparative advantage should be further enhanced by positioning IsDB as the knowledge leader in developing inclusive markets. In order to do so, it is recommended that IsDB:

- Develop and promote inclusive markets as part of its mandate to promote Islamic banking and finance in member countries and beyond

by building awareness, exchanging experiences, and capitalizing on reverse linkages via collaboration among different stakeholders (for example, linkages with governments, regulators, private sector organizations, financial institutions, and development organizations, practitioners and networks).

- Develop regulatory policies and standards that will enable and encourage financial service providers to actively participate in real economic transactions.
- Develop an operations toolkit on how to develop the capacity of financial service providers to engender and operate in inclusive markets.
- Develop a monitoring and evaluations toolkit to more accurately gauge the capacity and impact of financial service providers.
- Partner with a management information system providers to incorporate the tools found in the operations and M&E toolkits in order to improve the cost-effectiveness of financial service providers operating in rural areas.

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## Chapter 10

# Young Agripreneurs: Unleashing the Potential of Agriculture

*Baheirah Khusheim<sup>1</sup> and Ibrahima Toure<sup>2</sup>*

### Key Messages

- Unemployment is a critical challenge for youth in IsDB member countries. Agriculture offers huge potential for generating jobs, and this must be communicated to young people in attention-grabbing ways to change their perception of the sector.
- IsDB Group will support efforts to build a cadre of young ‘agripreneurs’ in its member countries. The agripreneurship model and associated business incubators should be promoted using social venture capital.
- The Group will support value chain financing and efforts to leverage technology and market uptake with the intention of connecting youth and women to new agribusiness opportunities, and to sustain and maximize the breadth of intended positive social impacts.
- Strengthening the agribusiness environment is critical for growing agripreneurship opportunities, both for youth and women. Capacity development investments are needed mainly in practical agribusiness education, including how to find startup resources, gain access to market information, and apply ICT as a core element of a value chain-oriented agribusiness.
- IsDB Group commits itself to growing strategic partnerships that facilitate the inclusion of youth and women. Governments, the private sector, civil society, and youth and women themselves should work together to overcome barriers to socioeconomic inclusion.

### Introduction

New challenges and novel prospects arise for youth in the context of rapid cultural change resulting from globalization, in particular, the spread of new global lifestyles. There are about 1.75 billion youth (15-29 years old) around the world,

and nearly 500 million of them (28.5%) reside in IsDB member countries. While a large youthful population is often seen as a source of growth and is the envy of many countries with aging populations, a lack of employment opportunities for young people can lead to political and social instability, as demonstrated by the Arab Spring (SESRIC, 2017).

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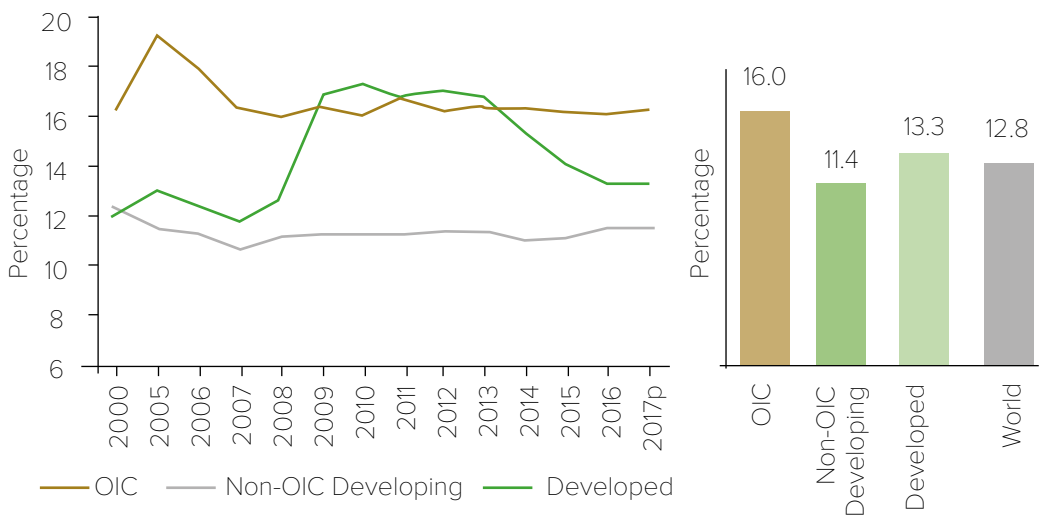
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According to the International Labour Organisation (2017), youth unemployment remains a very challenging issue. Young people comprise more than 35% of the world’s unemployed population. Beyond that, however, more than one-third of the youth in the developing world live in extreme or moderate poverty, despite having a job (International Labour Organisation, 2016).

Unemployment among youth is one of the most vexing challenges faced by IsDB member countries – the average youth unemployment rate in these countries has stagnated at around 16% since the turn of the century, and it can far exceed that level on a country by country basis. As of 2016, youth unemployment was estimated at 13.3% in developed countries and 11.4% in non-OIC developing countries where the global average hit 12.8% (ILO, 2017). During

the period 2012-2020, the Group’s member countries need to create an additional 9.2 million jobs for youth. After 2020, they need an additional 9 million jobs for every 5 years until 2035 (SESRIC, 2017) This is, indeed, a significant figure, and the agriculture sector in these countries holds huge potential for generating jobs.

While agriculture is a major part of the solution to youth unemployment around the world, but in many places, it has an image problem: young people do not think of it as an attractive source of jobs. Research indicates that by making farming more profitable and less arduous, governments can attract youth into the sector (United States Agency for International Development, 2017). This depends on agricultural policies and programs that will help youth adopt new technologies and provide access to productive resources,



**Figure 10.1: Youth unemployment trends, 2000-2017 (left) and youth unemployment in 2016 (right)**  
 Source: ILO (2017)

such as land, improved seed, fertilizer, and credit, as well as to markets and market information. Such opportunities could begin to make agriculture an attractive and viable career path for young people. They need to learn about inspiring success stories that can spark in them an entrepreneurial interest in agriculture.

To increase the probability of success in making agriculture an appealing alternative, governments and development partners need to invest in capacity building and the business ecosystems associated with the sector. Young agripreneurs will need practical education in how to obtain startup resources, gain access to reliable

market information, and how they can use ICT to make their efforts vastly more productive.

The overall picture of youth entrepreneurship in IsDB member countries suggests that the group has great potential. Nevertheless, the entrepreneurial spirit in these countries is held back by structural and cultural barriers that hinder the conduciveness of business 'ecosystems' to youth entrepreneurship and innovative growth. The member countries, as a group, are in need of comprehensive and aggressive reform if they are to capitalize on their potential, especially with respect to opening new opportunities for youth and women.



## Youth Entrepreneurship in IsDB Member Countries

In IsDB member countries, entrepreneurship is constrained and business failure rates are higher than advanced economies. According to the Global Entrepreneurship Index (GEI), the Bank's member countries score below average in the quality and quantity of entrepreneurial activity relative to both the world average and that of advanced economies. The underlying reasons for these low scores include an underdeveloped operating environment (or 'business ecosystem'), and the fact that most entrepreneurial activity in member countries is driven out of necessity.

Entrepreneurs motivated by necessity choose to engage in particular activities because they have few or no other employment options. On the other hand, opportunity-driven entrepreneurs see and exploit promising opportunities to become more independent, or increase their incomes, or fulfil personal ambitions. While both entrepreneurial types can contribute to economic growth and the inclusion of youth, opportunity entrepreneurs are believed to be better prepared, to have superior skills, and earn more than those driven by necessity. They are more likely to bring about innovation, create scalable firms, and catalyze structural change.

## Relevant IsDB Experience in the Sector

The Bank's lending portfolio aimed at youth employment, especially in agriculture, is relatively small. Most projects include interventions in support of small- and medium-sized enterprises (SMEs) and business incubators, as well as skills development, which foster job creation and work opportunities for youth. To better understand how such interventions are made, their effectiveness, and what can be learned from them, several short case studies are presented here.

### Youth Employment Support (YES) Program for Agriculture

Introduced in the aftermath of the Arab Spring, the IsDB Youth Employment Support (YES) Program aims to help IsDB member countries in the Arab region that are affected by chronic youth unemployment. The Bank approved USD 200



million in funding for projects in Libya, Yemen, Egypt and Tunisia. These projects have the common objective of providing employment for youth, and each is built on existing institutions with the capacity and potential to generate jobs. The goal is to contribute to youth employment and provide income-generating opportunities to young people through labor-intensive public works. In order to do this, each project was designed to accomplish the following specific objectives:

- 1) Build, rehabilitate, and maintain community assets through labor-intensive public works;
- 2) Create income-generating opportunities for young laborers and farmers in rural regions;
- 3) Support smallholders in key agricultural sectors, including honey, coffee, fruits and vegetables.

### Case Study: YES Project in Yemen (USD 50 million)

Yemen has both a large proportion of young people and a rapidly growing population. These factors intensify the effects of natural resource scarcity, a severe lack of employment opportunities, and declining government revenues. The country has the largest number of young people in the world outside sub-Saharan Africa (70% of Yemen's population are below the age of 30); it also has one of the highest unemployment rates in the world, which poses a serious threat to overall stability. Nevertheless, the need to improve infrastructure becomes even more critical

when it comes to the development of agriculture.

Despite the difficulties that instability has posed, the IsDB YES Project in Yemen has created 90,000 work months for youth as the project strives to reduce youth unemployment rates in the country. The project was designed to target 500 villages in five Yemeni governorates – Al Dhala, Dhamar, Hodaidah, Lahej and Taiz – which have a total combined population of about 7.11 million. So far, 173 hectares of agricultural land have been rehabilitated, 124 hectares of agricultural terraces have been constructed, 7.55 km of irrigation channels have been built, and 139 water-harvesting tanks, each with a capacity of 16,292 m<sup>3</sup> have been constructed. A total of 172 water wells were built, along with 233 harvesting cisterns with a capacity of 3,495 m<sup>3</sup> each. In addition, 35 km of rural roads were constructed, and 42 hectares of pastureland were rehabilitated.

The project entailed a strong capacity development element: 1,317 master builders have been trained, along with 207 farmers learned about various practices and technologies, including drip irrigation, hybrid

seeds, improved seedlings, mulching, and the use of pesticides and fertilizer. Sixteen demonstration plots were also put in place to train 100 young farmers on drip irrigation systems.

Lessons learned from the project include:

- The project was designed to provide sustainable interventions that can be replicated in other locations to increase their socioeconomic impacts. The initiative promotes the uptake of new technologies and improved inputs by young farmers and encourages widespread replication on neighboring farms. Market uptake assures sustainability and replication. The project encourages lead firms to invest in outreach strategies and knowledge transfer to farmers by contributing to demonstration plots, farmer training, and establishing rural channels of distribution for their products (all of which contributes to local economic growth). Utilization of such technologies have reduced the cost of production significantly and improved productivity, resulting in net income growth of more than 246% to date.

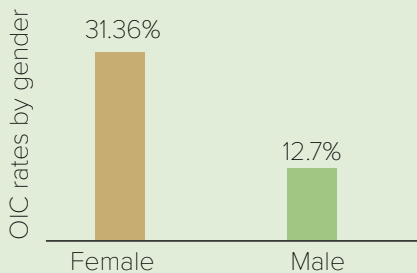
**Table 10.1: Comparative analysis of project impact: District of Dhamar Governorate, Yemen**

Indicators	Unsupported Farmers (Control group)	Supported Farmers (Treatment group)
Costs	YER 677,500	YER 503,856 (34% saving)
Sales	YER 570,000	YER 1,746,000 (206% Sales increase)
Profits/Loss	15% Loss	Profits: 246% increase



## Women Youth are More Disadvantaged in Rural Development

Youth are more likely to be among the working poor than adults. They are at higher risk of unemployment, underemployment, or working in jobs with low earnings. Nevertheless, youth are not a homogeneous group. Within their ranks, there are groups that are highly vulnerable and subject to social exclusion, such as women. As the figure below reveals, the un- or under-employment rate for young women in IsDB member countries, at 31.4%, is more than double that of young men (12.2%). Another vulnerable group that is subject to exclusion is youth living in rural areas. The proportion of IsDB member country populations



### Youth unemployment in IsDB member countries

Source: SESRIC, 2017

living in rural areas is 45.9% and, because they are in rural areas, they experience higher levels of poverty, and lower access to: technology and telecommunication infrastructure, education opportunities, and the labor market. The high percentage of youth in rural areas makes the agriculture sector relevant in addressing the question of how to engage them in agriculture and tap into their energy and creativity in IsDB member countries.

In addition, bridging the gap between men and women in agriculture and rural labor markets is critical. An economic system that utilizes half of its people cannot achieve its full potential. To unlock the socioeconomic potential of rural women, there are several gaps that need to be addressed – low productivity and low wages, lack of social protection, lack of awareness of essential labor rights, and an inability to be heard and represented.

- Adaptive and innovative solutions are needed to overcome the challenges posed in a fragile conflict environment. Operating in crisis situations can cause significant slowdowns in project implementation. The YES Yemen project has taken steps to maintain at least some level of ongoing activity, including: 1) the posting of staff to safer locations (branches); 2) reducing reliance on fuel and transportation; 3) closing branches briefly whenever the security situation deteriorates; 4) working from home when possible and leveraging internet connectivity. For example, an online training course using Skype was conducted in Wadi Hadramaut with 58 Youth Agriculture Engineers. Furthermore, branch offices reported on the level of conflict in their respective districts, which revealed that while 74 of Yemen's 333 districts are currently difficult to access due to the war, it was still possible to operate safely in the remaining 259.
- In addition, the project has been a source of social cohesion between local host community farmers and internally displaced people (IDPs). In 2016, to improve social cohesion between host communities and IDPs, the project supported farmers in IDP-host communities and offered IDPs training and cash for supporting rural services, such as installing drip-irrigation systems, harvesting, and tending seedlings. For instance, in Abyan, 50% of the farmers were IDPs. Overall, 20% of all youth farmers supported and 50% of the project consultants were IDPs. Nevertheless, through the program, combatants exchanged their rifles for productive assets, and training for a better livelihood. In some cases, the provision of training reduced conflict as youth traded weapons for agricultural inputs (Islamic Development Bank, 2016).

These IsDB case studies demonstrate how agripreneurship and the reputation and appeal of agriculture is changing for youth – young people, farmers, entrepreneurs, and the public sector are realizing that agriculture can be the answer to some of the member countries' most pressing social and economic challenges. Supporting inclusive interventions through value chain financing, leveraging technology and market uptake to connect, to sustain and to maximize the breadth of the intended socioeconomic impacts.



### Case Study: Agripreneurship Incubator – the Agricultural Entrepreneurship Development Project in Senegal

IsDB has also invested in agripreneurship incubators, such as the Entrepreneurship Development Project in Senegal, a country where the youth unemployment rate is over 19% according to Senegal's *Agence Nationale de la Statistique et de la Démographie* (ANSD, 2017). The unemployment rate for people aged 15 and over is estimated at 10.8%. This phenomenon is slightly more noticeable in urban areas where 13.8% of the active population are unemployed compared to 7.6% in rural areas. By gender, unemployment affects women more (16.5%) than men (5.9%). A breakdown of the unemployed population by age group shows that it affects more young

people. The highest rates are observed among young people aged 20-24 years and 25-29 years, 19.5% and 17.5%, respectively. The phenomenon affects the other age groups to a lesser degree. In fact, the unemployment rate for people aged 35-64 is estimated at 6.8% (ANSD). In addition, Senegal is confronted with the challenges of low productivity in the agriculture sector and major deficiencies in infrastructure and poverty reduction.

In support of the Government of Senegal, IsDB is investing EUR 72.86 million to finance the PRODAC project, which will develop entrepreneurial skills through agripreneurship incubation centers, generate significant rural employment, increase rural incomes, and attract youth to rural business in an unprecedented way.

The project will enable Senegal to create over 30,000 jobs within 5 years of project



**The Entrepreneurship Development Project in Senegal, where the youth unemployment rate is over 19%, will help to create over 30,000 jobs within 5 years of project completion**





**More than 100 delegates gathered in 2017 at a high-level seminar on the of IsDB's 42<sup>nd</sup> Annual Meeting in Jeddah, Saudi Arabia, to discuss approaches to making agriculture more attractive to youth**

completion, create 348 Agriculture Entrepreneurs' Groups, train over 30,000 entrepreneurs in production and business management, and enable more than 90,000 rural youth from incubation centers to set up their own farming businesses, generating still more employment. Senegal will produce 167,400 MT of agricultural products (cereals and horticultural products), 29,250 MT of livestock product (meat), and 6,000 MT of fish as the result of this investment.

### **IsDB's Advocacy and Partnership for the Sector**

In 2017 during the IsDG 42<sup>nd</sup> Annual Meeting, a special seminar was held on "*Youth engagement in agriculture production: Developing technologies that appeal to youth to make farming an attractive career option*". More than 100 delegates from various countries gathered together, including policy

makers, researchers, academia, civil society and the private sector. The seminar focused on the role of young farmers in boosting agricultural productivity to achieve food security in IsDB member countries; exploring the agricultural production technologies that have high impact on improving the livelihood of farmers, especially in marginal environments.

Participants agreed that the focus should be on resource-efficient technologies that work for young people and make agriculture a viable source of income. Moreover, policymakers and other experts urged more youth engagement in agriculture to fight unemployment and food insecurity. In addition, the seminar provided a good platform to raise awareness about the efforts of IsDB and significance of establishing partnerships to support farmers in the field with enhanced technologies and to build their

capacities.

### ***IsDB's Partnership for Innovation***

**Promotion:** A recent example of partnerships to promote innovation was in collaboration with King Abdullah University of Science and Technology (KAUST), where a STEAM Innovation Challenge workshop was organized at IsDB headquarters in Jeddah. The STEAM workshop, which stands for science, technology, engineering, arts and mathematics, was designed to support students in creating solutions to solve local, regional and global problems. A total of 120 students from seven universities from the western region of the Kingdom of Saudi Arabia participated in the competition. Students worked for two days to address issues related to food waste around the world, and the impacts of climate change on farming.

The top three teams received cash prizes and presented their ideas at the IsDB's annual meeting. In addition, they were offered internships to continue working on their ideas with close mentoring support from Bank staff. However, IsDB should further invest in and leverage the outcomes of this innovative platform. In so doing, it would take an important step towards creating the suitable ecosystem to incubate such ideas and bring them to reality by effectively scaling it up through IsDB's network of donor communities and field partners.



**IsDB, in partnership with KAUST, promoting entrepreneurship and innovation at a STEAM Challenge event**

### **Lessons Learned**

- The case studies in this chapter and a related one in Chapter 9 demonstrate how agripreneurship and the reputation and appeal of agriculture is changing for youth – young people, farmers, entrepreneurs, and the public sector are realizing that agriculture can be the answer to some of their country's biggest social and economic challenges.
- Supporting inclusive interventions through value chain financing, leveraging technology, and market uptake are critical to connecting, sustaining and maximizing the breadth of the intended socioeconomic impacts of agricultural investments intended to grow youth employment.
- Youth employment programs that include social safety nets can be effective mechanism for fostering social cohesion among communities and youth that have been internally displaced in fragile states.

- Youth mentorship programs can be effective mechanisms for identifying and nurturing agripreneurs; advocacy and institutional support is essential to bring the talents identified to maturity.

## Conclusion

There is no one-size-fits-all solution or approach to youth unemployment. Nevertheless, agriculture can play a significant role in addressing youth unemployment around the world. The Bank will work with member countries to enable a new generation that embraces innovation, technology, and marketplace relationships to produce and process higher-value agricultural goods and, ultimately, generate better incomes for themselves and their families.

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## Chapter 11

# Achieving Impact Through Innovative Partnerships

Bashir Jama<sup>1</sup>, Md. Shahid Parwez<sup>2</sup>, Nur Abdi<sup>3</sup> and Biola Badmos<sup>4</sup>

### Key Messages

- IsDB aims to mobilize and leverage greater internal and external resources, both through existing and new pioneering partnerships.
- To achieve success, partnerships are needed on all four levels of operation: global, regional, national, and local (the beneficiaries).
- Building on the accomplishments of partners' programs (both past and ongoing) can increase coverage, bring new technologies and innovations to bear, and accelerate implementation for impact.

### Introduction

IsDB places great emphasis in its mission statement on “...being the leader in fostering socioeconomic development in member countries and Muslim communities in non-member countries”. This is essential. About 300 million people in the Muslim world live in deep poverty – roughly one-third of the global total – and if their lives and livelihoods are to be transformed, IsDB must lead the way. The strategies derived from the Bank's mission, including its 10-year-strategy (2015-2025), further underscore the need to embrace and build strategic partnerships across all economic sectors and with the public, private, and civil society organizations that influence them. Good partnerships, especially when both the public and private sectors are engaged, can be effective accelerators of sustainable development (FAO, 2016). They drive syner-

gies, leverage resources and minimize the duplication of effort.

Towards forging strategic partnerships, IsDB pioneered several strategic engagements from the formative stages of the Bank and has grown them in innovative ways more recently. The partnership drive is anchored on four inter-linked objectives:

- Increasing the scope and coverage of the Bank's reach, that is, increase the number of beneficiaries by expanding the scale of interventions into wider geographies while deepening their content;
- Enhancing the sustainability of positive impacts well beyond the life of the projects;
- Propagating innovative solutions to difficult challenges; and
- Generating, documenting and globally disseminating knowledge gained in the form of good practices.

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**Smallholder farmers being trained on good agriculture practices in Comoros – an FAO- and IsDB-supported project**

IsDB's journey to build strategic partnerships in its ARD sector began a long time ago. Since the establishment of IsDB in 1975, it has initiated more than 90 partnership/cooperation agreements with international and regional development organizations. Among them are the Food and Agricultural Organization (FAO) and International Fund for Agricultural Development (IFAD) of the United Nations, as well as various notable research centers belonging to the Consultative Group on International Agricultural Research Centers (CGIAR). The Bank has leveraged those partnerships to support its member countries. For instance, it joined with the FAO in the wake of the global food crisis in 2010 to help its least developed member countries in sub-Saharan Africa (SSA) and East Asia to ramp up their staple crop production capacity. The Bank

provided the financial support and FAO deployed technical assistance packages to smallholder farmers that included seed of improved varieties, fertilizers and good agricultural practices.

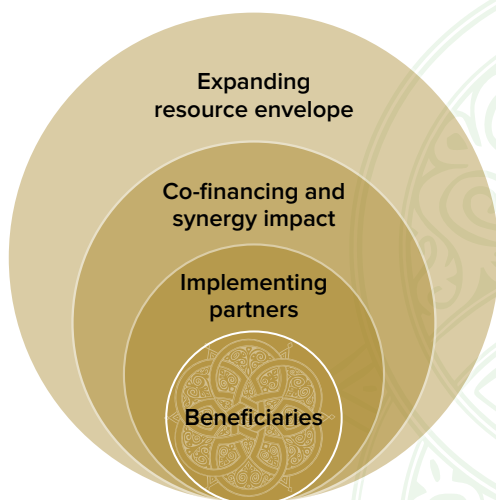
This chapter examines the Group's partnerships for impact through the three lenses derived from IsDB's agriculture sector strategy (see Chapter 1). Case studies are used to highlight the purpose of the partnerships and their outcomes. The chapter is divided into three parts. The first highlights the typologies of strategic partnerships at different levels (global, regional, and national or local). The second is about knowledge generation and dissemination. The final section highlights key lessons learned and provides recommendations as to the way forward that could improve performance and enhance impacts.

## Typologies of Partnerships Deployed

IsDB's partnership model (Figure 11.1) is based on overlapping and interconnected sets of key stakeholders that provide complementary functions. It takes a value chain approach with outcomes in mind from the outset.

At the outer level are global financial institutions that provide additional financial resources to increase the scope of coverage. These global partners include the multilateral development banks (MDBs), governments, bilateral development agencies, and philanthropic organizations, among others.

The second layer includes partners that collaborate to expand the resource envelop but also to enhance synergies and minimize the duplication of effort with programs and projects they finance in the same or nearby geographic locations.



**Figure 11.1: Interdependent layers of partnership**

The third group assists with the implementation of projects, and especially in bringing on board innovations and expertise that could enhance impacts. This group includes international research and development organizations, non-governmental organizations (NGOs), and private sector entities that drive the input and output markets of major value chains, and hence improve sustainability of successful projects beyond the donor funding period.

The fourth group are the beneficiaries, and includes farmers and producers as well as their associations, agricultural enterprises (both small and large), and national institutions. A key activity here is building the capacity of national institutions to innovate and adapt solutions to prevailing national and local socio-economic conditions.

The generation and dissemination of relevant knowledge is a major goal of the Bank that cuts across all programs and projects. It occurs through extensive and intensive engagement between and among all the different categories of development partners.

The deployment of the different typologies of partners have helped advance the core objectives the IsDB Group's strategic partnerships. This is illustrated here by way of a few case studies and/or programs under each category.

## Global Partnerships: Increasing the Resource Envelope

An innovative example here is the Lives and livelihood (LLF) initiative: this is a USD 2.5 billion fund that IsDB launched in 2012 in partnership with several donors: the Islamic Solidarity Fund for Development (ISFD) of the IsDB Group; The Bill & Melinda Gates Foundation (BMGF); the King Salman Humanitarian Aid and Relief Center (KSRelief) of the Kingdom of Saudi Arabia; the governments of the United Arab Emirates (UAE); and the Qatar Development Fund.

The LLF provides affordable financing for the 30 least wealthy member countries. The agriculture sector is key focus, along with health and rural infrastructure. Project design is informed by the true needs and priorities of the participating countries, is results-oriented, and is fairly ready for implementation upon approval. The process encourages all key partners to enrich the design of projects with thoughtful inputs, and to help ensure that core investments achieve the desired impacts and generate results that can be replicated elsewhere. A total of four projects and one regional program were funded by the end of December 2017 in seven of the Bank's member countries (Burkina Faso, Cameroon, Mali, Morocco, Nigeria, Senegal, and Uganda). These projects are expected to improve food security and raise the standards of living of millions of people in rural areas by providing safe drinking water, improved infrastructure, and employment opportunities in agriculture.

## Regional Partnerships: Deepening Impact and Bringing Innovations on Board

Several programs illustrate innovations in their design and implementation due to the nature of partners brought on board. A good example here is a major program with the World Bank that began in 2015. In October of that year, the IsDB Group and the World Bank Group signed a Strategic Partnership Framework (SPF) called '*Deep Dive*' to scale up joint work and investment across IsDB member countries. Under the SPF, co-financing activities were identified worth USD 9 billion to be realized over the period of 2016-2018 and covering a wide range of sectors including agriculture, water, energy, urban infrastructure, and building the resilience of fragile states. The ensuing interventions under the SPF initiative have supported, inter alia, water and food security. By the end of 2017, projects amounting to USD 1.6 billion had been approved.

The Framework allowed IsDB to dovetail two major regional projects on investments by IsDB and the World Bank: Smallholder Agricultural Productivity Enhancement Program (SAPEP) in Program (WAAPP), financed by the World Bank. The first is highlighted in Chapter 4 and involves five West African countries (Benin, Burkina Faso, Cameroon, Mali and Niger). The connectivity between the two investments allowed continuity in building the delivery capacity of local institutions and their ability to sustain the impacts gained. It also brought on board new partners that addressed additional needs. For instance, the International Fertilizer Development



Center (IFDC) was brought in to help the SAPEP countries roll out input and output markets that enhance farmers' ability to improve the fertility of their soils.

Increasingly, our partnership efforts in this area of deepening impact is also going after organizations that can increase access to markets, both national and regional, for smallholder farmers. To this end, IsDB will particularly seek out private sector partners and work with member countries to provide the necessary enabling environments for them to thrive, expand their scope, and deepen market penetration through inclusive value chains.

### Science, Technology and Innovation Partners

The IsDB Group is working to strengthen its links to science and research centers of excellence. Examples here include the International Centre for Biosaline Agriculture (ICBA) and King Abdullah University of Science and Technology

(KAUST). The Bank is a founding member of ICBA in 1999 and has been funding it since then. ICBA is striving to emerge as a 'knowledge hub' on sustainable agricultural production in marginal and saline environments.

The partnership with ICBA has, for instance, helped promote low-cost and water-efficient irrigation technologies that can be adopted at large scale by smallholder farmers. An example of this is the 'Californian' irrigation system that is financed by the OPEC Fund for International Development and with core funding by IsDB. The system is a low cost one that is appropriate for smallholder farmers and that ICBA demonstrated in rural villages of Burkina Faso (Qureshi and Ismail, 2016). The technology is becoming popular among smallholder farmers in the country because of its positive returns to investment.

The next step is to bring the use of this promising innovation to many more farmers in the four countries where it is

### A 'Californian' Irrigation System Success Story

Mr. Djiby Mbaye, from Senegal, was one of the beneficiaries of the ICBA project. The 'Californian' irrigation system was installed on 0.5 hectares in Mbayène village. Mr. Mbaye harvested 11.6 MT/ha of onion, which gave him an income of over FCFA 1 million (USD 2,000). Unfortunately, his other crops could not yield nearly as well because of lack of irrigation water. Since the 'Californian' system uses small pumps and a storage facility, it reduces the risk of crop failure during periods of water shortage. Realizing the benefits of this system, Mr. Mbaye decided to use a part of his onion income to install a new 'Californian' system that will irrigate 0.8 hectares of his land. Mr. Mbaye has received regular visits from farmers who want to learn more about the 'Californian' irrigation system and how they, too, can benefit from its introduction.



being introduced (Burkina Faso, Mali, Niger and Senegal) and indeed, to the rest of sub-Saharan Africa. This will include integrating solar panel systems in the pilot demonstrations to provide the energy required to pump the water. The scaled-up program now being planned will also include a microfinancing component so that farmers and small and

medium enterprises can increase their use of the technology.

ICBA has also helped create awareness on a wide range of innovations to improve the production of crops and livestock in dryland areas, especially those with saline water and soils. As a center of excellence in this area, ICBA participated in major knowledge-sharing forums sponsored by the Bank where its innovations were presented, and it will continue to do so going forward. ICBA is also an innovation partner on integrated drought management systems. This partnership is informed by the Centre's work in several IsDB countries in the Middle East and North Africa (MENA) region, SSA, and Asia. These projects have identified appropriate mechanisms and partnerships



**IsDB Group: Promoting the deployment of science, technology and innovation**



**Striga is a damaging parasitic weed with deceptively pretty pink flowers, seen here below a tall sorghum variety being grown by farmers in the Kaye region of Burkina Faso**

that can improve monitoring, assessing vulnerability and planning for drought. The knowledge emerging from this work will inform future IsDB Group investments aimed at helping its member countries move from crisis management to a proactive approach. This will increase the resilience of their farming communities to drought and climate change.

#### **KAUST: Important Innovation Partner**

This University, which is located on the outskirts of Jeddah, is partnering with the Bank to develop ways to build the resiliency of the agricultural sector in member countries. The partnership will bring into practical use several notable discoveries made at the University. This includes food crop varieties with higher tolerance to salinity and poor soils, with

initial promising work going on with wheat, barley and tomatoes. The partnership with KAUST has also enabled the deployment of its innovations in the control of Striga (commonly known as ‘witchweed’), which is considered one of the seven most severe biological constraints to modern day crop production, causing large yield losses in many crops, including maize, millet, sorghum and legumes, among others (Al-Babili and Boumeester, 2015). This is evident in the sorghum fields of one of the farmers of an IsDB-funded project in Burkina Faso. The partnership is designed to test innovative solutions developed by KAUST in farmers’ fields. The technology involves the use of synthetic strigolactone-analogues, which can be used to induce the so called ‘suicidal germination’ of Striga. The idea is

to trick the Striga plants into germinating at a time when host plants (such as sorghum) are not available to sustain the weed. Over time, this reduces the residual seed pool of the pest in affected fields (Al-Babili and Boumeester, 2015). KAUST and IsDB have initiated a training program involving African agricultural scientists and technicians that can adapt this Striga control measure to farmers' conditions.

### **National and Local Partners: Strengthening Implementation Capacity and Sustaining Impact**

This level forms the core of the partnership development strategy of IsDB. The focus is on three broad groups: national institutions, the private sector, and farmers (and their associations). At the national level, the aim is to address specific problems that limit the growth of the agricultural sector. There are several on the production side in our member countries, with access to improved seeds being a major one. This could, however, be addressed by partnerships that foster public and private sector engagement. Another constraint, that is especially common in Africa, is limited flow of information, particularly between research and extension services. This results in inadequate application of the best knowledge for decision making by producers (Toenniessen et al., 2008).

#### **National Institutions**

The Bangladesh Enhancing Quality Seed Supply Project (2011-2017) demonstrates how investing in national institutions can,

in partnership with the private sector, address seed supply challenges. A number of national agricultural research and development agencies of the government participated in the project, which contributed to the production of 34,000 MT of paddy rice foundation seed. This significantly increased the production of certified seed and farmers' access to them. The project was implemented by the Bangladesh Agricultural Development Corporation (BADC) which is an autonomous agency for seed production and distribution. The prime national agricultural research organizations such as Bangladesh Agricultural Research Institute (BARI) and Bangladesh Rice Research Institute (BRRRI) were also the implementing agencies for their respective components. The Seed Wing of the Ministry of Agriculture was responsible for coordinating and overseeing the overall implementation of the project on behalf of the government. The project also helped seed enterprises by organizing smallholders and identifying progressive farmers in each of the intervention areas willing to be converted into seed producers through training and access to microfinancing.

### **Strengthening Farmers' Associations: An Essential Partnership for Success at Scale**

One critical lesson from IsDB-financed projects is that the capacity of farmers and their organizations to manage production and associated risks (particularly climate- and market-related risks) is a major



**Apex Group Executive Committee meeting in site 5, Yobe State, NPFS, Nigeria**

success factor. For instance, a lesson from an IsDB investment in Nigeria (the National Program for Food Security), which was implemented over a period of 5 years, trained 515 groups. Women made up 32% of the membership of these groups. The farmer groups were trained in wide-ranging skills, from financial management, to good agricultural practices, to sound marketing. Some of these groups have today transformed into commercially viable enterprises, aggregating and processing crops produced by other smallholders in their villages (see Chapter 4). Because of the financial management skills and training provided by the project, the Federal Government of Nigeria provided a line of credit to help in scaling up production by the new enterprises.

### **Partnering for Technology and Innovation in Shaping Food Systems**

Emerging technologies driven by the fourth industrial revolution are disrupting many industries, bringing rapid and large-scale change. However, the food and agriculture sectors have been slow to harness the power of these technologies.

In an effort to encourage innovations, IsDB has established a USD 500 million Science, Technology and Innovation (STI) Fund. The initiative is focused on promoting scientific innovation in IsDB member countries and supporting the application of science-based innovations in development projects across key sectors, such as health, agriculture and education in order to achieve comprehensive and sustainable economic development.

While new technologies and innovations present significant opportunities to transform agricultural and food production systems. All key stakeholders, including the international community, development partners, national governments, the private sector and civil society organizations, need to engage in a holistic effort to achieve the objective of sustainable agriculture. This can be done by deepening existing partnerships, as well as creating new partnerships with potential stakeholders at global, regional, national and local levels.

### Lessons Learned

- Regional projects can be effective mechanisms for sharing innovations, especially across national boundaries, that can sustainably scale up development impacts.
- Maintaining strategic partnerships for impact requires a champion institution and cost sharing among the stakeholders to reinforce ownership.
- Creating platforms that enable effective engagement of national agricultural research organizations, private sector entities, and civil society is an important driver for scaling up the adoption of innovative solutions at the farmers level.
- Facilitating enterprise development around commodity value chains by organizing farmer groups and mobilizing farmers' cooperatives would provide a basis for sustaining the gains of improved technologies.

### Conclusion

The IsDB Group recognizes that it alone cannot solve or bring to bear the financial needs required to tackle the development challenges that its member countries are facing. Hence, development of strategic partnerships is a key policy for the Group. In doing so, it will better map the potential partners with which it could engage in a given country or countries. IsDB Group will be more pro-active and less *ad hoc* going forth.

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## Chapter 12

# Strengthening Capacity Through Solidarity-based Partnerships – The Case of Reverse Linkage

Riad Ahmed<sup>1</sup>, Ahmad Faruk Diken<sup>2</sup> and Muntasir Hamid Ahmed<sup>3</sup>



### Key Messages

- In recent years, IsDB has paid closer attention to enhancing technical cooperation in order to strengthen relations through solidarity-based partnerships, while meeting the capacity development needs of its member countries.
- ‘Reverse linkage’ is a results-oriented technical cooperation mechanism that enables both the provider and recipient countries to address development challenges over the long term.
- The reverse linkage mechanism helps to mobilize the wealth of knowledge, expertise and resources in IsDB member countries to meet development challenges and is already making a difference in the agriculture and food security sector.

### Introduction

In 2015, the world adopted the Sustainable Development Goals (SDGs), which represents the broadest attempt so far to tackle multiple development challenges, including persistent poverty, hunger and malnutrition. In order to leave no one behind by 2030 and achieve the SDGs, a concerted effort by all stakeholders and partners is needed. Capacity development is a critical success factor for governments and civil society stakeholders in mainstreaming SDGs into national and local development plans. It is also critical to the design, adoption and implementation of development strategies, monitoring

and evaluating frameworks, and to the translation of the new agenda into transformative action at the country level (Seth, 2016).

The Bank recognizes the importance of capacity development (CD) for the success of its development interventions. Since its inception in 1975, IsDB has used various methods to meet the CD needs of member countries. These include a wide range of tools and modalities, such as technical assistance (TA), the exchange of expertise, workshops, and on-the-job training, among others.

The current 10-Year Strategic Framework of the IsDB Group was developed after an assessment of the institution’s 40-year contribution to the socioeconomic

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development of its member countries. It charts a refined course of action, including a special focus on enhancing CD, that aims to achieve sustainable development outcomes by engaging with all development partners, including beneficiaries. Accordingly, CD is seen as a crosscutting theme that supports the fulfillment of IsDB's unique mandate and its core strengths and capabilities. The Bank's CD efforts build on the experience it has accumulated over the past four decades, and on its relative position and potential in the context of the evolving development landscape in member countries. Important changes are happening – in some cases very rapidly – in the economic and social infrastructure of these countries. The private sector is growing, there is more inclusive social development underway, cooperation between member countries is rising, and the Islamic finance sector is expanding. In the same spirit, CD is an integral part of IsDB's evolution from mainly a financier to a knowledge provider and an honest broker of development solutions to its member countries.

Moreover, the IsDB Group's 10-Year Strategic Framework highlights the need for IsDB to change gradually into both a development bank and a bank for developers and identifies a new business model that stresses the Bank's role as a catalyst for cooperation among developers at every step of the development cycle.

## **An Overview of Capacity Development at IsDB**

Over the years, the Bank has provided resources for capacity development through technical assistance initiatives (TAs). Examples here include the: Technical Cooperation Program (TCP), Science and Technology Program (STP), NGO program, Scholarship Program, Investment Promotion Technical Assistance Program (ITAP), Thiqah Business Forum, Trade Cooperation and Promotion Program (TCPP), and provision of advisory services and training seminars.

### **IsDB Technical Cooperation Program (TCP)**

As a promoter of South-South cooperation among its member countries and Muslim communities in non-member states, the Bank launched a dedicated TCP in 1983. This program was designed with the objectives to: 1) mobilize the technical capacity expertise and training capabilities of member countries for the purpose of fostering collaboration within them; 2) promote opportunities for exchanging experience and information, as well as appropriate technologies suited to the development needs of member countries; 3) alleviate the managerial, technical and institutional constraints, which retard project implementation and efficiency; and 4) intensify the matching of needs identified in member countries with capacities available in other member states and promote closer partnership among them.



**Figure 12.1: The 3-Es model of capacity development**

The TCP is based on a tripartite approach involving beneficiary countries/institutions, provider countries/institutions, and IsDB as a facilitator and/or connector, in addition to its role as financier. The modalities used for promoting and accomplishing program objectives include recruitment of experts, providing on-the-job training, and organizing knowledge-sharing events such as workshops and seminars.

Since the TCP began, USD 55.5 million has been allocated for operations, which covered a large number of sectors and sub-sectors in line with the needs of the member countries and the priorities of the Bank. The social sector (health and education) accounted for the largest share at USD 12.74 million (23%), followed by the finance sector at USD 11.75 million (21%); public administration work received USD 6.66 (12%) and agriculture was provided with USD 6.30 million (11%).

### Reverse Linkage: A New South-South Capacity Development Modality

The long-standing experience of the Bank in technical cooperation through the TCP produced valuable lessons, including:

- Member countries possess a wealth of knowledge and expertise that can be tapped to strengthen economic development; and
- Long-term engagements among member countries can produce more sustainable results and enduring partnerships.

These insights led the Bank to develop an improved technical cooperation modality that meets the capacity development needs of member countries in a sustainable and results-oriented manner. In 2013, the reverse linkage approach was added to the methods available to the TCP; it was piloted for several years before making it a standard capacity development tool.

Reverse linkage is defined as: *“a technical cooperation mechanism enabled by the IsDB whereby MCs and Muslim communities in non-Member Countries exchange their knowledge, expertise, technology and resources to develop their capacities and devise solutions for their autonomous development”* (Islamic Development Bank Reverse Linkage Policy, 2017).

The reverse linkage modality is in line with international South-South cooperation principles, including: respect of national sovereignty; national ownership and independence; equality; non-conditionality;



## Reverse Linkage: An Effective Win-Win Cooperation Tool

The reverse linkage approach to capacity development facilitates an exchange in which all sides win. The recipient country acquires new knowledge and expertise that it can plug into its socioeconomic development process. The provider strengthens its position through international exposure, enhances its network of developers and partners, and opens up new markets and opportunities. And the IsDB and its development partners are able to achieve their overall goal of supporting the development of member countries through an innovative and less-costly partnership model.

Another noteworthy benefit is the reduction in risks related to the technical aspects of a project. Since projects are designed by technical experts from a resource center that has proven expertise in a particular area, project quality at entry is ensured. This risk is further reduced by the fact that there are three sets of eyes reviewing and providing support during the project design stage, including the recipient country as well as the IsDB. Design flaws that might be overlooked by one group are likely to be picked up by another.

In addition, financial risks are reduced since commitment to the project comes from at least three stakeholders. Last but not least, joint funding under this sustainable and results-based approach enables partnership-based projects that would otherwise be very difficult to develop and implement.

non-interference in domestic affairs; and mutual benefit.

One of the most important features of reverse linkage is that, as an enhanced technical cooperation mechanism, its primary purpose is to bring together at least two countries to help one another resolve their development challenges through long-term engagement. This mechanism targets specific development results, rather than focusing on activities only.

### Promoting Reverse Linkages in Agriculture

Reverse linkage capacity development is an effective way to address impediments to agricultural development in member countries, a high priority for the Bank. By matching countries that have a strong technical know-how in agriculture with those who do not, the Bank plays the role of enabler and catalyst to facilitate strategic partnerships. Three examples of how reverse linkages work are presented here.

### Rice Production: A Reverse Linkage Project Between Suriname and Malaysia

Suriname, an IsDB member country in Latin America, has the potential to achieve self-sufficiency in rice production and develop better rice-based products that can be marketed domestically and internationally. However, the farmers in Suriname are constrained by the productivity of their rice varieties, which are adapted to specific soil types and production areas in the country. This problem is compounded by an acute lack of qualified rice breeders who are also knowledgeable about four other essential areas: monitoring soil fertility and degradation; integrated water management for rice cultivation; documentation of the rates and requirements of fertilizer usage; and systematic land-leveling management in rice growing areas.

On the other hand, Malaysia has strong rice breeding and production expertise, gained over the past 35 years by the Malaysian Agricultural Research and Development Institute (MARDI). The country has been able to release a number of rice varieties that are resistant to a damaging fungus called rice blast, and a serious insect pest called the brown plant hopper. Malaysia has pushed its rice yield up to an average of 7 MT/ha. This has been achieved, among other factors, through the production of a manual for rice cultivation, as well as the development of a technology package for planting rice on problem soils and evaluating rice quality.

As an enabler, IsDB stepped in to facilitate the transfer of knowledge and expertise from Malaysia to Suriname, and to help the latter in achieving and maintaining self-sufficiency in rice production and



**Malaysian experts on a field visit in Suriname during the Reverse Linkage Project for Rice Production**

increasing its exports of high-quality rice.

The strategic partnership forged between the two countries is a win-win relationship, where Suriname addresses a technical know-how challenge in the agriculture sector and Malaysia is able to showcase its technologies and expertise and open up new markets for its products.

### **Artificial Insemination: A Reverse Linkage Project Between the Kyrgyz Republic and Indonesia**

The Kyrgyz Republic, an IsDB member country in Central Asia, has a promising agriculture sector and large number of livestock. However, the sector contributes only 20% of the country's GDP, and livestock is responsible for more than half of that total. Given the prominent role of

livestock in agriculture, improving productivity could have a major impact on the country's overall prosperity. The livestock sector's poor productivity has several root causes. They include obsolete equipment, outdated technology, and inadequate financial support. Another big cause is the lack of staff skilled and trained in artificial insemination techniques. The challenge is, therefore, to strengthen the capacity needed to improve livestock productivity and overall development of the sector in the Kyrgyz Republic.

On the other hand, Indonesia has 30 years of experience in developing and improving the productivity and genetic quality of its own livestock sector. Singosari National Artificial Insemination Centre (SNAIC), which is the leading center in



**Indonesian experts delivering hands on training on artificial insemination to their counterparts from the Kyrgyz Republic during the Reverse Linkage Livestock Project**

Indonesia for livestock breeding, has been producing and distributing high-quality frozen livestock semen. It has helped farmers increase both the number of cattle they have and their productivity, with a resultant boost to their incomes.

Again, in its role as an enabler, the Bank stepped in to ensure the transfer of knowledge and expertise from Indonesia to the Kyrgyz Republic, so as to help the latter improve livestock production and productivity. This strategic partnership forged between the two countries is a win-win relationship, with the Kyrgyz Republic addressing a technical know-how challenge in the agriculture sector and Indonesia implementing its technologies in a new environment, thus improving their replicability. Displaying Indonesian livestock management knowledge and expertise in another country generates visibility, improving the country's reputation and opening new business opportunities.

### **Soil Fertility: A Reverse Linkage Project Between Cote d'Ivoire and Morocco**

In Cote D'Ivoire, a member country in West Africa, agriculture is providing employment to about two-thirds of the working population and accounts for about 35% of GDP. Côte d'Ivoire is the largest exporter in the world of cocoa (more than 40% of the global supply) and raw cashew nuts. Moreover, it is the largest African exporter of rubber, palm oil, bananas and pineapples. Despite the remarkable performance of its agriculture sector, the country is facing serious soil degradation

and soil fertility issues, which are leading to inefficient use of resources, including fertilizer and labor inputs, and reducing the resilience of food production systems to climate variability.

Morocco, on the other hand, has been identified as a provider of knowledge and expertise. The National Institute of Agricultural Research in Morocco (INRA) – which is a recipient of the IsDB Prize for Science and Technology – used its knowledge and expertise to help Cote d'Ivoire address its challenges.

In March 2014, IsDB signed an MoU with the Government of Morocco (through the Moroccan Agency for International Cooperation – AMCI) to capitalize on Moroccan development experience, knowledge and expertise to support other member countries. One of the areas of cooperation identified under this MoU and the Member Country Partnership Strategy (MCPS) for Morocco is agriculture and food security. In this context, a reverse linkage project was initiated between Cote d'Ivoire and Morocco, with the Bank again playing its part as a catalyst and enabler. The overall goal of the project is to support the Government of Côte d'Ivoire in its efforts to improve food security. More specifically, the project aims at increasing crop production and productivity in targeted areas. This will be achieved by: 1) the development and rollout of adapted techniques for mapping soil fertility; 2) the deployment of a comprehensive system for crop fertilization; and 3) awareness and dissemination activities to improve crop production and productivity.



**Caravans for awareness and sensitization in Cote D'Ivoire – fertilizer bags on display at an agricultural show**

## Lessons Learned

- The reverse linkage mechanism deployed by IsDB, through which member countries are able to help one another, can be an effective mechanism to fill gaps in the capacity needed to grow agriculture sectors.
- TCP's can be used in combination with the reverse linkage approach to target specific capacity needs that require specialized skills to improve agricultural value chains.
- The reverse linkage mechanism not only builds capacity but also strengthens relationships between member countries. An important next step in that direction will be to integrate the reverse linkage methodology into the design and implementation of country-specific and regional programs and projects. This will help to scale up the beneficial impacts of the approach.

## Conclusion

As IsDB repositions itself within the global community of development institutions, it is critically important to draw on the Bank's vast network of member countries and the many institutions that exist within them. This is clear from the IsDB Group's 10-Year Strategic Framework, and the overall aim of becoming a 'Bank for Developers'. Reverse linkage provides a now proven mechanism that permits the Bank to play the role of an enabler by: 1) using its knowledge of member countries to identify pressing needs, as well as potential providers of development solutions; and 2) establishing and sustaining linkages such that transformative and sustainable change in economic development can be achieved.

Given the immense capacity challenges that exist in member countries, and the proven effectiveness of the reverse linkage mechanism in overcoming them, the



approach should be scaled up in order to realize its true potential and achieve widespread and sustainable results. The decentralization of the Bank, through the launch of new regional hubs, coincides with the reverse linkage mechanism moving from its pilot phase to its mainstreaming phase. Placing additional people in the field will enable IsDB to work faster in establishing the connections between member countries and to closely follow up on program implementation.

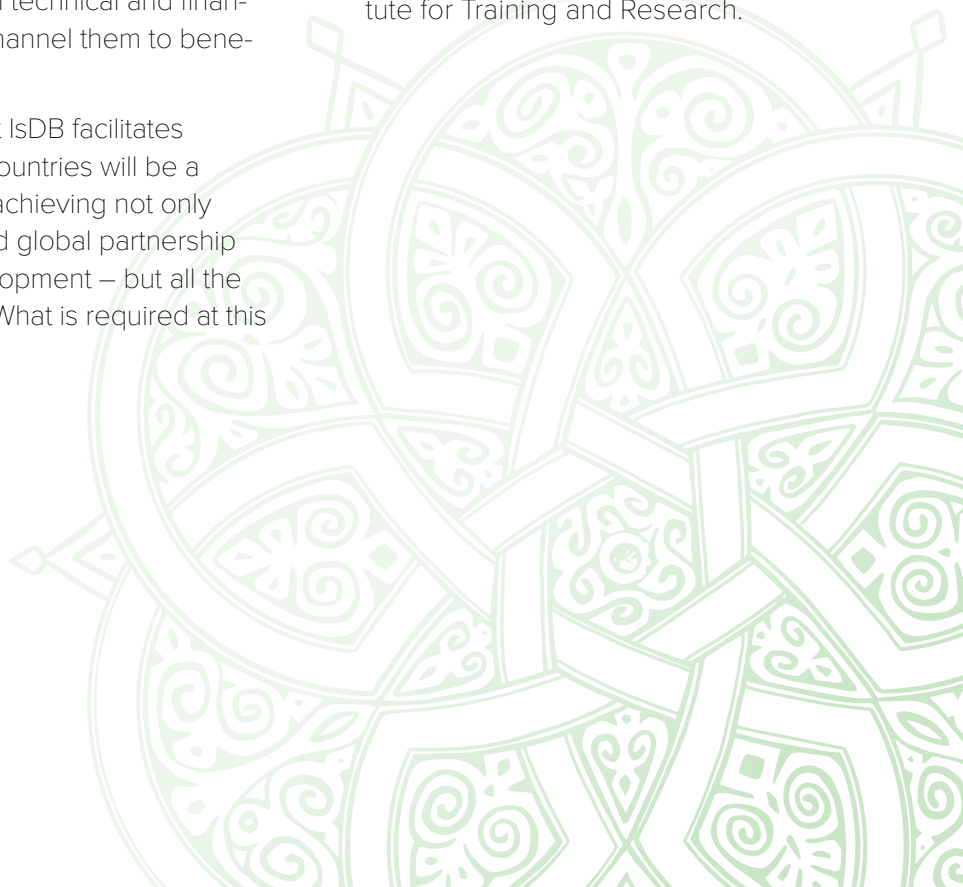
The proximity to clients will also mean that the Bank will be in a better position to gauge capacity needs, evaluate project performance on the ground real-time, and quickly learn lessons from implementation and adapt to new challenges. It will also enhance and accelerate the Bank's ability to mobilize additional technical and financial resources and channel them to beneficiaries.

The connections that IsDB facilitates among its member countries will be a major contributor to achieving not only SDG 17 – a revitalized global partnership for sustainable development – but all the other SDGs as well. What is required at this

stage is to scale-up the mainstreaming of the reverse linkage mechanism by ensuring that it is not just a stand-alone activity that happens as an afterthought, but one that is employed at the very early stages of project design and development. This will ensure that the right expertise from resource centers in member countries are linked to project formulation in an effective manner, influencing project design and quality-at-entry from the very beginning.

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## Chapter 13

# Learning from the Past to Inform Future Investments

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### Key messages

- IsDB Group investments in monitoring and evaluation in the past provide valuable lessons that will guide the Bank's future efforts to develop impactful projects. This will include ensuring IsDB Group synergies and the co-location of investments, as well as setting up mechanisms to strengthen the ability of national programs to establish comprehensive baselines and achievable targets.
- IsDB's support to its member countries will emphasize monitoring progress towards achieving the Sustainable Development Goals, especially SDG 2 ('Zero Hunger') and 17 ('Partnerships'), which are critical to sustaining impacts.
- To help strengthen the capacity of member countries in project monitoring and evaluations, IsDB will support them in bringing strategic partners on board, including international and regional centers of excellence that can help facilitate systematic monitoring to achieve desired outcomes.

### Introduction

Since its inception in 1975, IsDB has placed agriculture and rural development (ARD) high among its priorities in financing development in its member countries. In order to learn from Bank-financed projects in the ARD sector, the IsDB Operation and Evaluation Department (OED) has periodically undertaken independent assessments of the Bank's investments in member countries and in all sectors, including

agriculture and rural development. A major assessment was published in 2016 that examined investments made by the Bank between 1976-2014, with an overall goal of determining their relevance, effectiveness, efficiency, and sustainability (Group Operations Evaluation Department, 2016). The exercise also included relevant comparisons with lessons learned from other Multilateral Development Banks (MDBs) and took stock of the best practices in the field.

As we move towards meeting the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, and in particular SDG 2

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(‘Zero Hunger’), a coordinated effort is required in monitoring results at the global level. In this regard, building effective partnerships with other Multilateral Development Banks (MDBs) will be key for project implementation and the monitoring of results. Such partners will include the World Bank, the African Development Bank (AfDB), the Asian Development Bank (ADB), and other development entities, including specialized agencies of the United Nations such as the International Fund for Agricultural Development (IFAD).

SDG 2 is about ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture by 2030. Among the great challenges the world faces relative to this goal is how to ensure that a growing global population – projected to rise to as high as 10 billion by 2050 – has enough quality food to meet nutritional needs for a healthy life (Food and Agriculture Organization of the United Nations, 2017). Currently, 815 million people are chronically undernourished. They live mainly in 54 low-income, food-deficit countries (LIFDCs), and more than half of those nations (28 of them) are IsDB members. Many of these countries are in sub-Saharan Africa where the problem of nutritional insecurity is widespread. In fact, one in three children under the age of five are stunted due to poor nutrition (FAO, 2017). While the prevalence of undernourishment has declined in IsDB member countries – from 23.6% in the early 1990s to 14.8% by 2016 – the undernourished people living in member countries still comprise an estimated 20.8%

of the global total (Organization for Islamic Cooperation, 2016).

This chapter provides a synopsis of results achieved in the ARD sector of the Bank over the past four decades and discusses how to move forward with mainstreaming the SDGs. This is done through the lens of the 1976-2014 evaluation of IsDB projects. The importance of monitoring results is highlighted, and some important lessons are noted that should guide activities moving towards achieving the SDGs.

### **Reflections on the Past**

A synopsis of the Bank’s recent evaluation reports is provided here, covering: Post-Project Evaluation Reports (PPERs) for 64 Bank-financed Agricultural Rural Development (ARD) projects in 25 member countries; related Project Completion Report Evaluation Notes; Project Appraisal Reports (ARs); and Country Assistance Evaluation (CAE) Reports. The synopsis also benefited from a review of IsDB policy documents, as well as other relevant sector studies prepared by the Bank or other MDBs and technical institutions (such as IFAD and FAO). Other important sources of information for the synopsis included substantive discussions held with staff from the Operations Complex of the Bank and, of course, project implementation partners from member countries.

The effects of the IsDB interventions were measured through the analysis of ARD outputs and outcomes but stops short of being a full impact assessment due to data limitations. Therefore, the formal

comprehensive measurement of impact is beyond the scope of the evaluations referenced here, most importantly because of the measurement and methodological obstacles noted above. Instead, prior evaluation findings are limited to assessing the likelihood of positive outcomes from IsDB interventions.

### **Key Outcomes – Performance Assessment and Achievement of Operational Targets**

**Relevance** –The objectives of the agriculture and rural development projects were found to be relevant to IsDB member countries’ development goals and aspirations in growing their agriculture sectors. The projects also supported IsDB’s vision for improving the socioeconomic conditions of populations in member countries. The majority of the projects were found to have suitable designs and to be appropriate in scope to meet their intended objectives.

**Effectiveness** – The majority of the evaluated projects achieved their expected outputs. There is sufficient evidence to conclude that agriculture and rural development projects have made significant contributions to advancing the development agendas of member countries through: 1) improving livelihoods of communities (food, water and social services); 2) boosting crop and livestock productivity; 3) increasing the incomes of farmers and rural households; 4) enhancing food security; and 5) reducing rural poverty. Most of the evaluated projects also delivered benefits to local populations by

providing them with basic socioeconomic services, such as rural roads and access to potable water and good quality food. For example, rice yields doubled in Bangladesh, from 2.5 to 5 MT/ha, and IsDB-financed projects increased annual food crops production by 369,419 MT in member countries. Together, Azerbaijan, Mali, and Burkina Faso, increased annual cotton production was by 569,700 MT (Islamic Development Bank, 2016).

**Efficiency** – Overall, the IsDB independent evaluation process has underscored the need to increase project supervision to enhance impacts. Although there is considerable variation across regions and countries, projects in general took long time to complete, often because



they started late (Islamic Development Bank, 2016). Such problems, which often include cost overruns, are not uncommon in development programs and projects (Ahsan & Gunawan, 2010). There are many reasons for the delays, but three main factors stand out. First, there can be a mismatch between a project's scope and planned activities relative to the recommended implementation period, resulting in a need to reformulate the project and make changes to its scope and design. Second, limited country capacity contributed to delays in project implementation, as did inadequate coordination among different implementation parties, delays in project initiation, and the timely availability of counterpart funds. Third, delays resulted from a limited IsDB field presence to properly provide technical and procurement backstopping to the national project teams. It is these challenges, among others, that inform IsDB's 10-Year Strategy, which features decentralization and getting physically closer to project locations.

**Sustainability** – The assessment showed that following their completion, the evaluated projects relied mainly on member country government support to sustain project achievements. Going forward, and as an explicit part of the 10-year Strategy, emphasis will be given to engaging with local communities, as well as private sector and civil

society stakeholders, to ensure project sustainability once the funding ends. Despite sustainability challenges, feedback received from beneficiary communities in member countries indicates that the completed ARD projects produced positive impacts. They changed the livelihoods of local communities, enhanced farming techniques, increased incomes, and helped to improve the quality of life. The projects strengthened the rural socioeconomic infrastructure by building roads, improving market facilities, and making drinking water more readily available. Local farmers' associations were strengthened, and partnerships were forged with various stakeholders who are vital to sustaining project impacts when the funding stops.

Overall, the 64 evaluated projects were classified as successful to partially successful (IsDB, 2016), using global best practices and tools for sound monitoring and evaluation of development projects (United Nations Development Programme, 2009).

The evaluations also provided insights that will improve overall outcomes from future projects, including the need to strengthen the monitoring and evaluation capacity of project teams. Stronger M&E will require establishing appropriate baselines and identifying targets and indicators of success that can be used to track progress and measure impacts within the timeframe of each project.



## Looking Forward

Agricultural production will have to increase by an estimated 50% by 2050 to meet the needs of a growing global population (FAO, 2017). This is underscored by the pivotal impact that food security has on achieving the other SDGs, including eradicating poverty (SDG 1), achieving zero hunger (SDG 2), improving health (SDG 3), and creating jobs (SDG 8). These interlinkages are critical to achieving the SDGs. The same was true for their precursors, the Millennium Development Goals (MDGs), which included targets that many developing countries fell short of achieving. Fortunately, IsDB member countries are now committed to growing their agriculture sectors and are investing in integrated solutions to address many relevant challenges. Prominent among these are the need to raise the productivity and incomes of small-scale food producers, to build the resiliency of food systems, and to maintain biodiversity and

the sustainable use of genetic resources. Increasing scarcity of water, declining soil health, and more frequent and severe weather events caused by climate change present many member countries with additional problems.

IsDB has made significant investments to help member countries grow their agriculture sectors and make progress towards achieving agriculture and rural development-related SDGs. IsDB's investments in agriculture have been growing rapidly, with much of that growth coming after the 2008 global food crisis (as noted in Chapters 1 and 2). A key feature of the integrated programs rolled out is the investment in strengthening the capacity of local (farm-level) and national institutions to manage Bank-funded projects for results, including monitoring progress towards achieving SDGs linked to agriculture and rural development.

## Lessons Learned

The Bank needs to internalize a number of key lessons in order to ensure successful implementation of future ARD projects, and to help member countries move towards achieving the SDGs as well as the objectives laid out in the IsDB Group's 10-year Strategy. Among them:

- Co-financing opportunities can be transformed into effective partnerships with other development partners and private sector entities. IsDB is not the sole player in financing agriculture and rural development projects in member countries. Other partners, such as IFAD, the World Bank, ADB, AfDB and increasingly the private sector, are also engaged with member countries, sometimes in the same locations. Opportunities offered by co-financing arrangements with such partners should be nurtured and included in relevant project M&E processes.
- Co-location of IsDB Group development interventions creates synergies in member countries. It is important to generate opportunities for country-level co-location of investments by IsDB Group entities to maximize inputs and outputs that lead to more significant outcomes and impacts. While complex to implement and monitor, this is the pathway to achieving sustainable and impactful changes.

- Monitoring and evaluation are essential for ensuring the availability of timely high-quality data for reporting project results. The expectation that past IsDB projects would lift agricultural productivity and create value addition opportunities to improve economic wellbeing and reduce poverty in beneficiary communities could not be easily verified due to insufficient investment, both in monitoring and evaluation, and in the establishment of robust data systems. Strong M&E systems that would track the outcomes over time were not included in the design, implementation or operation of most projects. In the future, IsDB will pay particular attention to establishing rigorous monitoring and evaluation systems and build local M&E capacity.

## Conclusion

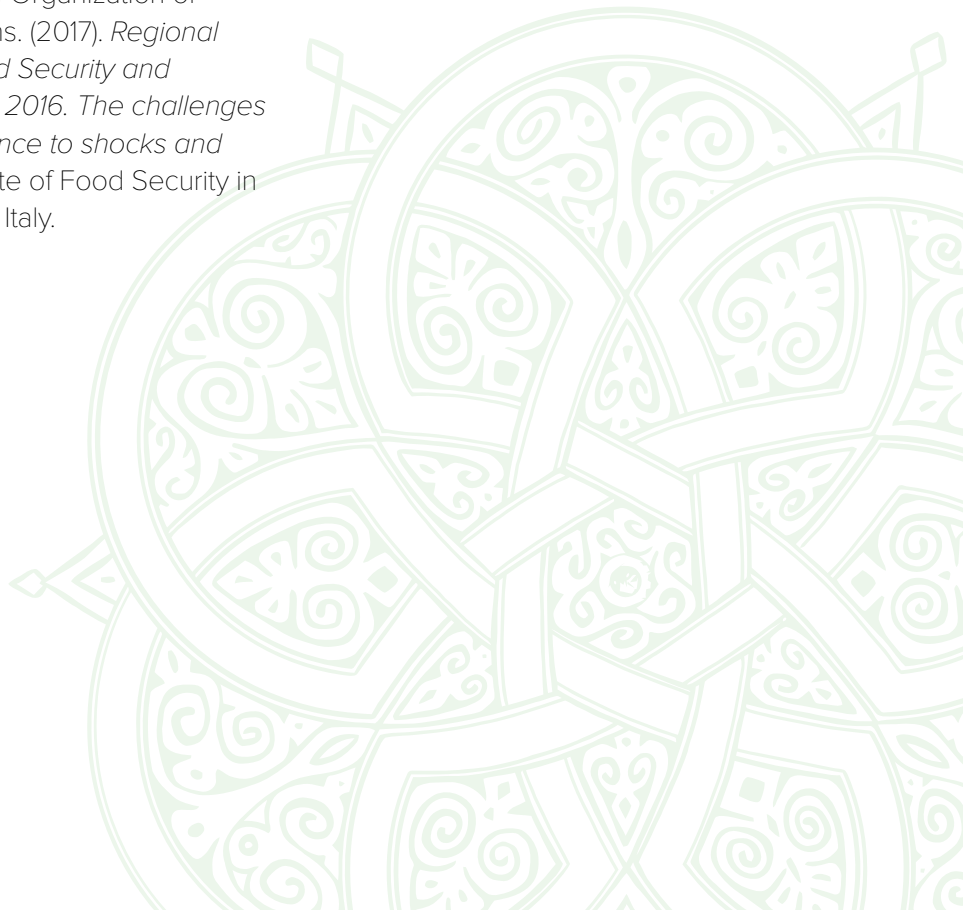
The agriculture and rural development sector remains a critically important driver of economic prosperity and improving human development in IsDB member countries. Going forward, synergies between the IsDB Group's various interventions will be critical for achieving desired impacts and more effectively assisting member countries in their efforts to achieve the SDGs. What is needed next is to strengthen the ability of national teams to monitor (in real time) the progress being made by IsDB-financed projects and programs, and to track movement towards achieving the SDGs. This will require support from technical partners



that can make multiple contributions – establish robust databases, deploy modern information and communication technologies, strengthen the analytical skills of national teams, and bring on board other development partners (including private sector entities) that can expand the scope of ARD interventions and help sustain their impacts. This is the transformative pathway to which IsDB commits itself going forward.

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