Toward Productive, Inclusive, and Sustainable Farms and Agribusiness Firms

An Evaluation of the World Bank Group's Support for the Development of Agrifood Economies (2010–20)

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Abbreviations

ASA	advisory services and analytics
CPF	Country Partnership Framework
CPSD	Country Private Sector Diagnostic
E&S	environmental and social
FCS	fragile and conflict-affected situations
FY	fiscal year
IAPP	Integrated Agricultural Productivity Project
IDA	International Development Association
IEG	Independent Evaluation Group
IFC	International Finance Corporation
KPI	key performance indicator
LIC	low-income country
LMIC	lower-middle-income country
MAS	Manufacturing, Agribusiness, and Services
MIGA	Multilateral Investment Guarantee Agency
RAROC	risk-adjusted return on capital
SDG	Sustainable Development Goal
SME	small and medium enterprise
UMIC	upper-middle-income country

All dollar amounts are US dollars unless otherwise indicated.

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Extended team members included Aditya Balu (consultant), Amanda Aniston (consultant), April Connelly (senior evaluation officer), Ebru Karamete (evaluation analyst), Joao Claudio Rocha Baeta Leal (consultant), Joy Kaarina Butscher (evaluation officer), Songporne Tongruksawattana (consultant), and Hailemariam Teklewold (consultant). In addition, Alexandra Christina Horst (evaluation officer) and Joachim Vandercasteelen (young professional) contributed to the evaluation at the initial stages through the Approach Paper and the Portfolio Review and Analysis, and by conducting case studies and cross-case analysis. Hiroyuki Hatashima (senior evaluation officer) served as co-task team leader during the preparation of the Approach Paper and helped define the private sector–related issues for the evaluation.

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professor in bioeconomics, University of KU Leuven, Belgium. A second structured literature review, "Effectiveness of Agricultural Development Interventions to Stimulate More Productive, Inclusive, and Sustainable Agri-Food Systems—Lessons and Success Factors," was prepared by David Wuepper, lecturer and postdoctoral researcher, Agricultural Economics and Policy Group, ETH Zürich, Switzerland.

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Overview

Agrifood system development increases productivity, inclusion, sustainability, and nutrition, in turn contributing to reducing hunger and poverty and to improving shared prosperity. The agrifood system comprises the actors engaged in agriculture and the related food industry and services, the activities they perform, and the enabling environment (policies, standards, and investments) that shapes its dynamic development. In low-income countries (LICs), the agrifood system accounts for more than 30 percent of gross domestic product and about 70 percent of all jobs; in middle-income countries, it accounts for more than 15 percent of gross domestic product and about 30 percent of all jobs.

Agrifood systems face several challenges that put inclusive growth and sustainable development at risk. Weak market links, fragmentation of production, and insufficient market integration of various actors contribute to low productivity and lead to low incomes and precarious living conditions for smallholders and small producers, especially in LICs. LICs' high reliance on production of low-value commodities for local markets also limits their potential to respond to the growing global demand for higher-value products (for example, fruits and vegetables). Current agrifood systems also face the challenge of—and contribute to—climate change: the agrifood sector is responsible for more than one-quarter of global greenhouse gas emissions, accounts for 70 percent of all water use, and is a major source of biodiversity loss and environmental degradation. Yet climate change is projected to cut agricultural production, especially in the most food-insecure regions (Jägermeyr, Müller, and Ruane 2021; World Bank 2010). The convergence of climate change, the coronavirus pandemic, and conflict exacerbate the challenges that agrifood systems are facing.

The purpose of the evaluation is to assess how relevant and effective the World Bank Group has been in its support for agrifood system development—that is, in developing more productive, inclusive, and sustainable farms and agribusiness firms. In the evaluation, we focus on the Bank Group's support during fiscal years 2010–20. We use a mixed methods approach that

leverages a range of data to generate evidence on Bank Group interventions supporting productivity, inclusion, and sustainability. We look at interventions in countries at different income levels throughout the evaluation. When possible, we complement the income-level analysis with an analysis of agrifood systems at three stages of development: traditional, transitional, and integrated. Traditional agrifood systems are typical of LICs, with agricultural production not integrated into markets and mostly geared toward home consumption. Transitional agrifood systems are typical of countries with growing incomes, where farms and agribusiness firms are becoming part of supply chains. Integrated agrifood systems are typical of middle-income countries and upper-middle-income countries with highly specialized agribusiness firms and highly developed supply chains. The evaluation methods include a review of the Bank Group's strategies; an assessment of the alignment of interventions to country needs; and analyses of portfolio data, a key performance indicator database, and case studies, supplemented by interviews and structured literature reviews.

The evaluation was approved as a focused exercise. At the time of approval, it was agreed that we would assess the relevance and effectiveness of Bank Group support to agrifood system development by focusing on specific aspects of the system and based on selected analysis that could be carried out remotely in a limited amount of time. Consistent with this agreement, the evaluation focuses on productivity, inclusion, and sustainability and excludes nutrition; we center the relevance and effectiveness analyses in relation to selected indicators; we base the effectiveness analysis on project-level analysis rather than a mix of project and country-level analyses; and we avoid in-depth causal analysis of interventions and their outcomes. We address gender-related issues partially, and we do not address other beneficiaries, such as youth and vulnerable groups, or we address them only marginally. We could not fully evaluate the effectiveness of the portfolio of the Multilateral Investment Guarantee Agency (MIGA) because of the limited number of evaluated MIGA projects.

Relevance

The Bank Group's interventions in support of agrifood system development have been broadly relevant, but gaps remain in scaling up and better targeting

support to countries that need it the most. Bank Group interventions supporting agrifood system development reached many countries that needed this support, including to increase agricultural productivity, improve social inclusion, and mitigate and adapt to climate change. However, support to increase access to agricultural finance, improve the enabling business environment, and enhance food safety standards did not reach enough countries with relevant needs. Although the targeting of countries with relevant interventions works quite well overall, it could be improved. In fact, while the intensity of Bank Group support (the number of interventions per country) for enhancing food safety standards, social inclusion, and climate mitigation is commensurate with need, the intensity of Bank Group support to increase agricultural productivity, enhance access to agricultural finance, and improve the enabling business environment is not. In addition, only about two-thirds of countries with multiple constraints on agrifood system development received the appropriate mix of interventions. For example, the Bank Group often provided productivity-enhancing measures without support for agricultural finance in countries that needed both types of support. It is important to note that in some cases, other development partners may be providing support in one of the two areas (or in other complementary areas), but the evaluation's analysis was limited to Bank Group activities.

World Bank support for improving productivity was insufficiently diversified across product types. The World Bank provides support primarily for basic staples and certain livestock; it has not sufficiently diversified toward higher-value and nutritious products that are often undersupplied. In LICs, about 58 percent of the demand for fruits and vegetables is unmet, and animal source foods are typically undersupplied and expensive. However, only 4 percent of the World Bank's product-targeted interventions supported the production of fruits and vegetables, and 11 percent supported grain legumes. Similarly, support for livestock production was focused on dairy (27 percent) and fish (34 percent), whereas only about 3 percent of projects explicitly supported production of small ruminants (sheep and goats) that offer income-generating opportunities for low-income households in rainfed and drought-prone environments.

MIGA's portfolio of guarantees is geographically aligned with its strategic priority to deepen its impact in LICs. MIGA focused one-third of its 21

interventions on LICs. MIGA's underwriting volume was relatively strong in Sub-Saharan Africa (85 percent of its projects) and in countries at the traditional stage of agrifood system development (76 percent of projects). All MIGA guarantees supported increasing the productivity of agrifood systems; 52 percent and 43 percent supported inclusion and sustainability, respectively.

Country Partnership Frameworks (CPFs) covered areas that are important for agrifood system development but did not consistently treat them in an integrated manner and missed opportunities to deepen engagement on gender, food safety standards, and climate change mitigation. The coverage of agrifood system issues in CPFs was adequate, given country-level shortcomings. However, about half of the CPFs (47 percent) did not treat productivity, inclusion, and sustainability in an integrated manner, even though these countries required support in all three areas. Fewer than half of CPFs indicated how agrifood system interventions would explicitly address gender. Additionally, fewer than half of the CPFs that were reviewed discussed or provided guidance on food safety standards. CPFs did not address climate change mitigation opportunities in about one-third (37 percent) of countries with high greenhouse gas emissions in agriculture, even though climate mitigation and adaptation interventions aligned with country needs at the operational level.

Effectiveness

Productivity

World Bank productivity-enhancing interventions were effective overall but were less so in countries at the traditional stage of development, particularly in West and Central Africa and in rainfed and less-favored environments. About 72 percent of World Bank projects targeting productivity were assessed as successful. The World Bank has been relatively more successful in improving the production and productivity of major staple cereals and livestock (such as poultry and dairy). Productivity was enhanced when producers bought improved inputs (such as modern seeds and fertilizers), invested in technologies, and gained increased access to markets. Interventions in countries at the traditional stage of agrifood system development were less

effective, especially in West and Central Africa, where only 49 percent of projects were successful in achieving their productivity outcomes. Although the World Bank has remained actively engaged in agrifood system development in this challenging region, lower effectiveness in these countries is associated with the fragility context, ineffective extension and service delivery systems, weak producer groups and implementing capacity, inadequate market infrastructure and underdeveloped supply chains, weak midstream value-adding sectors, and high risks because of climatic shocks or conflict. Furthermore, although the World Bank has supported innovative efforts to increase productivity in project-targeted areas, it has built on these efforts insufficiently to help increase yields nationally. This is especially the case in rainfed and less-favored environments, which also face high risks from climate change. Scaling results to increase impacts at the national level, especially in challenging regions, requires long-term strategies; local adaptation, capacity, and learning; and incentives to address constraints that limit adoption of promising interventions.

World Bank interventions focused only on supporting production were less successful than interventions that combined production and market approaches. The production or supply-side approaches include interventions to improve access to inputs and technologies to increase crop and livestock yields. Market or demand-side approaches include interventions to create or strengthen market links among producers and buyers. Complementary investments in market infrastructure and equipment, such as collection points, cold storage, and transport, were particularly important to diversify production to perishable high-value products. The combination of production and market approaches to enhance effectiveness is especially important but challenging in LICs and countries at early stages of agrifood system development, where smallholder farmers and small and medium enterprises (SMEs) have limited access to markets.

International Finance Corporation (IFC) investments and advisory interventions contributed to increased productivity. About 60 percent of the agribusiness investments across all countries increased productivity, which was higher than the average for the Manufacturing, Agribusiness, and Services portfolio at 45 percent. IFC designed investments that succeeded in increasing productivity based on a good understanding of the market. It derived this

understanding from sound value chain analytics and stress testing during due diligence that factored in adverse exogenous factors that could affect the use of the assets in which IFC invested (such as production facilities). This was of particular importance for investments in protected value chains, where the investment can suffer from the removal of subsidies. Although the number of evaluated projects is too low to make strong generalizations, IFC agribusiness investments seem to have sound results in boosting productivity, even in LICs. IFC advisory projects targeting productivity also performed well, with 68 percent assessed as successful; however, such projects performed less well in LICs, with a 40 percent success rate resulting from weaker firm-level capacity in these countries.

Inclusion

The World Bank has been effective overall at including smallholder farmers and SMEs in value chains but was less so in countries at the traditional stage of agrifood system development, including LICs and lower-middle-income countries (LMICs). About 71 percent of World Bank agrifood projects that had inclusion as a focus achieved this objective. Successful efforts identify relevant market opportunities based on locally produced crop and livestock products. They then support tailored interventions to increase access to and participation of smallholder farmers and SMEs in value chains. Examples include smallholder cocoa farmers in Côte d'Ivoire and dairy producers in India and Kenya. Inclusion has, however, been lower in countries at the traditional stage of development, including LICs and LMICs, particularly in West and Central Africa, where less than half of projects achieved this aim.

World Bank efforts to strengthen producer groups have helped facilitate the integration of farmers and firms into value chains. The producer groups facilitated participation in value chains by increasing access to agricultural technologies, adoption of sustainable practices, and acquisition of business skills. Examples include support to strengthen common interest groups and cooperatives in Ethiopia and Kenya, farmer groups in productive alliances in Bolivia and Peru, and dairy and livestock cooperatives in India and Vietnam.

IFC's agribusiness investments had a good record of including actors in value chains, even in LICs and LMICs, but IFC's investments targeting the poorest

agribusiness value chain actors faced challenges. The relatively high private sector development outcome ratings of IFC investment projects (66 percent) suggest generally satisfactory results on market integration (building and expanding value chains), including in LMICs and LICs. IFC achieved inclusion when it paired its investments with advisory services to provide extension services enhancing firm- or farm-level capacity in management, production quality, process management, or marketing. For example, IFC support to a dairy company in East Africa was successful in strengthening the firm's supply chain through extension services and dairy farm development to improve the management of the dairy farms and dairy farming practices, increasing productivity and improving the quality of the raw milk output. As a result, about 10,000 smallholder farmers in 48 cooperatives succeeded at supplying raw milk to the dairy company. However, IFC's inclusive business investments—investments that aim at integrating the poorest actors into value chains—faced challenges in remaining financially viable while integrating smallholder farmers and SMEs into agricultural value chains. Many small actors operating informal businesses before accessing value chains face difficulties achieving quality standards, lack managerial capacity, or engage in side selling when the spot market price exceeds the contracted one.

IFC advisory services in LICs had limited success. Advisory services projects had a good success rate overall (68 percent) but were less effective in achieving inclusion targets in LICs (25 percent) and in countries at the traditional stage of agrifood system development (33 percent).

Sustainability

The World Bank has contributed to enhancing sustainability but less so in LICs and countries at the traditional stage of agrifood system development. About 78 percent of all World Bank projects aimed at supporting sustainability were assessed as successful, whereas 67 percent of sustainability projects in LICs at the traditional stage were successful. Projects that successfully supported sustainability included those with climate-smart agriculture practices, those that supported diversification into climate-resilient crop and livestock activities, and those that improved public sustainability standards

and regulations (in 83 percent and 78 percent of cases, respectively). World Bank support for market-led sustainability standards, which are key for enhancing the participation of farmers and SMEs in value chains, was prominent in high-value sectors or export commodities. The World Bank has faced challenges with building on sustainability results in LICs at the traditional stage because of difficulties in replicating successful pilots.

Interventions that cultivate behavioral changes among farmers and agribusiness firms enhance the adoption of sustainability practices and standards. Demonstrating tangible economic benefits—and developing business skills that enhance the adoption of improved and more sustainable practices and business models—nurtures behavior changes among farmers and agrifood SMEs. Examples include the World Bank's Livestock Competitiveness and Food Safety Project in Vietnam, which facilitated adoption of food safety standards and environmental practices by smallholder farmers and slaughterhouses, and the Ethiopia Agricultural Growth Project II, which enhanced the uptake of climate-smart agriculture practices.

IFC agribusiness investments faced challenges with implementing environmental and social (E&S) standards, especially in LICs. Only 59 percent of agribusiness investments met IFC's E&S requirements, compared with the long-term average of 70 percent for IFC's investment portfolio evaluated by the Independent Evaluation Group team. Recurring issues include problems related to occupational health and safety, wastewater management, implementation of E&S action plans, and the Bank Group Environmental, Health, and Safety Guidelines. The E&S performance of investments was particularly weak in LICs because of weak firm-level capacity and commitment to implement E&S requirements. About 40 percent of IFC advisory services interventions supported farms and firms in improving their sustainability footprint, for example, by increasing the capacity of farms and firms in implementing food safety standards and by providing them with improved technologies and methods for addressing climate change. The effectiveness of such advisory services was about 73 percent, but none of the projects in LICs or countries at the traditional stage reached the satisfactory level because of weak firm capacity and commitment.

Factors Specific to the International Finance Corporation

Three factors are particularly important for the effectiveness of IFC agribusiness activities:

- Careful sponsor selection. Sponsors with prior experience in the market with the relevant value chain actors are better able to contribute to enhancing productivity and facilitating value chain integration, which makes it more likely that investments will meet IFC E&S requirements.
- Consideration of the level of diversification of a firm's product portfolios and destination markets. Diversification of products and markets allows companies to offset reduced revenues in one market with increased revenues in others.
- Careful balancing of trade-offs between development effectiveness and profitability. On average, IFC investments in frontier markets (such as LICs) have a sound development outcome but a negative risk-adjusted return on capital of –11 percent. IFC must offset this through above-average risk-adjusted return on capital rates from more profitable investments. Blended finance can help reduce the financial risks in frontier markets.

System-Level Considerations

The Bank Group is increasingly supporting system-level effects through multipurpose interventions that foster the development of more productive, inclusive, and sustainable agrifood systems. World Bank system-level interventions that target all three outcomes have an 80 percent success rate versus 72 percent on average for all interventions, and IFC advisory system-level interventions have a 77 percent success rate versus 69 percent on average for all interventions. This shows that generating system-level effects is possible despite potential trade-offs among different outcomes. Bundling interventions aimed at achieving the three outcomes is particularly important for addressing the overlapping challenges that smallholder farmers and SME agribusiness firms face.

Collaboration

The Bank Group has recognized the need for the three institutions (World Bank, IFC, and MIGA) to collaborate to mobilize private finance and increase results for agrifood system development, but collaboration remains largely informal, bilateral, and hard to assess. The establishment of the Agribusiness Sector Working Group marked an important step in strengthening strategic collaboration among the three institutions. It has contributed to improving knowledge sharing and the selection of priority themes for collaboration. However, operational collaboration for agrifood system development remains frequently bilateral (IFC with World Bank and IFC with MIGA), and it is difficult to identify joint projects among the World Bank, IFC, and MIGA in the current portfolio.

In conclusion, the current Bank Group approach to agrifood system development can be strengthened to address the continuing challenges that agrifood systems are facing and to fully support the Bank Group's vision for sustainable agrifood systems. The Bank Group and its partners can enhance the focus of their interventions on increasing productivity, inclusion, and sustainability, especially in LICs, countries at a traditional stage of agrifood system development, and countries in fragile and conflict-affected situations. Such interventions are expected to address the enormous climate and other challenges that agrifood systems continue to face and facilitate transformation while ensuring that agrifood system approaches safeguard the environment and support improvements in people's nutrition and health. This, in turn, will contribute to ending hunger and improving the well-being of all. In light of this, we offer three recommendations.

Recommendations

Recommendation 1. **To enhance its effectiveness in developing agrifood systems, the Bank Group's efforts to support production technologies should be complemented by efforts to improve market access, especially in LICs and in countries at the traditional stage of agrifood system development.** These complementarities can be pursued by enhancing synergies in Bank Group interventions or with partners. Pairing production

with access to market support helps address the fragmentation of production activities and the insufficient market integration of various actors in agrifood systems. Production support entails strengthening research, extension, and input delivery systems to increase the adoption and adaptation of specific technologies, innovations (including digital solutions), and sustainable practices. Access to market support entails identifying buyers, developing the needed market infrastructure (for example, logistics and cold chains), and facilitating links between smallholder farmers and SMEs with potential buyers. Improving links, in turn, requires deepening support to agricultural producer groups and SMEs to enhance their capacity and business skills. Over time, this will help them adopt sustainability standards and potentially establish partnerships with larger private sector value chain actors—lead firms that have successful records in integrating small actors into value chains. Access to finance and support to improve the enabling environment to attract private investment at various stages of the value chain is critical to improve both production and access to markets. Supporting complementary interventions is particularly important in LICs and in countries at the traditional stage of agrifood system development, which often lack infrastructure for farmers and SMEs to access markets in urban areas. Complementarity can be achieved through synergies across the Bank Group using parallel or sequenced interventions, through partnerships with other donor agencies, or through client actions, and these expectations should be clarified in project documents.

Recommendation 2. **To achieve more sustainable agrifood systems, where conditions permit, the Bank Group should support production diversification to meet the growing demand for undersupplied, high-value-added nutritious products while ensuring that smallholder farmers and SMEs benefit from the diversification.** Although the World Bank should retain its support for staple crops and livestock that meet domestic needs, it should also seize opportunities to help smallholders and SMEs benefit from more sustainable agrifood systems by supporting increased production and marketing of higher-value nutritious products, such as fruits, vegetables, grain legumes, oil crops, small ruminants, dairy, fish, and poultry, where conditions permit. Higher-value products can have income-enhancing effects for smallholders and SMEs if constraints to entry

are overcome; resource-efficient (for example, using less water and land) and diversified production can enhance climate resilience and sustainability; and highly nutritious products will also provide benefits to the overall household well-being. Successful production and marketing of higher-value products will require attention to (i) agricultural finance, so that farms and firms can invest in adequate technologies and processes; (ii) food safety standards to access competitive markets; (iii) capacity building; (iv) market infrastructure; and (v) aggregation and wholesale activities. These factors are particularly important for smallholder farmers and SMEs. Blended finance, including that provided by the Global Agriculture and Food Security Program, has been particularly effective at improving market access by helping smallholders in low-income and fragile contexts link with buyers and private sector investment. Illustrative examples of relevant diversification efforts that have benefited smallholders and SMEs include initiatives for diversifying cereal-based systems in Asia and efforts to increase access to small-scale irrigation and climate-smart agriculture in Africa, which allow smallholder farmers to integrate fruit trees and vegetables into their production activities. Similarly, IFC and MIGA could build on their successful experiences in the dairy, beef, and poultry sectors in Eastern and Southern Africa, where they provided access to finance paired with complementary investments in logistics infrastructure, capacity building, and marketing.

Recommendation 3. **To enhance the contribution of IFC support for agrifood system development, IFC should pilot and adopt more effective ways to support clients to better meet E&S Performance Standards, especially in LICs.** Progress in improving E&S performance was apparent when clients possessed the capacity and commitment to address E&S issues or when IFC was able to strengthen their capacity and commitment through loan covenants, tailored IFC advisory services, or blended finance. Improving the E&S performance of clients in LICs will require assistance to help them address recurring challenges (such as in wastewater management and occupational health and safety) and to support the implementation of E&S action plans and the Bank Group Environmental, Health, and Safety Guidelines.

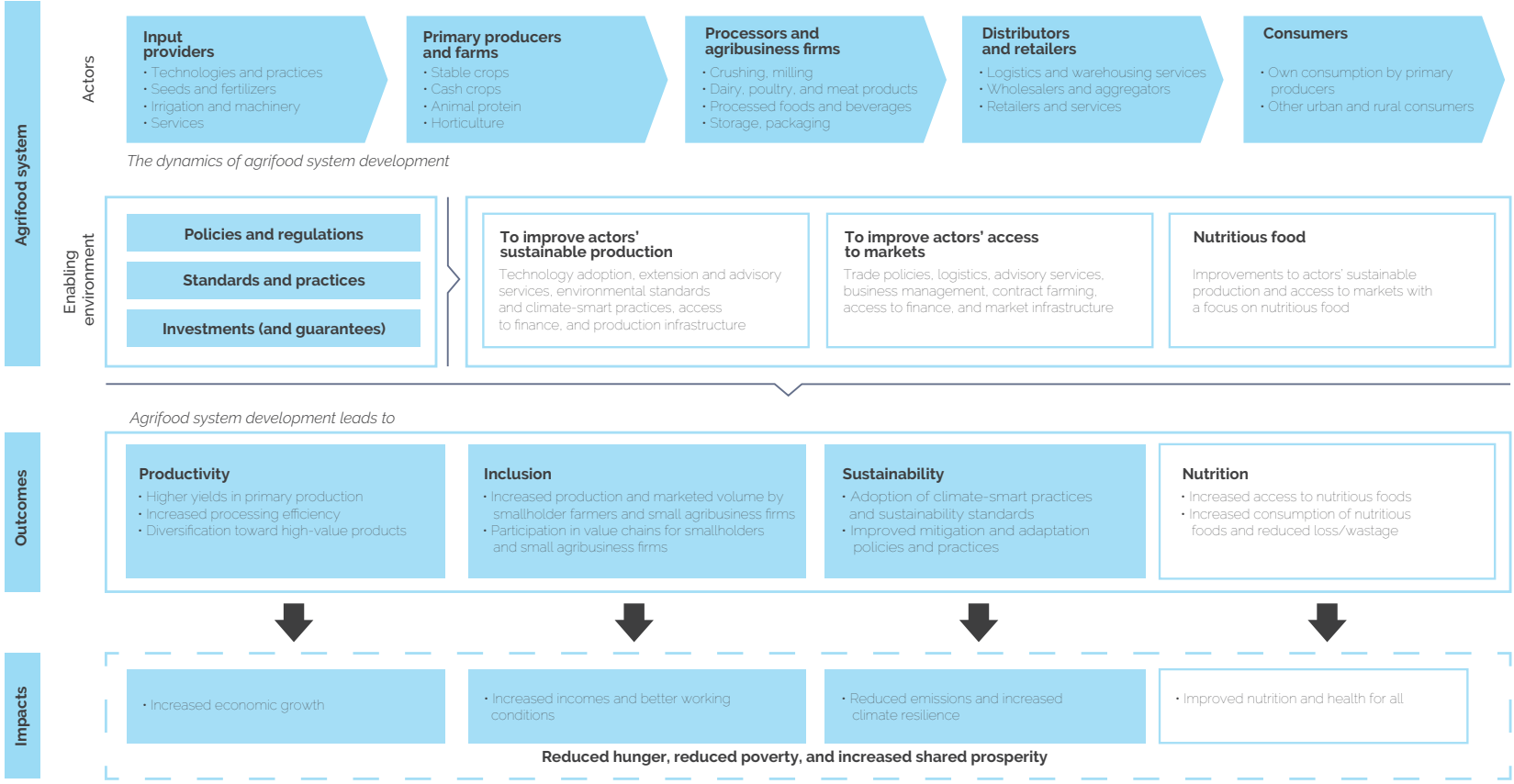
1 | Background, Context, and Approach

Agrifood System Development

The agrifood system comprises the actors engaged in agriculture and the related food industry and services, the activities they perform, and their enabling environment. The main actors include input providers, farms, agribusiness firms, distributors, and consumers (figure 1.1). They perform farming, processing, wholesale and retail distribution of food and related products, and consumption. The enabling environment for agrifood system development is the set of policies, standards, and investments that affects sustainable production and market access. Sustainable production may be influenced, for example, by policies to facilitate farms' and firms' adoption of technologies to improve the primary production and processing of agricultural products. Investment and trade policies and regulations, and managerial practices, may influence access to markets and consumer behavior. Specific policies, standards, and investments are needed to support sustainable production and marketing of safe and nutritious food. Access to finance and infrastructure are crucial to enable both production and access to markets, including of safe and nutritious food.

The evaluation will not cover nutrition and related health aspects of agrifood system development. As agreed with the World Bank Group management at the Approach Paper stage, we focus on three of the four outcome dimensions depicted in figure 1.1: productivity, inclusion, and sustainability. We do not directly address the fourth outcome: nutrition. We touch on nutrition and the associated health benefits for consumers as they relate to the other three aspects of agrifood system development.

Figure 1.1. The Actors, Activities, and Dynamics of Agrifood System Development



Source: Independent Evaluation Group.

Note: Consumers and nutrition-related agrifood system activities and outcomes are shown for completeness but are not covered by the evaluation.

Agrifood system development increases productivity and inclusion, contributing to ending hunger and poverty and boosting shared prosperity. The agrifood system accounts for more than 30 percent of gross domestic product and 70 percent of all jobs in low-income countries (LICs; World Bank 2017c). About 80 percent of poor people and the chronically food insecure (820 million people in 2016) live in rural areas, and 65 percent of the working adults among them make a living through agriculture (Castañeda et al. 2016; World Bank 2017c). Growth in the agriculture sector is two to three times more effective than growth in other sectors at raising incomes among the poorest people (World Bank Group 2015a). Policies, standards, and investments that improve actors' production and access to markets may, for example, lead to a shift from subsistence to market-oriented agriculture, a shift toward high-value products, or the development of value-adding activities that create off-farm jobs and generate multipliers for economic growth (de Janvry and Sadoulet 2019; FAO 2018; World Bank 2007, 2020a).

The development of agrifood systems is also critical for sustainability. The agrifood sector is responsible for more than one-quarter of global greenhouse gas emissions (Global Panel 2020; World Bank Group 2015a). Emissions from agriculture can be significantly reduced with climate-smart mitigation policies and investments, including the adoption of improved practices and sustainability standards by all relevant actors.

Several Sustainable Development Goals (SDGs) and global commitments for sustainable development capture the importance of agrifood system development. Agrifood systems contribute to almost all the SDGs, including decent work and economic growth (SDG 8); industry, innovation, and infrastructure (SDG 9); reduced inequalities (SDG 10); climate action (SDG 13); conservation of natural resources and vital ecosystem services (SDGs 14 and 15); and no poverty (SDG 1) and zero hunger (SDG 2; FAO 2018; World Bank 2020b; World Bank Group 2015a). Agrifood systems also play a central role in meeting commitments established as part of the 1992 Rio Earth Summit Conventions: the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification, and the United Nations Convention on Biological Diversity.

The Challenges of Agrifood Systems and World Bank Group Support

Agrifood systems face many challenges that put agriculture-driven inclusive growth and sustainable development at risk. Agricultural productivity is low in many LICs, threatening efforts to reduce poverty and improve food security. For example, average cereal yields (for 2010–17) in Sub-Saharan Africa and LICs were one-third of those in upper-middle-income countries (UMICs) and one-quarter of those in high-income countries. Smallholders and small producers in LICs have particularly low productivity because their integration into local, regional, and global value chains remains limited, and they struggle to shift from subsistence to market-oriented agriculture, diversify their products, and develop value-adding activities. The current agrifood system also fails to deliver desired outcomes for climate and the environment (IFAD 2021). Agriculture accounts for 70 percent of water use and contributes to climate change, biodiversity loss, and environmental degradation. The agrifood system is a major source of greenhouse gas emissions, and climate change is projected to cut agricultural production, especially in the poorest and most food-insecure regions (World Bank 2010). Overall, the world's agrifood systems—which have a market value of about $10 trillion per year—generate between $6 trillion and $12 trillion annually in hidden social, economic, and environmental costs (externalities).

These challenges risk putting the SDGs out of reach and making agrifood systems unsustainable. Gains in productivity and technological advances in agrifood systems have contributed to more efficient resource use, reduced farmland expansion into forests and other vital ecosystems, and helped feed growing populations. However, the dramatic successes made possible through innovations over the past century are increasingly unsustainable because of noninclusive approaches that do not reduce poverty or hunger and massive adverse effects on climate and the environment (Barrett et al. 2020; FOLU 2019; World Bank 2020a). The convergence of climate change, the coronavirus pandemic, conflict, and violence exacerbate existing weaknesses in current agrifood systems (World Bank 2020b).[1]

To address these challenges, the Bank Group has supported the development of the agriculture sector and the broader agrifood system using a variety of instruments. Through its successive Agriculture Action Plans, the Bank Group has developed a differentiated approach to increasing the productivity, inclusion, and sustainability of agrifood economies at three stages of agrifood system development—traditional, transitional, and integrated (World Bank 2007; World Bank Group 2013). As part of this effort, the World Bank provides lending and nonlending support to governments to enhance the enabling environment for agrifood systems and support public and private investments. The International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) typically support the value addition of medium or large commercially oriented farms and agribusiness firms through direct investments in the private sector (IFC), advisory services (IFC), and guarantees (MIGA). In addition, IFC supports agribusiness small and medium enterprises (SMEs) and smallholder farmers through financial intermediation.

Purpose, Scope, and Methods

The purpose of the evaluation is to assess how relevant and effective the Bank Group has been in developing more productive, inclusive, and sustainable agrifood systems. We focus on three evaluation questions:

1. How relevant is the Bank Group (to what extent is it "doing the right things in the right places") in its support for raising productivity, inclusion, and sustainability in the agrifood systems of client countries? This question is addressed in chapter 2.

2. How effective is Bank Group support in making agrifood systems more productive, inclusive, and sustainable? (To what extent is the Bank Group "doing things right"?) And how effectively have the World Bank, IFC, and MIGA coordinated their efforts in their overall support for agrifood system development? These questions are addressed in chapter 3.

3. What factors of success explain the effectiveness of Bank Group interventions? This question is addressed in chapter 4.

We focus on Bank Group support for developing agrifood systems in client countries during fiscal years (FY)10–20; coverage of MIGA is limited because

of its small portfolio. We examine agrifood sector interventions, including World Bank lending, IFC investments and advisory services, and to the extent that evidence was available, MIGA guarantees. The portfolio includes Bank Group projects approved during FY10–20 and draws from Project Performance Assessment Reports of projects closed during this period.[2] World Bank analytics and advisory services are assessed partially in chapter 2 for their relevance to country needs. The limited number of evaluated interventions prevented an assessment of the effectiveness of MIGA's portfolio. Chapter 2 touches on the relevance of MIGA's work; chapter 3 includes a discussion on collaborative efforts among IFC, the World Bank, and MIGA; and chapter 4 draws on limited evidence on success factors from MIGA case studies. We refer to the "Bank Group" when our findings apply to all institutions (that is, the World Bank, IFC, and MIGA) or to the two involved institutions (in cases where two of the three institutions were active in a country). When our findings apply to one institution only, we refer explicitly to that institution (either the World Bank, IFC, or MIGA).

The Approach Paper was approved with the agreement that this would be a focused evaluation with a limited scope and depth. Because of considerations related to the limited time available to deliver this evaluation and the travel restrictions resulting from the pandemic, at the review meeting of the Approach Paper, the team was authorized to proceed with a focused evaluation (rather than a full thematic evaluation) of limited scope and depth. It was agreed that the effectiveness analysis would be based on project-level analysis rather than a mix of project- and country-level analyses. In addition, we would not conduct an in-depth or comprehensive causal analysis of interventions and their outcomes. Finally, we would produce forward-looking lessons and recommendations only in selected areas. The following paragraphs provide clarifications on these limitations.

We assess system-level effects of Bank Group agrifood system development interventions to a limited extent, and we do not assess long-term development impacts or the benefits to specific target groups. System-level effects—defined as those arising from jointly pursuing productivity, inclusion, and sustainability—were assessed to a limited extent. We do not assess long-term development impacts, economic growth and associated sector- or economy-wide effects, shared prosperity, or reduced hunger. We also do not analyze

distributional issues, beneficiary effects, jobs, or income sources outside the agrifood system (such as in tourism and mining) or the benefits to specific target groups, such as youth, indigenous minorities, or people with disabilities. We partially assess gender-related issues in agrifood systems.

We do not assess whether Bank Group support for agrifood system development has reduced the productivity, inclusion, and sustainability gaps that client countries face. Only a few high-quality, comparable indicators that measure specific aspects of countries' productivity, inclusion, and sustainability are available. These data (which are used for the relevance analysis) do not comprehensively document countries' gaps in these three dimensions. We also could not quantify the Bank Group's contributions to filling existing gaps because multiple factors influence macro-level outcomes on productivity, inclusion, and sustainability. The project-level data we used lack documented evidence attributing contributions toward closing these gaps. Therefore, the evaluation is limited to (i) determining whether Bank Group interventions have contributed positively to improving productivity, inclusion, and sustainability, especially in countries with the highest needs, and (ii) distilling contextualized success factors that could be adapted and replicated to scale up relevant and effective interventions and contribute to filling the existing gaps.

We address only environmental sustainability, on which there is evaluative data and evidence. Sustainability is a general concept that includes social, economic, and environmental dimensions (FAO 2018). This broad concept is encapsulated in the World Bank's new vision for a sustainable food system of "healthy people, a healthy planet, and healthy economies" (World Bank 2020a) and in IFC's definition of sustainability according to the IFC deep dive "Agribusiness—Mobilizing Private Sector Action to Address the Food Security Challenge with Sustainable, Inclusive Development," presented to the Board of Executive Directors in 2017, which includes financial, environmental, and social sustainability. In its evaluability assessment, we determined it would not be possible to find rigorous evidence to adequately address financial and social sustainability. The relevance analysis focuses on where and how the Bank Group is addressing environmental sustainability (especially the threat of climate change). The effectiveness analysis concentrates narrowly on the uptake by farms and agribusiness firms of environmental

sustainability standards (including sanitary and phytosanitary standards) and climate-smart practices (such as climate-smart agriculture) as intermediate outcomes.

We use a mixed methods approach derived from a range of data to generate evidence, success factors, and lessons. In the relevance analysis, we use multiple proxy indicators for each of the three outcomes to assess the alignment between the Bank Group portfolio and country-specific development challenges. We then review the Country Partnership Frameworks (CPFs) and Country Private Sector Diagnostics (CPSDs) and the Bank Group's overarching vision and approach to agrifood system development. In the effectiveness analysis, we look at micro-level evidence (except in the case of MIGA) using portfolio review and analysis to assess the achievement of development outcomes. The portfolio review and analysis is enhanced through analysis of World Bank key performance indicators (KPIs) and of IFC environmental and social (E&S) Performance Standards. In the effectiveness analysis, we also use case studies of 17 operations (covering World Bank, IFC, and MIGA) to identify factors of effectiveness. Our relevance and effectiveness analyses benefited from (i) interviews with key Bank Group senior staff to assess the extent of internal collaboration and (ii) two structured literature reviews that were used to contextualize and interpret our findings. (See the methods overview in appendix A.) The relevance analysis and the case studies for the effectiveness analysis did not benefit from field missions; we conducted all consultations and interviews virtually because of the pandemic. Because of data constraints, our effectiveness analysis also does not consider countries' transitions through different stages of agrifood system development as defined in the 2008 *World Development Report* (World Bank 2007).

[1] The World Bank has projected that the coronavirus pandemic could push 88 million to 115 million people into extreme poverty—more than 85 percent of them from South Asia and Sub-Saharan Africa—effectively reversing gains made since 2017 (World Bank 2020e). In addition, climate change is projected to force more than 100 million people into poverty by 2030, especially in Africa and South Asia (Hallegatte et al. 2016).

[2] Given that the portfolio mainly covers projects that closed before the global spread of the coronavirus, the effects of the pandemic are excluded from the evaluation. The pandemic is likely to have diminished the positive contributions of the World Bank Group. The Project Performance Assessment Reports for projects that closed during fiscal years 2010–20 were included to benefit from existing evaluative evidence.

2 | The Relevance of World Bank Group Support for Agrifood System Development

World Bank Group interventions to increase agricultural productivity, improve social inclusion, and mitigate and adapt to climate change reached many countries that needed them. However, Bank Group support to increase access to agricultural finance, improve the enabling business environment, and enhance food safety standards did not reach enough countries with relevant needs, suggesting room to scale up support. Moreover, the World Bank's productivity-enhancing investments are not sufficiently diversified beyond major staples and some livestock toward high-value, nutritious products that are in high demand and offer multiple benefits to farmers, small and medium enterprises, and the population living in low-income countries.

The intensity of Bank Group support (the number of interventions per country) for enhancing food safety standards, social inclusion, and climate change mitigation and adaptation was commensurate with need. By contrast, the intensity of Bank Group support to increase agricultural productivity, enhance access to agricultural finance, and improve the enabling business environment was not commensurate with country needs, suggesting room to improve the targeting of support.

Only about two-thirds of countries with multiple constraints on agrifood system development received the appropriate mix of interventions, underscoring the need for better targeting. For example, productivity-enhancing measures were often provided without support for agricultural finance in countries that needed both types of support.

Country Partnership Frameworks adequately covered core areas for agrifood system development, but about half did not treat them in an integrated manner. Country Partnership Frameworks also missed opportunities to address gender, food safety standards, and climate change mitigation strategically.

This chapter analyzes how relevant the Bank Group's support for agrifood system development has been to client countries. Relevance means "doing the right things in the right places"—that is, deploying interventions that address countries' needs to improve their agrifood systems. Such a deployment of interventions should be prioritized to align limited resources with each other and target important system constraints. To assess whether the Bank Group is doing the right things in the right places, we analyzed the *reach* of the Bank Group's support to agrifood system development (how many countries received support), the *intensity* of its support (how many projects a country received), the mix of interventions (how many areas for agrifood system development the projects addressed), and the CPF *coverage* (whether CPFs reflected countries' agrifood system development needs).

Reach and Intensity of World Bank Group Support

Reach and intensity measure to what extent the Bank Group provides support to countries in need and how much support it provides, respectively. If the Bank Group is doing relevant work, we would expect that its support for agrifood system development would reach a high share of countries that need it. Likewise, we would also expect that the Bank Group would provide more support to countries with relatively high needs and less support to countries with lower needs—that is, we would expect the intensity of support to be commensurate with country needs.

We assessed the reach and intensity of the Bank Group's support across six areas that are core to improving the productivity, inclusion, and sustainability of agrifood systems. They are the following:

1. Interventions to increase the productivity of agricultural primary production and processing of agricultural products;
2. Interventions to improve the business environment of the agrifood system, which are crucial to enable the growth of farms and firms;
3. Access to finance interventions to allow farms and firms to increase their working capital and investments;

4. Social inclusion interventions to allow poor people, women, or marginalized individuals to derive better and more stable incomes as the agrifood system develops;

5. Interventions to improve food safety standards, which are important for farms and firms to integrate into value chains and to access both domestic and export markets;

6. Interventions to improve the climate mitigation and adaptation capacities of agrifood systems.

Table 2.1 includes selected indicators that we have identified as proxies to measure country-level reach and intensity in each of these six areas for agrifood system development.

Table 2.1. Areas in Agrifood System Development and Proxy Indicators

No.	Areas	Indicator Definition (source)	Description
1	Productivity of primary agricultural production	Cereal yield in kilograms per hectare (WDI)	Measured as kilograms per hectare of harvested land; includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains
2	Agricultural business environment	Agricultural policy costs (Global Competitiveness Index, World Economic Forum)	Survey-based: "In your country, how do you assess the agricultural policy?" (1 = excessively burdensome for the economy; 7 = balances well the interests of taxpayers, consumers, and producers)
3	Access to finance	Credit to agriculture (FAO)	Share of credit provided by the private or commercial banking sector to producers in agriculture, forestry, and fisheries, including farmers, cooperatives, and agribusinesses in total credit
4	Social inclusion	Rural poverty headcount ratio (World Bank or Global Monitoring Database)	The percentage of the rural population living on less than US$1.90 a day at 2011 international prices

(continued)

No.	Areas	Indicator Definition (source)	Description
5	Food safety standards	Quality of phytosanitary legislation (World Bank, Enabling the Business of Agriculture)	Measures phytosanitary legislation that helps domestic farmers prevent and control pests and plant diseases and access markets; captures the accessibility of pest information, reporting obligations, quarantine pest lists, pest risk analysis, and risk-based inspections
6	Climate change: mitigation and adaptation	Greenhouse gas emissions per agricultural GDP	Emissions in CO2 equivalents in agriculture
		ND-GAIN Index	The ND-GAIN Index (0–100, where a high score indicates low vulnerability to climate change and high readiness to improve resilience)

Source: Independent Evaluation Group, based on global data from various sources.

Note: CO2 = carbon dioxide; FAO = Food and Agriculture Organization of the United Nations; GDP = gross domestic product; ND-GAIN = Notre Dame Global Adaptation Initiative; WDI = World Development Indicators.

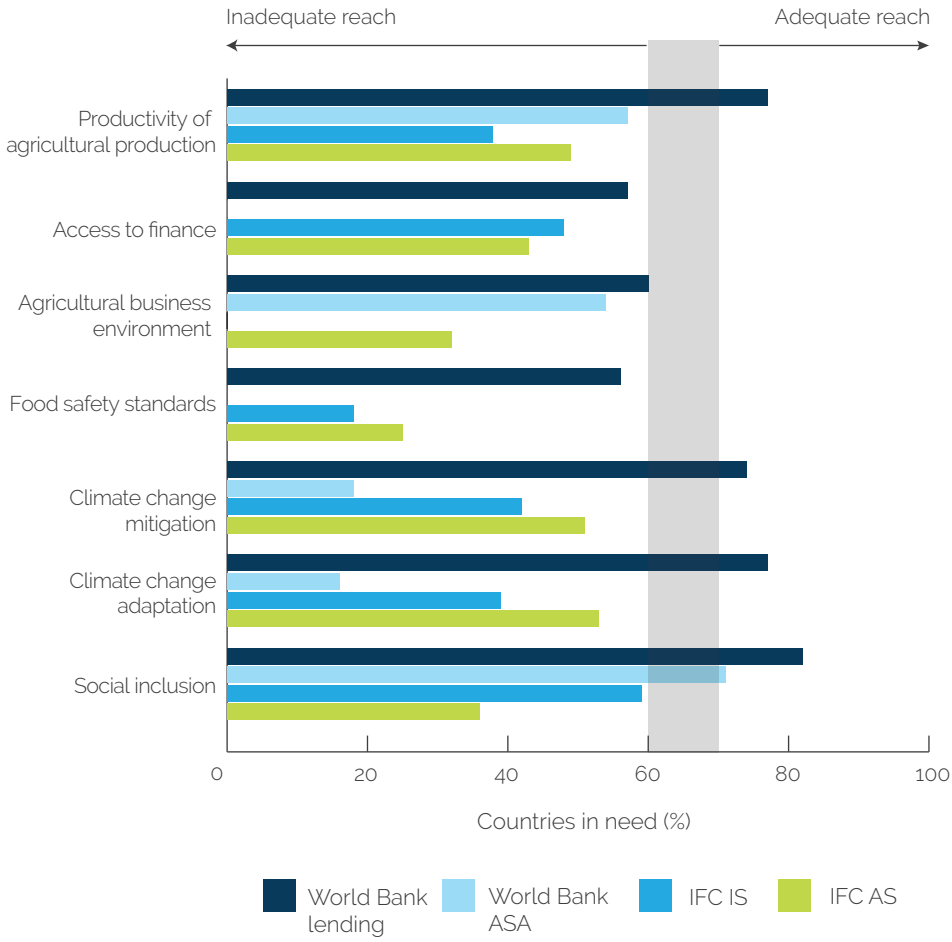
To assess the reach of Bank Group support, we determined how many countries with high needs received Bank Group support. Those countries that scored *below* the global median on any of the above proxy indicators were considered countries with relatively high needs for support in that core area for agrifood system development. Countries that scored *above* the global median were considered countries with relatively low needs. The team then determined *reach* by calculating the percentage of countries scoring below the global median (as an indication of high need for support) that received at least one Bank Group intervention addressing that specific need. For enhancing food safety standards, for example, reach was 68 percent because 39 out of 57 countries that scored below the global median on food safety standards received at least one Bank Group project to improve them. The team considered reaching two-thirds (66 percent) of countries with relevant support an adequate benchmark for World Bank lending and advisory, and—because of the smaller portfolio of IFC—it considered reaching half (50 percent) of countries to be adequate for IFC investments and advisory. Reaching

a much higher percentage would be difficult for IFC, considering that IFC takes the full commercial risk when engaging in financial intermediation without sovereign guarantees and because of the high number of countries that are small island states or are in fragile and conflict-affected situations (FCS).[1] Because various instruments are complementary, we should not expect all of them to reach their respective benchmark but should instead look at the collective reach of the Bank Group as a whole. As an example, a relatively low reach of IFC investment complemented by a high reach of IFC advisory work (for example, on productivity and climate) may indicate that IFC is supporting reforms to create the enabling environment for future investment. Figure 2.1, panel a, provides an overview of the results, which are discussed in greater detail in the subsequent sections.

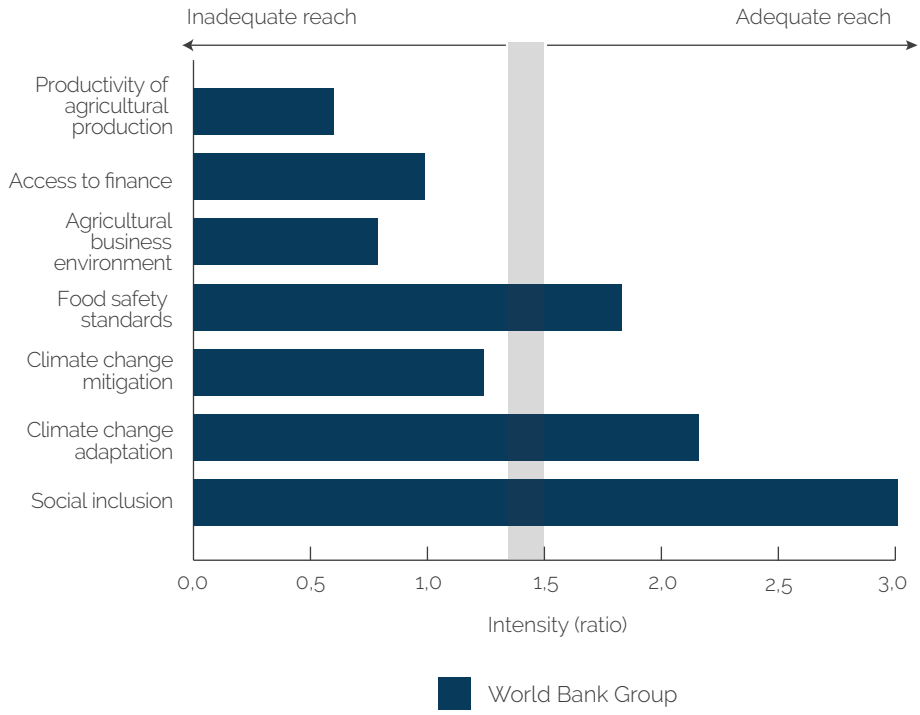
To assess the intensity of Bank Group support, we determined how many projects the Bank Group implemented for countries with high needs compared with those with low needs in each of the six core areas. For example, the 57 countries that scored below the global median on quality of food standards received 97 Bank Group projects (or 1.7 projects per country), compared with 13 projects in support of the 14 countries that scored above the global median on this indicator (or about one project per country). Given that the Bank Group allocated 1.7 times more projects to countries with relatively high needs than to countries with relatively low needs, the team concluded that the intensity of Bank Group support was commensurate with country-level needs. We measured the intensity of support at the Bank Group level (and not at the instrument level) because it would be unrealistic for the intensity of every instrument to reflect country-level needs. Figure 2.1, panel b, provides an overview of the results, which we discuss in greater detail in subsequent sections. We abstain from assessing funding levels because various factors influence them, and they would bias the analysis in favor of large economies or those with relatively large absorption capacity.

Figure 2.1. Reach and Intensity of World Bank Group Support to Agrifood System Development across Six Areas

a. Reach of Bank Group interventions for countries in need



b. Intensity of Bank Group support



Source: Independent Evaluation Group.

Note: Seven areas are shown because the climate change area has been divided into two parts: mitigation and adaptation. Panel a shows the share of countries with high need for support that received at least one relevant project in the corresponding area. Because we were not able to classify World Bank ASA for two areas (access to finance and food safety standards), World Bank ASA is not included in the respective graphs. Because IFC investments do not actively support the creation of an agricultural business environment, they are not included in the respective graph. Panel b shows the ratio of Bank Group projects per country with high need for support to the number of projects per country with low need for support. ASA = advisory services and analytics; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services.

The analysis has several limitations. We measured the indicators at the country level. However, within one country, farms and agrifirms with high and low levels of productivity and market integration may coexist in different sectors or even in the same sector. The indicator-based assessment does not reflect such sector- and firm-specific circumstances. Nor does it consider broad factors such as political governance that can influence the implementation of reforms or sector-specific regulatory constraints (such as trade barriers affecting commodities). Indicators may not reflect the entire breadth of the Bank Group's support; for example, the access to finance indicator (credit to agriculture by the Food and Agriculture Organization) does not account for public sector finance but captures only private finance.[2] Bank Group interventions that fall outside the agrifood system portfolio (for example, provision of finance through IFC-supported aggregators or interventions

that do not target the agrifood system but may still have effects on the entire banking system, or efforts toward electrification or building rural roads) are also not considered, even though they may be important for agrifood system development. The work of other development partners, which at times complements Bank Group efforts at the country level, is also not reflected in the analysis. Finally, the sparsity of data across areas of support and client countries—especially globally comparable data on the integration of small farms and firms into agribusiness value chains—limits the assessment.

Bank Group productivity-enhancing interventions reached most countries with low agricultural productivity, but the intensity of support was not always commensurate with the need. Productivity-enhancing interventions support access to crop and livestock technologies, inputs, and services for farms and agribusiness firms. Sixty-five percent of Bank Group client countries have low agricultural productivity—that is, they score below the global median in cereal yields.[3] The Bank Group reached 87 percent of these countries with at least one productivity-enhancing intervention, and World Bank lending alone reached 77 percent. IFC's reach was lower, both with investments (43 percent) and advisory services (51 percent). Despite the World Bank's reach, the intensity of its support was not commensurate with country needs—the Bank Group provided 1.6 times more support to countries with agricultural productivity above the median. This mismatch raises the question of whether there is room for the Bank Group to further increase its focus in countries with low agricultural productivity. Box 2.1 provides examples of successful productivity-enhancing interventions supported by the World Bank and IFC.

Box 2.1. Increasing Agricultural Productivity: Examples of World Bank and International Finance Corporation Interventions

- **Benin:** The World Bank promoted economic diversification in Benin away from the primary cotton industry toward the rice, cashew, and pineapple value chains. To achieve this goal, the World Bank promoted the adoption of yield-enhancing technologies, invested in disseminating irrigation practices, and targeted exports in these sectors.
- **Kazakhstan:** The International Finance Corporation has developed projects to improve productivity in the livestock sector by financing greenfield expansion, increasing processing capacity in the wheat industry, and supporting debt refinancing in the soft drink and fruit industries.

Source: Independent Evaluation Group.

World Bank support for improving productivity was insufficiently diversified across product types. The World Bank provides support primarily for basic staples and certain livestock; it has not sufficiently diversified toward high-value and nutrient-rich products with growing global demand (such as fruits and vegetables). In LICs, about 58 percent of the demand for fruits and vegetables is unmet, and animal source foods are also undersupplied and expensive (Headey and Alderman 2019; Vermeulen et al. 2020). About a quarter of the World Bank product-targeted interventions (26 percent) supported the production of basic staples. However, only 4 and 11 percent of the World Bank's product-targeted interventions supported the production of fruits and vegetables, and grain legumes, respectively. At the same time, 43 percent of the World Bank's product-targeted interventions supported livestock, with a focus on dairy (27 percent) and fish (34 percent), and only about 3 percent of projects explicitly supported production of small ruminants (such as sheep and goats) that provide livelihood opportunities and income-generating options for low-income farmers in drier areas and drought-prone environments (see appendix B).

Diversifying production offers multiple benefits to smallholder farmers, SMEs, and the general population. Supporting diversification of production,

where feasible, toward resource-efficient (using less land and water) and higher-value foods such as vegetables, fruits, legumes, and silvopastoral livestock systems can offer multiple benefits to smallholder farmers and SMEs, including productivity, sustainability, and better resilience to climate change. It also offers benefits to the general population because it increases the supply of healthy and nutritious foods, which are in high demand in several countries and are critical for people living in LICs, including the rural and urban poor people (World Bank Group 2015b, 2016).

IFC interventions have been slightly more diversified than the World Bank's. IFC's support is more diversified toward fruits and vegetables (14 percent), processed foods and beverages, and other high-value commodities (such as cocoa, coffee, and sugar) compared with the World Bank's interventions but is less diversified in food legumes, nuts, and oils. The higher level of diversification of IFC's support is related to the fact that IFC's core markets are middle-income countries, which are more likely to diversify beyond staple crops.

Bank Group support is not benefiting many countries with poor business environments. Bank Group support for enhancing the enabling business environment of the agrifood system allows farms and firms to access input and product markets, obtain permits and licenses, and join value chains, increasing productivity. Fifty-four percent of Bank Group client countries have poor enabling business environments for agrifood systems, based on the proxy indicator "agricultural policy costs" (table 2.1). Of the countries with low-quality business environments, World Bank lending and advisory services and analytics (ASA) reached a relatively modest 60 and 54 percent of countries, respectively, and IFC reached 32 percent with its advisory services. (IFC investments are not accounted for because they rarely engage in efforts to enhance the business environment directly.) Moreover, within this limited reach, 1.3 times more interventions per country were implemented in countries that already had better enabling business environments than in countries with poor enabling business environments. The disparity suggests that the intensity of Bank Group support for the enabling business environment is not commensurate with country needs. Compared with other instruments, World Bank ASA was generally more intensive in countries

with poor business environments. World Bank ASA has also frequently been complementary to lending. For example, in Côte d'Ivoire, an ASA supported a lending operation to improve the market access and inclusion of smallholder farmers. Box 2.2 provides examples of successful business environment interventions supported by IFC and the World Bank.

Box 2.2. Addressing the Agribusiness Development Business Environment: Examples of World Bank and International Finance Corporation Interventions

- **The Kyrgyz Republic:** International Finance Corporation advisory services helped simplify business regulations in the dairy sector, improve the animal health regulation system to facilitate exports, and enhance the country's business environment in the agribusiness sector by supporting improvements to investment policies.
- **Mozambique:** The World Bank supported Mozambique's smallholder farms by providing access to irrigation and access to markets and by providing support for the government to develop policies to ease private investment in smallholder agricultural production.

Source: Independent Evaluation Group.

Bank Group support to implement food safety standards reached relatively few countries, but within this limited reach, the intensity of support was commensurate with country needs. Food safety standards are important for farmers to sell their goods to regulated domestic and export markets and enter value chains. Eighty percent of Bank Group client countries have poor food safety standards; of these countries, only 56 percent obtained support through World Bank lending, 25 percent through IFC advisory services, and 18 percent through IFC investment. However, almost twice as many World Bank lending, IFC investment, and IFC advisory services projects to enhance food safety standards are implemented in countries that need this type of support more (those that have low food safety standards) as in those that need it less (those that have high food safety standards). In other words, the intensity of support was commensurate with country needs.

Bank Group support for enhancing social inclusion not only reached the majority of countries that needed this support but was provided at an intensity commensurate with countries' needs. For agrifood system development to be socially inclusive (that is, to reach poor people and marginalized groups), interventions need to offer opportunities so groups can participate in productivity growth and share the benefits. Seventy-four percent of countries score above the global median on rural poverty rates and are therefore countries in need (table 2.1). Of these countries, the World Bank reached 82 percent with lending and 71 percent with ASA, a country reach above the benchmark of 66 percent. ASA often supported World Bank lending. For example, in Ethiopia, the Investment Climate for Small and Informal Enterprises ASA helped develop strategies targeting smallholders, women, and young people in support of the Agriculture Growth Program Project. IFC investments and advisory reached 59 percent and 36 percent, respectively, of countries with high rural poverty rates. Countries with high rural poverty rates received two to four times more Bank Group support on social inclusion than countries with low rural poverty rates, evidence that the intensity of support was commensurate with country needs.

Bank Group support to increase access to finance reached too few countries, and the intensity of support was not commensurate with countries' needs. Access to finance is indispensable for farmers and firms to fund their working capital and investment needs (including technology upgrades). Fifty-four percent of Bank Group client countries have little access to finance—that is, they score below the global median when measured by their access to commercial credit to agriculture. The World Bank reached only 57 percent of these countries with lending to improve access to finance. IFC reached 43 and 48 percent with its advisory services and investments, respectively. All were below the respective benchmarks of 66 and 50 percent. In addition, the intensity of support was not commensurate with country needs regardless of the Bank Group instrument. World Bank lending, IFC investments, and IFC advisory services are all implemented to the same extent in countries with low access to credit as they are in countries with higher access to credit. Box 2.3 provides examples of successful access to finance interventions supported by IFC.

Box 2.3. Supporting Access to Finance for Agrifood System Development

- **Turkey**: The International Finance Corporation (IFC) collaborated with a Turkish bank issuing Diversified Payment Rights to reach smallholders and double its client base in remote areas.
- **Côte d'Ivoire**: An IFC investment helped a local bank double its client base of small and medium enterprises and establish a profitable small and medium enterprise portfolio. IFC also collaborated with cocoa cooperatives to improve their logistic infrastructure and managerial capacities, allowing them to access finance for the first time.

Source: Independent Evaluation Group.

Bank Group interventions to address climate change adaptation and mitigation in agrifood sectors reach the majority of countries that need this type of support, and the intensity of this support is commensurate with countries' needs. The World Bank reached 77 percent of countries with high climate vulnerability with at least one lending project aimed at reducing climate vulnerability by implementing adaptation measures, such as making infrastructure more resilient against extreme weather events. IFC reached 39 percent of countries with high climate vulnerability with investments and 53 percent with advisory services. On average, twice as many Bank Group climate adaptation projects are implemented in countries with high climate vulnerability as in countries with low vulnerability, suggesting that intensity of support is commensurate with country needs.

Overall, a considerable share of countries in need—including FCS, LICs, and countries at the traditional stage of agrifood system development—do not receive relevant support. World Bank lending interventions reached on average about 70 percent of countries that need support, most with at least one lending operation. However, this reach still leaves a considerable share of countries in need without support. In each area, between 20 and 59 countries that needed the support did not receive it. Many of them were LICs (20 percent), FCS (25 percent), and countries at a traditional stage of agrifood

system development (34 percent). By comparison, IFC reached on average about 40 percent of countries that need support the most with both its investments and its advisory services, likely because of its overall smaller portfolio of investments (331) and advisory projects (210). For investments, this may also be because of IFC's need to manage risks across its investment portfolio, which leads it to invest very selectively in structurally weaker economies and countries at the early stages of agrifood system development.

A high-level portfolio assessment indicates that MIGA generally reached LICs and Sub-Saharan Africa. It was not possible to cover MIGA in the relevance assessment because of the limited number of projects in the agrifood system portfolio. MIGA underwrote 21 guarantee projects in support of agrifood systems. In line with MIGA's strategic priority to deepen its impact in LICs and FCS, MIGA's agrifood system portfolio exhibited a strong focus on LICs (41 percent), the relative highest share of Bank Group institutions. MIGA's presence was also particularly strong in Sub-Saharan Africa, with 85 percent of its projects located there in underwriting volume.

Assessing the Interventions Mix

Doing relevant work also implies providing countries with the right mix of interventions, reflecting the countries' needs across multiple areas. To this end, the team assessed whether each country received at least one intervention in each area where it scored below the median. A country that received support in all areas where it scored below the global median has received the right mix of interventions.

Productivity-enhancing measures were often provided without support for agricultural finance in countries that needed both types of support. Looking across the six areas in agrifood system development (table 2.1), the largest share of countries (33 countries) exhibits low performance in two areas: productivity and credit to agriculture. Of these 33 countries, only 20 countries (60 percent) received Bank Group support in both areas, with 11 countries not receiving support for access to credit.

Only about two-thirds of countries with multiple constraints on agrifood system development received the appropriate mix of interventions. Nineteen

countries suffer from multiple constraints (for example, low productivity, low access to finance, and low food safety standards). Only 13 countries, however, received support in all three areas where they face these challenges, and 19 countries did not benefit from a Bank Group response that would address their respective constraints. Support for improving food safety standards was missing in 4 of 19 countries, followed by support for improving access to finance (missing in 3 of 19 countries). Nine countries, mostly in Sub-Saharan Africa, perform inadequately in four areas: productivity, credit to agriculture, food safety standards, and business environment. Six of these countries have received support in all four areas, with the largest gaps in access to finance and food safety standards.

Country Partnership Frameworks and Analytical Work

CPFs have provided a detailed discussion of most of the policy issues relevant for agrifood system development. All CPFs reviewed by our team contained a substantive discussion on four of the six areas underlying productivity, inclusion, and sustainability. They did not, however, sufficiently cover climate change mitigation and sustainability standards and food safety issues. In the majority of the 38 CPFs reviewed (60 percent), the CPF also spells out how the future country program should be designed to address the identified policy issues.

The coverage of the agrifood system development challenges in CPFs was generally geared toward addressing country-level shortcomings. As country-level circumstances vary, CPFs can be expected to discuss areas at different depths. Generally, CPFs of countries that had significantly low performance in agrifood system development also had sufficiently deep assessments and discussions of the respective areas of concern. For example, all 19 countries with the lowest agricultural productivity had in-depth discussions of agricultural productivity in their CPFs. Eighty percent of countries (11 of 14) with the lowest financial inclusion rates had in-depth discussions of how to provide smallholder farmers and SMEs with financial products and services. Eighty-one percent of countries (13 of 16) with insufficient natural

resource management based on their high land degradation had in-depth discussions of natural resource management issues. Looking across all areas and component areas, 87 percent of CPFs of countries with low performance on an indicator contained a substantive discussion of the underlying constraints.

CPFs discuss productivity, inclusion, and sustainability in an integrated manner in only about half of the cases. About half (53 percent) of reviewed CPFs had adequate coverage of all three areas and the corresponding component areas; the treatment of these policy areas in the CPF was commensurate with the severity of the country's constraint. For example, the CPF for Ethiopia discusses all three policy areas in an integrated manner, outlining how to raise productivity while discussing social, financial inclusion, and sustainability issues (box 2.4).

Box 2.4. The Integrated Approach of the Ethiopia Country Partnership Framework

The Ethiopia Country Partnership Framework aims to increase agricultural productivity and commercialization, enhance the business and investment climate (through access to micro, small, and medium enterprise finance and by addressing land tenure), and improve spatial connectivity among production centers, markets, and secondary cities. It also addresses the constraints women face in value chains. The International Finance Corporation aims to improve the access of smallholder livestock producers and processors to quality inputs through support to reforms on licenses and permits. Moreover, World Bank operations are supporting resilience to drought and floods, improved natural resource management, and technologies and policies that reduce climate and disaster risks and land-based carbon emissions.

Source: Independent Evaluation Group.

A limited number of CPFs reflected food safety issues and related health and environmental sustainability standards in agrifood systems. Forty-two percent of the CPFs discussed food safety issues and sustainability standards, and only 21 percent provided guidance for operational programming. This

omission was most pronounced in countries where food safety standards are a real constraint. For example, among CPFs for countries with the lowest quality of phytosanitary legislation (such as Burkina Faso, Liberia, and Niger), 60 percent did not prioritize the issue. This is of special concern for countries at the early stages of agrifood system development, as smallholder farmers seek entry into value chains and require support to comply with sustainability standards. A notable exception is China, where the CPF indicates that the Bank Group will expand support for food safety and quality by working with regulatory agencies to build capacity and risk-based monitoring.

The Bank Group could further deepen its strategic engagement on climate mitigation in agriculture. Many CPFs missed the opportunity to highlight the sector's mitigation potential in countries with high greenhouse gas emissions from agriculture—even though adaptation and mitigation in agrifood sectors are generally geared toward countries that need this type of support the most. Only 58 percent of CPFs discussed climate change mitigation in agrifood sectors, and only 34 percent of CPFs outlined how programs would address mitigation in agriculture. The World Bank is addressing climate change mitigation in some countries with the highest greenhouse gas emissions from agriculture.[4] For example, in Brazil and China, the World Bank works with the governments to expand low-carbon or sustainable agriculture practices. However, 37 percent of CPFs in countries with comparatively high emissions from agriculture (7 of 19 countries reviewed) did not cite climate change mitigation, including, for example, Argentina, where agriculture and cattle farming account for 28 percent of greenhouse gas emissions.

Gender is a critical aspect of social inclusion in agrifood systems, but there is inadequate coverage of this issue in CPFs. Although all CPFs discussed gender, fewer than half indicated how country engagements would explicitly address gender in the agrifood system (for example, meeting the needs of female smallholders, including accessing land and finance). The Argentina and Morocco CPFs aim to promote gender equity and empowerment broadly, but there is no reference to this in relation to agrifood systems. By contrast, the Nigeria CPF discusses the numerous constraints that limit female farmer productivity and their ability to engage in agribusiness.

CPSDs helped inform the articulation of agrifood system development in CPFs but did not include issues of climate adaptation and mitigation and food safety standards. CPSDs assess opportunities for private sector–led growth to inform CPFs on private sector development. As most actors in the agrifood system are in the private sector, CPSDs are important for agrifood system development. Fifteen of the 24 CPSDs we reviewed provided an in-depth analysis of the agrifood systems. When we reviewed 7 selected CPSDs and their corresponding CPFs, we found that CPSDs had an impact on articulating a market-led agrifood system development plan in CPFs. This was the case with issues that are core to private sector participation: enhancing agricultural and agribusiness productivity and value addition, improving the agribusiness environment, advancing financial inclusion, and increasing market participation. However, the CPSDs we reviewed were less effective in informing CPFs concerning sustainability issues, especially climate change mitigation and adaptation, sustainability standards, and food safety. The seven CPSDs we reviewed lacked details on climate change mitigation, and only three of them addressed climate change adaptation. Additionally, only three of the seven CPSDs discussed sustainability standards and food safety.

[1] In addition to factors of risk, the reach of International Finance Corporation support to structurally weaker economies (for example, those with low access to finance rates) also depends on the resources needed to source, assess, structure, and commit viable projects in these countries that may have limited corporate capacities and uncompetitive production systems.

[2] Other limitations of this credit to agriculture indicator include the fact that for postprimary production (processing, logistics, trade, and so on) credit provision may not be entirely captured as Food and Agriculture Organization data that are coming from central banks and captures mainly credit of private/ commercial banks to agriculture (primary agriculture). Given that this indicator is used only to group countries in two clusters—that is, those that are "in need" of finance because of low level of credit to agriculture and those that are "not in need" because of already higher level of credit to agriculture—and assuming that the referred caveats apply evenly across all countries, the use of the proxy indicators is deemed a valid instrument.

[3] Results are similar when agricultural value added is used as an indicator.

[4] That is, greenhouse gas emissions relative to agricultural gross domestic product.

3 | Effectiveness of Activities in Improving Productivity, Inclusion, and Sustainability

The World Bank Group has generally been effective in contributing to agrifood system development by increasing productivity, sustainability, and inclusion of farms and agribusiness firms. However, important gaps remain across sectors and regions, especially in fragile and conflict-affected countries.

The World Bank has been relatively effective in improving the production and productivity of major staple cereals and livestock (poultry, dairy) and in leveraging institutional innovations (such as productive alliances and cooperatives) for improving the inclusion of smallholder farmers and small and medium enterprises into agrifood value chains. It has also been effective in promoting the uptake of climate-smart practices and food safety and environmental standards. However, challenges remain in all outcome areas in low-income countries, especially in Western and Central Africa, in countries at traditional stages of agrifood system development, and in less-favored areas, such as rainfed zones and those inadequately integrated with markets.

The agribusiness investments of the International Finance Corporation in support of agrifood system development contributed to increased productivity, but integrating smallholder farmers and small and medium enterprises into value chains remains a challenge. International Finance Corporation investments also face challenges in complying with environmental and social standards.

Bank Group interventions that target all three outcomes (productivity, sustainability, and inclusion) perform as well as or better than those that target one or two outcomes, showing that generating system-level effects is possible, despite potential trade-offs.

Bank Group interventions use a variety of approaches—including innovation, demonstration, and strengthening institutional capacity—to build on results and increase impact. However, promising pilots in low-income countries that increase yields or demonstrate sustainable practices (such as climate-smart agriculture) face challenges with scaling results because of difficulties in replicating models.

The recently established Agribusiness Sector Working Group has made significant progress in defining the strategy and cross-cutting themes for World Bank, International Finance Corporation, and Multilateral Investment Guarantee Agency collaboration. Despite positive examples, current collaboration remains largely informal, bilateral, undocumented, and difficult to trace and evaluate in the portfolio.

In this chapter, we examine the effectiveness of Bank Group agrifood system projects that aim to improve productivity, inclusion, and sustainability. The chapter includes evidence from our analysis of evaluative evidence of World Bank agrifood projects (across Global Practices) and IFC investments and advisory projects, supplemented by analysis of the KPI database, case studies, and review of external evidence (through structured literature reviews). Our analysis of the effectiveness of IFC investments focuses on IFC's direct investments in agribusiness development.[1] The project-level analysis covers the three dimensions of agrifood system development (productivity, inclusion, and sustainability). Our analysis does not, however, include an assessment of the complementarities among different projects that may have potential sector- or economywide effects. In chapter 4, we complement this chapter by identifying the factors that have influenced the effectiveness of Bank Group interventions.

The full portfolio consists of more than 1,600 Bank Group interventions approved during the evaluation period (FY10–20), with total financing of $50.5 billion. Of these, 609 were World Bank investments, 331 were IFC investments, 210 were IFC advisories, and 21 were MIGA guarantees. The World Bank's ASA portfolio consists of 495 projects. However, our effectiveness analysis excludes these projects because there is no self-evaluation system that would allow us to validate completion reports. About 77 percent of the closed World Bank lending operations, 37 percent of operationally mature IFC investments, 40 percent of closed IFC advisory, and 31 percent of operationally mature MIGA projects had Independent Evaluation Group (IEG) evaluative evidence at the time of preparation (table 3.1). Appendix B provides a more detailed description of the portfolio.

Table 3.1. World Bank Group Agrifood System Portfolio (approved fiscal years 2010–20)

Commitment Type	Projects (no.)				Commitment (US$, millions)
	All	Active	Closed[a]	IEG-evaluated	
Projects or investments	940	491	449	290	49,459
World Bank projects	609	298	311	239	39,932
IFC investments	331	193	138	51	9,527
Analytic and advisory activities	705	138	567	36	568
World Bank ASA	495	17	478	n.a.	152
IFC advisory services	210	121	89	36	416
MIGA guarantees	21	8	13	4	474
Total	1,666	637	1,029	330	50,501

Source: Independent Evaluation Group.

Note: World Bank projects include agrifood lending activities by several Global Practices. ASA = advisory services and analytics; IEG = Independent Evaluation Group; IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency; n.a. = not applicable.

a. "Closed" for World Bank and IFC advisory services projects; for IFC investments and MIGA guarantees, "not active" and/or "operationally mature."

Overall Effectiveness

World Bank projects targeting productivity, inclusion, or sustainability were effective overall in supporting agrifood system development. The World Bank was generally effective in increasing the adoption of improved inputs and sustainability-enhancing practices, narrowing yield gaps, and raising the market access and productivity of farmers and SMEs. Overall, 72 percent, 71 percent, and 78 percent of evaluated World Bank projects targeting productivity, inclusion, and sustainability, respectively, were rated successful (moderately satisfactory or above; table 3.2). This performance is compara-

ble to the Sustainable Development Practice Group, which has 73 percent of projects rated successful.

Table 3.2. World Bank Projects by Outcome Category, Income Group, and Institution

		Share of Evaluated Projects Rated MS+ (%)					
		Income classification			Institution		
Outcome	Evaluated Projects (no.)	LIC	LMIC	UMIC	IDA	IBRD	All
Productivity	236	70	71	75	68	76	72
Inclusion	140	71	68	81	66	81	71
Sustainability	109	72	87	76	73	82	78
Overall[a]	239	70	72	75	68	76	72

Source: Independent Evaluation Group.

Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; LIC = low-income country; LMIC = lower-middle-income country; MS+ = moderately satisfactory or above; UMIC = upper-middle-income country.

a. This row reports on the total number of projects evaluated. Individual projects could target multiple outcomes.

However, some effectiveness gaps remain in LICs, lower-middle-income countries (LMICs), and countries at the traditional stage of agricultural development; the Western and Central Africa Region experiences major gaps. Performance on productivity, inclusion, and sustainability outcomes was slightly lower in LICs, International Development Association (IDA) countries (table 3.2), and countries at the traditional stage of agrifood system development (table 3.3). (For a definition of the stages of agrifood system development, see box 3.1.) Project performance was particularly low in Western and Central Africa, with success rates in the range of 44–49 percent for the different outcomes (table 3.3).

Table 3.3. World Bank Projects by Outcome Category, Stage of Agrifood System Development, and Region

Outcome	Evaluated Projects (no.)	Share of Evaluated Projects Rated MS+ (%)						
		AFSD stage			Selected Regions			All
		Traditional	Transitional	Integrated	AFE	AFW	SAR	
Productivity	236	70	76	73	78	49	87	72
Inclusion	140	68	79	77	77	49	86	71
Sustainability	109	67	88	84	81	44	100	78
Overall[a]	239	69	77	73	78	49	87	72

Source: Independent Evaluation Group.

Note: AFE = Eastern and Southern Africa; AFSD = agrifood system development; AFW = Western and Central Africa; MS+ = moderately satisfactory or above; SAR = South Asia.

a. This row reports on the total number of projects evaluated. Individual projects could target multiple outcomes.

Box 3.1. The Three Stages of Agrifood System Development

Agrifood systems tend to pass through the following three major developmental stages:

Traditional: The traditional stage is typical of agrarian economies (World Bank 2007), in which incomes are still low and a large share of the population relies on agriculture and lives in rural areas. Most rural households are not integrated into markets, and production is mainly for home consumption. Short supply chains prevail with limited coordination. Production relies heavily on family labor, with little use of capital or quality and safety standards.

Transitional: In the transitional stage, income levels have started to rise, a growing share of the population has migrated to towns, and nonfarm income sources have increased in importance. Food production methods are becoming increasingly sophisticated, making greater use of purchased inputs and replacing labor with capital. Supply chains tend to be longer to deliver food from the countryside to urban centers.

(continued)

Box 3.1. The Three Stages of Agrifood System Development (cont.)

Production is more diversified, and consumption of high-value foods such as meat, fish, dairy products, and fruits and vegetables rises. Application of food quality and safety standards is common.

Integrated: The integrated stage is prevalent in highly urbanized or industrialized economies, in which a large share of the population has achieved middle-income status, lives in cities, and no longer relies on agriculture for its livelihoods. Food production methods have become highly sophisticated; in many cases, they are dominated by specialized agribusiness firms with the resources and know-how to take advantage of cutting-edge global technologies. Long supply chains deliver food to urban populations. Environmental sustainability standards and food quality and safety control are in high demand.

Sources: McCullough, Pingali, and Stamoulis 2008; Morris, Sebastian, and Perego 2020; Reardon et al. 2019.

Efforts to close productivity gaps, improve inclusion, and increase resilience for farmers and SMEs in LICs and IDA countries, especially in Western and Central Africa, face constraints that undermine their success. These include underdeveloped supply chains and irrigation systems, inadequate infrastructure, weak midstream value-adding sectors, ineffective extension services, weak producer groups, and high risks resulting from climatic shocks, fragility, and conflict.

IFC agribusiness investments and advisory services also contributed to boosting productivity, but IFC investments faced challenges in fostering inclusion and implementing E&S standards. To measure success across the three dimensions, we took the IEG ratings of the relevant projects as per the IEG-validated Extended Supervision Reports for IFC investments and Project Completion Reports for IFC advisory projects. As the project evaluation systems of both IFC investments and advisory services are conducted on a sample basis, the ratings presented in the next section are not statistically representative. IFC investments had positive results, even in LICs and countries at the traditional stage of agrifood system development. Almost all evaluated advisory services projects supported productivity growth, but

performance was lower in LICs and countries at the early stages of agrifood system development. Although IFC's agribusiness investments overall had a positive record in boosting market integration, the inclusive business investments faced challenges in fostering inclusion and integrating smallholder farmers and SMEs into value chains. Also, more than one-third of IFC agribusiness investments did not meet IFC's E&S requirements.

Productivity

World Bank

The World Bank was generally effective in increasing the adoption of improved inputs, narrowing yield gaps, and raising the production and incomes of farmers and SMEs. Productivity is enhanced when producers can adopt improved technologies and have access to markets and when farmers have access to small-scale irrigation. Almost all evaluated World Bank projects (n = 239) supported productivity improvements, whether through technology-led (supply-side) interventions, market-led (demand-side) interventions, or a mix of both. About 72 percent of closed projects targeting productivity were successful. In addition, about 80 percent of productivity-related KPIs (for example, percentage increase in yield, marketed volume, or net income) were attained. The World Bank was most successful at improving the productivity of major staple cereals (rice, wheat, and maize) and livestock (dairy and poultry), often prioritized by countries for national food security. Investments in farm production inputs (such as improved seeds, fertilizers, and livestock feed) and in technologies and improvements in market links increased incomes for producers.

The World Bank's interventions aimed at increasing productivity were less effective in LICs, LMICs, and countries at the traditional stage, especially in Western and Central Africa. Generally, interventions in LICs and LMICs (70–71 percent moderately satisfactory or above [MS+]) and countries at the traditional stage of agrifood system development (70 percent) were less effective than those in UMICs and countries at the transitional stage (75–76 percent; tables 3.2 and 3.3). Interventions in Western and Central Africa (49 percent MS+) were considerably less effective than those in

Eastern and Southern Africa (78 percent). The effectiveness of development policy operation in Western and Central Africa, which accounted for about half of the Western and Central Africa portfolio, was 29 percent.[2] Low project effectiveness partly reflects the difficult conditions that these countries face, especially those in fragile, conflict, and post-conflict situations. For example, only about half of the maize area in Africa is planted using modern seeds (compared with 90 percent in South Asia and more than 60 percent in Latin America). Average fertilizer use in Sub-Saharan Africa is the lowest in the world—11 kilograms per hectare, compared with 150 kilograms per hectare in South Asia and 72 kilograms per hectare in Latin America (Fuglie et al. 2020; Langyintuo 2020).[3] Project design and implementation factors (for example, targeting and implementing capacity) are also key. A review of a sample of unsatisfactory projects (n = 17) implemented in LICs, including 10 in Western and Central Africa, showed that project effectiveness is often limited by (i) underdeveloped or largely ineffective extension and service delivery systems; (ii) deficient infrastructure and weak supply chains that increase transaction costs to producers and service providers; (iii) underdeveloped processing activities to create better market opportunities for producers; (iv) limited capacity of producers and farmer groups to deal with complex value chains that require meeting certain standards; (v) policy constraints, including access to land and finance for farmers and SMEs; and (vi) climate, epidemic, and conflict-induced shocks (in some countries). These findings are consistent with existing studies (Barrett et al., forthcoming; de Brauw and Bulte 2021; Langyintuo 2020; World Bank 2007). The Liberia Tree Crop Revitalization project experienced some of these issues (box 3.2).

Box 3.2. Liberia Smallholder Tree Crop Revitalization Support Project

As part of a post-conflict regeneration of Liberia's agriculture commodity sector, the Tree Crop Revitalization Support investment project aimed at revitalizing four export tree crops (cocoa, coffee, oil palm, and rubber) by providing access to finance, inputs, technologies, and markets to smallholders growing these crops. However, the project did not reach its objectives. Unsuccessful project aspects include the following:

» Outgrower programs were not established;

(continued)

Box 3.2. Liberia Smallholder Tree Crop Revitalization Support Project (cont.)

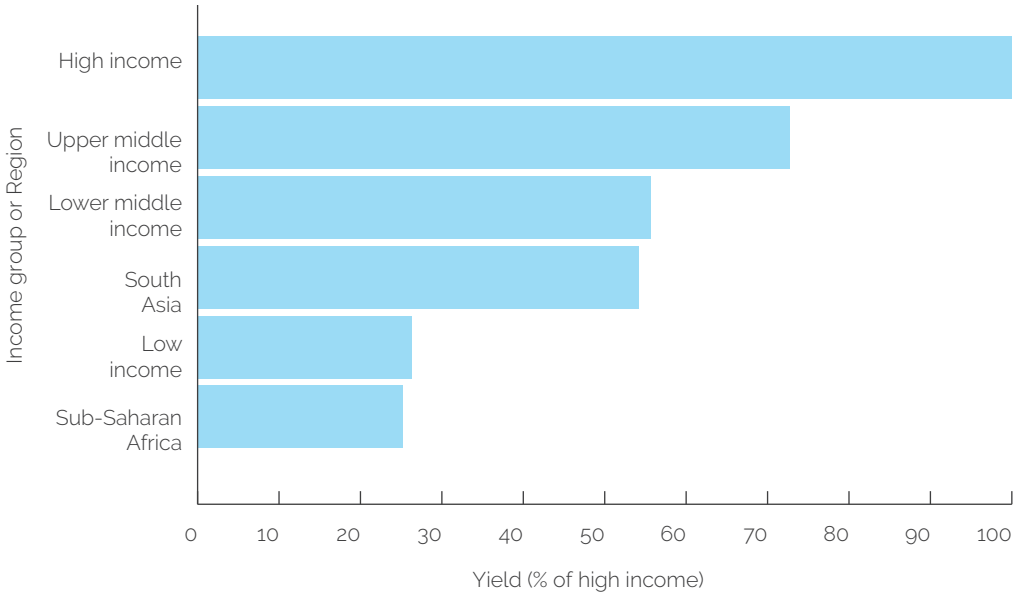
- Cooperatives supported by the project were unable to access markets;
- The government was unable to secure long-term credit to growers of oil palm and rubber (which require four to six years after planting before harvesting);
- Unmitigated risks made it difficult to establish partnerships with commercial banks to provide credit to allow farmers to maintain tree crops on the farm.

Source: Independent Evaluation Group.

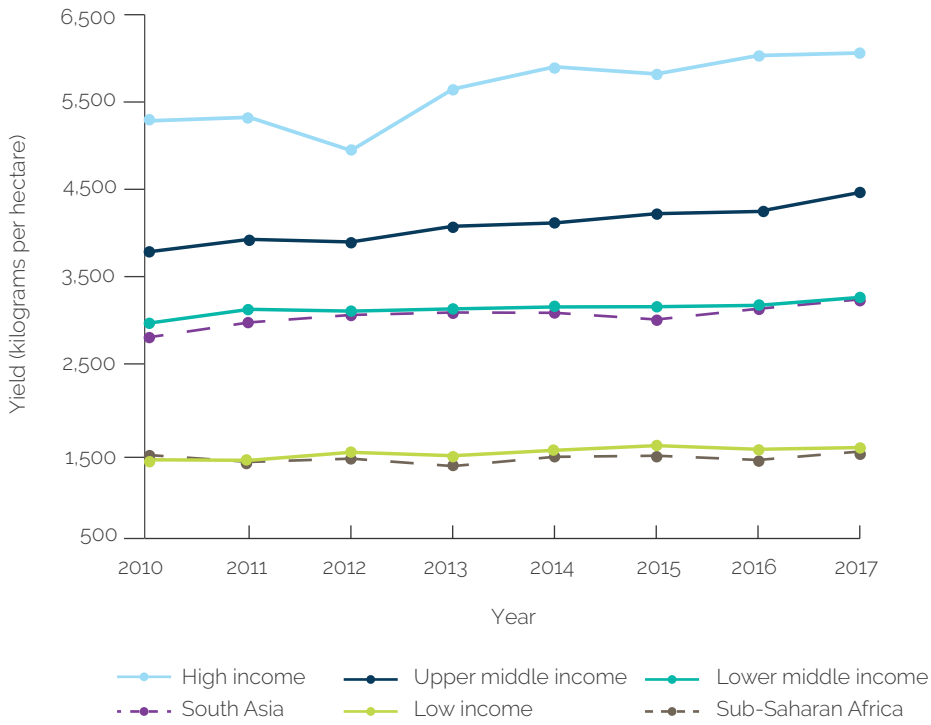
The World Bank has supported innovative efforts to increase productivity in LICs and countries at the traditional stage, but these efforts have not helped close yield gaps, especially in rainfed and less-favored production environments in Africa. World Bank projects helped improve yields in the geographic areas targeted by its interventions, including LICs and countries at the traditional stage of development, as evidenced by the success rates of the productivity projects (table 3.2). Crop yields, however, remain low at the national level in LICs (figure 3.1), including in Africa and less-favored areas such as rainfed regions with insufficient market access where adoption of improved seed varieties and other inputs has been low (Fuglie and Marder 2015).[4] For example, the Kenya Agricultural Productivity and Agribusiness Project aimed to revitalize the public extension system through contracted private service providers and increased access to inputs and services. The intervention led to an increase in the yields of several products in pilot areas, including milk, honey, maize, sorghum, and beans. However, the model could not be replicated or expanded widely because farmer cooperatives and common interest groups could not pay for contracted service providers after project closure, except in the case of some high-value products such as dairy.

Figure 3.1. Cereal Yields by Country Income Group and Region

a. Average cereal yields as a percentage of those in high-income countries, 2010–17



b. Average annual cereal yields, 2010–17



Source: Independent Evaluation Group, based on World Bank Development Indicators database.

International Finance Corporation

All the IFC agribusiness investments that we evaluated aimed to increase productivity. The main purpose of IFC agribusiness investments is to modernize or expand the capacity of productive assets in agribusiness (for example, investments in processing facilities or storage). Using the IEG ratings for business success as a proxy for productivity, 60 percent of these agribusiness projects increased productivity, which is higher than the average for the Manufacturing, Agribusiness, and Services (MAS) portfolio (44 percent) and the MAS nonagribusiness portfolio (33 percent).[5] IFC investments that succeeded in increasing productivity were designed based on good understanding of the market and stress testing during due diligence that considered adverse exogenous factors that could affect the use of the productive assets.

Although the number of evaluated projects does not allow us to make definite assessments, IFC agribusiness investments boosted productivity, even in countries at the traditional stage of agrifood system development. We assessed 35 projects, of which 4 were in LICs and 6 in traditional countries. The majority (75 and 67 percent, respectively) were successful in lifting productivity (table 3.4). For example, an East African dairy operation in a LIC, supported through an IFC investment and advisory successfully ramped up its farm and firm operations, increased the firm's capacity use, and achieved better prices because of increased production quality. Further analysis showed that investments in animal protein and primary agricultural production have greater success in achieving productivity improvements. However, packaged food and beverages lag.

Table 3.4. International Finance Corporation Agribusiness Investments by Outcome Category, Stage of Agrifood System Development, and Income Classification

Outcome[b]	Share of Evaluated Projects Rated MS+ (%) [no. evaluated projects]						
		By AFSD stage[a]			By income classification[a]		
	All	Traditional	Transitional	Integrated	LIC	LMIC	UMIC
Productivity	60 [35]	67 [6]	100 [1]	53 [17]	75 [4]	50 [8]	67 [18]
Inclusion	66 [35]	83 [6]	100 [1]	59 [17]	75 [4]	63 [8]	61 [8]
Inclusive business	55 [11]	100 [4]	0 [0]	40 [5]	100 [3]	50 [2]	40 [5]
Sustainability	59 [34]	50 [6]	100 [1]	63 [16]	25 [4]	63 [8]	65 [17]
Overall[c]	60 [35]	83 [6]	100 [1]	47 [17]	75 [4]	63 [8]	61 [18]

Source: Independent Evaluation Group.

Note: Country classification details are as in table 3.3. AFSD = agrifood system development; LIC = low-income country; LMIC = lower-middle-income country; MS+ = mostly successful or better; UMIC = upper-middle-income country.

a. Since some countries cannot be classified, the number of projects by AFSD stage does not sum to the total.

b. The project rating for business success was used as a proxy for productivity; similarly, private sector development was used as a proxy for inclusion, and environmental and social was used as a proxy for sustainability.

c. This row reports on the development outcome rating for all projects evaluated.

Almost all evaluated IFC advisory services projects supported productivity growth, and many were effective, but performance was lower in LICs and countries at the traditional stage of agrifood system development. More than two-thirds (68 percent) of IFC advisory services successfully contributed to productivity objectives (table 3.5), well above the three-year average of IFC advisory services (40 percent) and IFC MAS advisory services (55 percent).[6] However, IFC advisory services projects achieved lower ratings in LICs and in countries at the traditional stage, largely because of weaker firm-level capacity in LICs. Case study evidence suggests that IFC's advisory services complemented its agrifood system investments by providing capacity building before or in parallel with the investment.

Table 3.5. International Finance Corporation Advisory Services by Outcome Category, Stage of Agrifood System Development, and Income Classification

Outcome	Share of Evaluated Projects Rated MS+ (%) [no. evaluated projects]						
		By AFSD stage			By income classification		
	All	Traditional	Transitional	Integrated	LIC	LMIC	UMIC
Productivity	68 [34]	50 [10]	88 [8]	64 [11]	40 [5]	74 [19]	70 [10]
Inclusion	67 [27]	33 [6]	88 [8]	67 [9]	25 [4]	73 [15]	75 [8]
Sustainability	73 [15]	0 [2]	100 [4]	80 [5]	0 [2]	83 [6]	86 [7]
Overall[a]	69 [36]	54 [11]	89 [9]	63 [11]	40 [5]	76 [21]	70 [10]

Source: Independent Evaluation Group.

Note: Country classification details are as in table 3.3. AFSD = agrifood system development; LIC = low-income country; LMIC = lower-middle-income country; MS+ = mostly successful or better; UMIC = upper-middle-income country.

a. This row reports on the complete portfolio of projects evaluated. Individual projects could target multiple outcomes.

Inclusion

World Bank

The World Bank has been effective in improving the inclusion of smallholder farmers, cooperatives, and SMEs in income-generating agrifood-related activities. About 58 percent of IEG-evaluated projects (n = 140) aim to enhance inclusion, defined mainly as increased access and participation of smallholder farmers and SMEs in agrifood-related production and market activities. When possible, we have assessed inclusion of women, but we have not evaluated inclusion of other specific groups, such as young people or vulnerable beneficiaries, because of limited data. About 71 percent of the inclusion projects achieved their objectives (table 3.2). In addition, the analysis of the KPIs showed that 79 percent of inclusion-related indicators (for example, female entrepreneurs receiving matching grants, or SMEs trained in processing) were fully achieved. The World Bank has been particularly successful in improving

the access of smallholder farmers (including women) and SMEs to knowledge, finance, inputs, technologies, equipment, and markets. The increased participation of farmers and SMEs in more productive activities (such as processing, logistics, and marketing) also provided income benefits for these groups.

However, the World Bank has been less successful at integrating smallholder farmers and underserviced groups in less favorable regions. Case studies show that targeting poor people and farmer groups facilitated horizontal coordination among farmers,[7] participation of smallholder farmers in markets, and ties with SME input and service providers and agribusiness firms. In India, the National Dairy Support Project included activities to support equity, inclusiveness, and participation; facilitated diversification of agriculture into high-value dairy production; and supported integration of small-scale rural milk producers into organized milk value chains. This effort benefited 3.7 million milk producers, including 744,000 women and more than 1.1 million small and marginal farmers and minorities. Similarly, the Integrated Agricultural Productivity Project (IAPP) in Bangladesh helped double the productivity of milk of smallholder crop-livestock farmers, thereby increasing own milk consumption by 96 percent while boosting their milk sales fourfold and their earnings fivefold. However, a case study of the Kenya Agricultural Productivity and Agribusiness Project showed that farmer groups and service providers were less effective in integrating farmers in less-favored regions (such as drought-prone areas and those with underdeveloped markets), especially for low-value commodities (for example, sorghum and maize in Kenya).

The World Bank was also less successful in promoting inclusion in countries at early stages of agrifood system development. The portfolio review showed that the average effectiveness of World Bank inclusion interventions was lower in client countries in the traditional stage (68 percent) than in countries in the transitional stage (79 percent; table 3.3). Effectiveness at inclusion was also lower in the Western and Central Africa Region (49 percent) than in Eastern and Southern Africa (77 percent) or South Asia (86 percent). The World Bank was also less effective in LICs (71 percent) and LMICs (68 percent) than in UMICs (81 percent) and less effective in IDA countries (66 percent) than in International Bank for Reconstruction and Development countries (81 percent; table 3.2).

International Finance Corporation

Generally, IFC's agribusiness investments had a good record on market integration—that is, including actors in value chains. This evaluation could not assess IFC's effectiveness in supporting financial inclusion because only seven investments in the relevant portfolio had been evaluated. Relatively high private sector development outcome ratings (66 percent) suggest generally satisfactory results regarding market integration (building and expanding value chains), including in LMICs and LICs (table 3.4), although these ratings are not statistically representative for the entire agribusiness portfolio in these countries. IFC investments that were successful at including actors into value chains were designed to reflect the needs of these actors and, at times, included simultaneous support on access to finance. Inclusion in value chains can be facilitated by digital solutions that allow for better information flow across actors, such as price information between aggregators and smallholder farmers (Pouw, Bush, and Mangnus 2019). For example, through IFC's support to a cocoa supply chain in an LMIC in Western Africa, 62 cooperatives with 60,000 farmers were able to lease 132 new trucks, allowing these cooperatives to enter the supply chain and build credit histories.

IFC's inclusive business investments faced challenges in integrating smallholder farmers and SMEs in agricultural value chains. Of all agribusiness investments in support of agrifood system development, 35 percent were inclusive business investments, which work with the poorest people (sometimes referred to as the "base of the pyramid"). Only 55 percent of these investments were rated successful, compared with 66 percent for the remaining agribusiness portfolio. This is expected, given the high risk of the countries in which the poorest people live. Lower private sector development ratings of 55 percent versus 66 percent for the remaining agribusiness portfolio suggest difficulties with the market integration of small actors, who often face challenges in meeting required quality and efficiency standards.

A particularly severe challenge for inclusive business investments is to remain financially viable. Only 45 percent of inclusive business projects were rated successful with respect to business results, compared with 67 percent for the rest of the portfolio. These lower business success rates suggest that it is difficult for lead firms to integrate smaller actors into value chains while

maintaining efficiency, reliability, and quality to compete in commercial markets. Many small actors operate informal businesses before accessing value chains, face challenges with achieving quality standards, lack managerial capacity, or engage in side selling when the spot market price exceeds the contracted one. Other factors (such as whether farmers perceive themselves to be treated fairly by the company or value a long-term stable relationship with it) also play a role (World Bank 2018b).

About three-quarters of IFC advisory services supported inclusion activities, and two-thirds were rated in the satisfactory range, but projects in LICs and countries at the traditional stage were less successful. The overall success rate of IFC advisory services on inclusion (67 percent) was similar to the productivity outcome (68 percent). Although ratings are not statistically representative, those advisory services that were evaluated were less effective in achieving inclusion targets in LICs (25 percent) and countries at the traditional stage (33 percent; table 3.5). The successful projects contributed to inclusion through building the capacity of firms, farmers, and cooperatives to reach markets and integrate into supply chains.

Sustainability

World Bank

The World Bank has contributed to enhancing sustainability through its support for the increased uptake of public food safety standards and technical environmental practices. About 45 percent of IEG-evaluated projects achieved sustainability outcomes, and 78 percent of these projects were rated in the acceptable range (MS+; table 3.2).[8] The effectiveness of sustainability projects was lower in countries at the traditional stage (67 percent) than in those at the transitional stage (88 percent) and lower in Western and Central Africa (44 percent) than globally (78 percent). A large share of sustainability projects that focused on supporting climate-smart agriculture, management of natural resources and resource efficiency (for example, using less land and water), and food safety or environmental standards were successful. In addition, 82 percent of KPIs related to food safety and environmental sustainability standards (for example, farms and firms adopting

sustainable practices or compliant with food safety or environmental standards) were achieved.

Although World Bank projects demonstrated sustainable practices (climate-smart or food safety standards), their wider adoption was limited in LICs, pointing to the difficulties of scaling up. The conditions for adoption of climate-smart practices that generate benefits in all three outcome dimensions (productivity, inclusion, and sustainability) are often highly context- and location-specific (FAO 2021). Adoption of sustainable practices is enhanced when trade-offs are minimized, and interventions demonstrate tangible economic benefits to incentivize behavioral changes. Where there are competing objectives or trade-offs in expected benefits, addressing the limiting factors and aligning incentives is key to increasing climate-smart investments (World Bank Group 2015b). For example, an impact evaluation of the Rwanda Land Husbandry, Water Harvesting, and Hillside Irrigation Project showed that adoption of climate-smart practices by beneficiaries in project areas remains low. Only one in four plots of beneficiary households are irrigated, and adoption has not increased over time, affecting the scalability of the interventions. Uptake of labor-intensive irrigation was limited by an inability to hire labor or low profitability (Byiringo et al. 2020). A positive example is the Montenegro Institutional Development and Agriculture Strengthening Project. Designed to help Montenegro meet European Union preaccession requirements, this project gave matching grants to eligible farmers and agroprocessors for wider uptake of good agricultural practices and system upgrades. This intervention has enhanced compliance with public food safety standards and ensured scalability of the program.

World Bank support for market-led sustainability standards was prominent where diversification toward high-value sectors or export commodities was feasible. Adoption of more enforceable and scalable market-led or private standards is higher in urbanizing markets and large firms working in high-value products or export-oriented sectors (such as coffee, tea, bananas, avocados, and cocoa). However, the requirement to meet stringent private sustainability standards has often prevented farmers from diversifying production and participating in such high-value sectors. The World Bank Agriculture Sector Support Project in Côte d'Ivoire, implemented in collaboration with IFC, supported smallholders producing export crops through

training in good agricultural practices, phytosanitary standards, and establishment of performance contracts to enhance compliance with standards. In India, the National Dairy Support Project supported small-scale dairy farmers and cooperatives and built village-based milk procurement systems with milk quality testing. These interventions allowed small-scale farmers to diversify toward high-value dairy production, increase milk prices, and reduce waste. They created incentives for dairy farmers to meet market-led food safety standards and benefit from the organized dairy value chains, in addition to increasing farmers' own consumption of milk.

International Finance Corporation

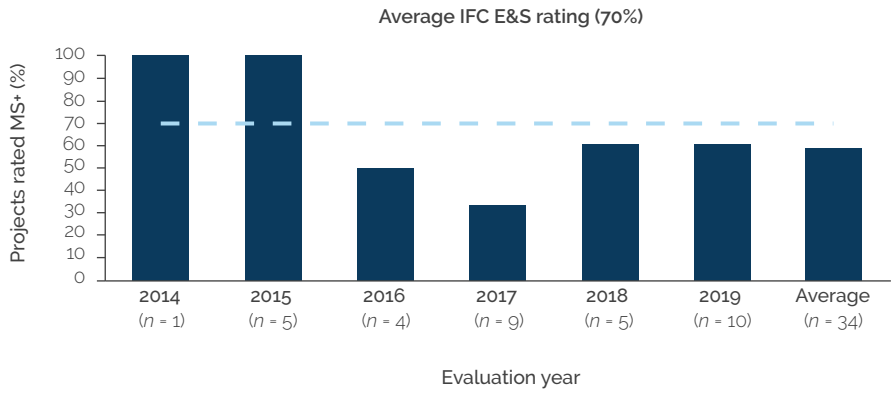
IFC investments with components directly targeting the sustainability of the agrifood system had good levels of effectiveness, rated successful or better. About 21 percent of the portfolio (n = 11) had targeted activities to support climate-smart agriculture or related environmental sustainability, food safety, or resource efficiency. These investments were in Europe and Central Asia, Latin America and the Caribbean, and East Asia and Pacific and attained sound levels of effectiveness (64 percent successful or better, which is higher than the average for the productivity outcome; ratings not reflected in table 3.4).

However, apart from climate-smart agriculture projects, IFC agribusiness investments faced challenges with implementing E&S standards. IFC contributions to sustainability outcomes are assessed by the capacity of IFC investments to comply with the required E&S standards. At the onset of the investment process, IFC agribusiness-related investments trigger a higher share of the eight IFC E&S Performance Standards more frequently than investments in other sectors. They are also slightly riskier than the overall MAS portfolio of investments (that is, they have a higher share of category A and B projects).

More than one-third of evaluated agribusiness projects did not meet IFC's E&S requirements. The average E&S effects rating for the evaluated agribusiness interventions of the agrifood system portfolio is 59 percent meeting E&S requirements, about on par with the wider agribusiness and forestry sector portfolio as a whole (56 percent). Despite the limited

statistical representativeness, this result suggests room for improvement in E&S performance. The average of 59 percent is below the long-term average of 70 percent for IFC (figure 3.2). The E&S performance was weak in countries at the traditional stage of agrifood system development. In LICs, only 25 percent of investments met IFC's E&S requirements, compared with 63 and 65 percent in LMICs and UMICs, respectively, congruent with an earlier IEG assessment (World Bank 2021a). Even though clients' E&S performance improved during 2018–19, in line with a better E&S performance of the MAS portfolio, about 40 percent of IFC agribusiness projects still require attention.

Figure 3.2. Environmental and Safety Ratings for International Finance Corporation Agribusiness Investments by Evaluation Year



Source: Independent Evaluation Group.

Note: AFS = agrifood system; E&S = environmental and social; IFC = International Finance Corporation; MS+ = mostly successful or better.

The recurring issues on E&S performance include challenges related to occupational health and safety, wastewater management, implementation of E&S action plans, and the Bank Group Environmental, Health, and Safety Guidelines. IFC clients have been consistently raising food safety standards in the dairy and grain sector with their state-of-the-art processing plants, continuous introduction of better processing technology, and new high-quality products. However, the clients are yet to develop adequate environmental, health, and safety systems or enhance compliance with the remaining issues on wastewater management practices, use of personal protective equipment, and health and safety conditions for workers.

Nevertheless, several agribusiness investments achieved and even exceeded food safety and E&S standards. Success in meeting E&S standards was associated with existing client capacity and commitment and IFC's support in strengthening E&S capacity. This was the case, for example, with IFC's support to an Eastern African grain mill, which showed commitment to E&S issues from the onset of the investment process. After the investments, the milling operation met the relevant IFC Performance Standards and received certification for an international standard defining the requirements for effective control of food safety. Similarly, all E&S standards of MIGA-supported agribusiness intervention in East Africa were satisfactory, proactive, and responsive to MIGA requests.

IFC advisory services also supported firms and farms with improving environmental sustainability. About 40 percent of IEG-evaluated IFC advisory services targeted activities to improve sustainability. Such contributions were embedded in activities that (i) increase the capacity of farms and firms in implementing or complying with food safety standards, and (ii) adopt improved technologies and methods for addressing climate change and sustainability standards. The effectiveness of advisory services in improving sustainability outcomes was 73 percent (table 3.5). Yet no projects in LICs or traditional stage countries reached a satisfactory level because of a lack of firm-level capacity and commitment. To help IFC clients (including investment clients in IDA FCS countries) better meet E&S standards, IFC increased its efforts by establishing in 2019–20 an integrated Environmental, Social, and Governance advisory services program.[9]

System-Level Effects and Trade-Offs

The Bank Group is increasingly supporting system-level effects through multipurpose interventions that foster the development of more productive, inclusive, and sustainable agrifood systems. System-level effects are defined in terms of projects that integrate all three outcomes (productivity, inclusion, and sustainability). Because the case studies were assessed at a project level in terms of the three outcomes for agrifood system development, actual sector- or economywide effects that may generate additional multipliers in the agrifood economy are not measured. The World Bank has increased its orientation toward targeting more outcomes at once. Multiple targeting was not frequent in the evaluated (older) portfolio because only 56 of 239 projects (23 percent) pursued all three outcomes. By contrast, 205 of 609 projects (34 percent) in the total (more recent) World Bank portfolio did so. For IFC advisory, 32 percent of all projects pursued all three outcomes. Many projects (41 percent) pursued productivity and inclusion outcomes, although only 7 percent pursued productivity and sustainability outcomes.

Interventions that targeted all three outcomes and minimized trade-offs generally performed better than narrower interventions. Evaluated World Bank projects that combined all three outcomes (n = 56) performed at 80 percent MS+, higher than the average of 72 percent (table 3.6). For IFC advisory, evaluated projects that combined all three outcomes (n = 13) also performed better than the average (77 percent MS+ for projects targeting all three outcomes versus 69 percent on average).[10] Thus, the one-third of World Bank projects and IFC advisory services targeting system-level effects did so with a higher success rate than projects targeting fewer outcomes. This suggests that projects that bundled all three outcomes (productivity, inclusion, and sustainability) maximized synergies or minimized trade-offs among the outcomes.

Table 3.6. World Bank and International Finance Corporation Advisory Services Projects That Span Combinations of Agrifood System Development Outcomes

Outcome Combinations	World Bank				IFC Advisory Services			
	All projects		Evaluated projects		All projects		Evaluated projects	
	Count (no.)	Share of total (%)	Count (no.)	Share with outcomes MS+ (%)	Count (no.)	Share of total (%)	Count (no.)	Share with outcomes MS+ (%)
Productivity	74	12	47	68	31	15	5	80
Productivity and inclusion	200	33	83	65	87	41	14	57
Productivity and sustainability	122	20	50	76	15	7	2	50
All three outcomes	205	34	56	80	67	32	13	77
Other	8	1	3	67	10	5	2	100
Total	609	100	239	72	210	100	36	69

Source: Independent Evaluation Group.

Note: IFC = International Finance Corporation; MS+ = moderately satisfactory or above (mostly successful or better).

The case studies provide several examples of projects that combined the three outcomes and made positive contributions at the system level. Of the 11 World Bank cases included in the purposive sample for the case-based analysis, 6 (in Bangladesh, Bolivia, Ethiopia, India, Montenegro, and Vietnam) contributed positively to increasing productivity, inclusion, and sustainability. For example, the Livestock Competitiveness and Food Safety Project in Vietnam helped livestock (chicken and pig) producers build links with slaughterhouses and markets, which increased incomes for farmers and facilitated the uptake of more sustainable practices and public food safety standards by farmers and firms. The Bolivia Rural Alliances Project supported productive farm investments to improve market links and inclusion of farmers, leading to increases in land productivity, revenues, and uptake of sustainable practices. Similarly, of the 6 cases purposively included from the

private sector (IFC, MIGA, or both), three contributed positively to productivity, inclusion, and sustainability. These included IFC advisory services to an East African dairy company, providing extension services to farmers and improving food safety while integrating them into the dairy supply chain, and IFC advisory services in support of the cocoa supply chain in West Africa.

Trade-offs are a potential risk in agrifood system-level interventions. Productivity projects, for example, can improve inclusion through better access to and participation of smallholder farmers and SMEs in value chains. However, there could be thresholds beyond which attempts to reach the poorest people will incur costs and reduce productivity. Such a potential trade-off is demonstrated in the case of IFC's inclusive business projects, which exhibit lower productivity when we look at their business success as a proxy. Similarly, climate-smart agriculture (for sustainability projects) could face challenges in achieving triple-win outcomes (productivity, adaptation, and mitigation) and may require careful analysis of synergies and potential trade-offs under local conditions (FAO 2021).[11]

The Bank Group has mitigated some of these trade-offs using various instruments and incentives. For the World Bank, these have included matching grants (for example, in Montenegro and Vietnam). The matching grants have allowed farms and firms to upgrade systems to meet food safety standards or improve agricultural practices for climate resilience or managing risks. In addition, IFC has used blended finance as one of its approaches to managing trade-offs and reaching frontier markets. For example, IFC used blended finance in a dairy project in East Africa, which was financed through the Global Agriculture and Food Security Program Private Sector Window.

Improving and Sustaining Results

Bank Group interventions leverage a variety of approaches—including innovation, demonstration, and strengthening institutional capacity—to sustain development outcomes and improve results to increase impact. The technology generation, promotion, and monitoring approach used by the Bangladesh IAPP has been mainstreamed into other agricultural projects (World Bank 2016a). Best practices in hillside irrigation demonstrated by the Rwanda Land Husbandry, Water Harvesting, and Hillside Irrigation Project

have influenced the country's strategic plan for agricultural transformation. Not all interventions are sustained, however. Although the Kenya Agricultural Productivity and Agribusiness Project's piloting and demonstration of a contracted extension service delivery model contributed to the emergence of private service providers, the model was not sustained except for a few high-value enterprises such as dairy. The farmer groups and cooperatives were weak and unable to sustain or expand the model—only about one-third were active after project closing, with many operating under capacity (World Bank 2018d). This shows that the cooperative approach may not succeed when farmer groups are weak or unable to overcome more complex rural market imperfections (Bijman, Muradian, and Schuurman 2016; Bizikova et al. 2020; World Bank 2018d).

Scaling agrifood system interventions requires long-term strategies and well-designed monitoring and evaluation systems, and incentives to address constraints to scale. Successful interventions are those that plan for and build in growth approaches from the outset, reduce risks, target beneficiaries, and create enabling conditions for transformational change. Because agrifood systems operate within complex social, economic, and ecological settings, expansion also requires long-term strategies, sustained effort, and partnerships to support and cultivate desired behavioral changes (de Janvry, Macours, and Sadoulet 2017; Takahashi, Muraoka, and Otsuka 2020). An example is the World Bank's long-term engagement in the dairy sector in India, supporting multiple operations through capacity building and investments that created the enabling conditions for nationwide promotion of dairy cooperatives and integration of small-scale producers into organized supply chains. Digital technologies that reduce costs, enhance delivery of optimized information and services to users, and promote evaluation and learning facilitate growth (Koerner et al. 2018; Schroeder, Lampietti, and Elabed 2021). As demonstrated by labor-intensive irrigation in Rwanda, diffusion of climate-resilient practices can be limited by low profitability and other barriers, suggesting the need for additional incentives or interventions to unlock limiting constraints (for example, grants to finance more sustainable investments, such as in the Montenegro and Vietnam projects).

Scaling agrifood system development also requires adapting interventions to the local conditions. The flexibility of the productive alliance approach has

improved its scalability. The literature finds that adoption and diffusion of agricultural technologies, practices, and related innovations requires adaptation to local conditions, improvement of the capacity of service delivery actors, and increased access to finance for users to overcome credit constraints (Acevedo et al. 2020; Heiman, Ferguson, and Zilberman 2020; Koerner et al. 2018). Since the early 2000s, more than 20 productive alliance projects have been implemented in Latin America and the Caribbean. Productive alliance projects in Brazil, Colombia, and Central America demonstrated how this model can be adapted to countries at different market and agrifood systems development stages. Since then, the flexible approach has been adapted to support agrifood system development in projects in Asia, Eastern Europe, and Sub-Saharan Africa (World Bank 2016b).

A range of pioneering IFC projects in underdeveloped markets demonstrated the role of the private sector and the scalability of the underlying interventions, producing sectorwide effects.[12] Generally, IFC's agribusiness investments exhibited sound results regarding private sector development, with 68 percent of projects rated successful. This suggests that these investments influenced the market through demonstration effects and by contributing to market integration. For example, IFC support to a dairy firm in East Africa not only strengthened the supply chain of raw milk but also helped diminish perception risks. This raised the confidence of financiers to enlarge its size, leading to financial inclusion. The firm is seen as a role model in the sector, having received awards from industry bodies and the host country's government.

MIGA guarantees mitigated the political risks to sustainability of development results, but scalability and sectorwide effects were limited by low demand for political risk insurance in the agribusiness sector. MIGA guarantees for agribusiness companies in LICs (for example, in East Africa) contributed to supporting the flow of foreign direct investment to IDA countries. However, there is no evidence of adoption of promoted practices beyond the project. The scalability or replicability of the approach is limited by the low demand for political risk insurance in the agribusiness sector, which tends to be smaller compared with other risks.

World Bank Group Collaboration

The Bank Group has recognized the need for collaboration to mobilize private finance and increase results to achieve sectorwide or system-level outcomes. In 2019, it established the Agribusiness Sector Working Group to "serve as [a] mechanism to drive operational connections among World Bank, FCI [Finance, Competitiveness, and Innovation Global Practice], IFC, and MIGA operations" (World Bank 2020a). This working group aims to deliver on the Maximizing Finance for Development approach and apply creating markets initiatives consistently across the agribusiness sector. Key interviews with IFC, World Bank, and MIGA staff indicated that collaboration has improved and has been moderately effective, especially at improving knowledge sharing and laying the foundations for improved alignment. At the strategic level, the working group is moving in the right direction, including joint presentations to the Board and identifying several scalable cross-cutting themes (for example, SME financing, smallholder farmer development, irrigation, food safety, and food loss) as priorities for collaboration to drive agribusiness development.

However, Bank Group collaboration remains largely informal and bilateral and is hard to identify and assess in the portfolio. Operational collaboration takes different forms: cofinancing, collaborative sequencing, or coordinating related parallel projects (World Bank 2017f). Interviews indicated that collaboration remains largely bilateral (IFC with World Bank and IFC with MIGA), rarely connecting all three institutions at the operational level.[13] The existing bilateral collaboration is also difficult to find in the portfolio. A flag for joint operations in the World Bank's Business Intelligence portal does not provide details on the type of collaboration or counterpart projects (product combinations) from IFC and MIGA. Current collaboration is also inadequate for facilitating higher-level strategic alignment and operational connections at the country level. The Agribusiness Sector Working Group lacks a coordinator or secretariat to facilitate knowledge flow, set agendas, or monitor progress. Interviews raised the need for the working group to improve touch points across Global Practices while enhancing coordination with IFC and MIGA. World Bank internal collaboration has improved since the realignment, with regional directors playing a facilitating role.

Contributions to agribusiness development are stronger when collaboration is planned and happens as part of the country strategy. About two-thirds of the sampled CPFs and CPSDs refer to opportunities for joint Bank Group response in the agribusiness sector. Collaborative activities in Rwanda and Mali provide examples. In Rwanda, IDA, IFC, and MIGA instruments were used to support a long-term development plan for promoting commercialization of agriculture. IFC and MIGA support for a grain milling firm made significant contributions to agribusiness development. In Mali (the world's second-largest producer of shea nuts), most shea nuts are sold raw or processed locally into low-quality artisanal shea butter. The Mali CPF supports a joint IDA-IFC business plan, whereby IFC, with funding from the Private Sector Window of the Global Agriculture and Food Security Program, is helping to build the country's first shea butter processing plant, and the World Bank is providing competitive grants to shea cooperatives linked to the processing company.

[1] Our analysis excludes investments in related sectors because we lack evaluative evidence.

[2] Some of the factors associated with the weak performance of development policy operations were weak prior actions to influence outcomes and low government capacity or ownership to implement complex policy reforms. The share of projects below the line for quality at entry (62 percent) and government performance (65 percent) was higher for development policy operations than investment project financing—that is, 40 and 23 percent, respectively. See further discussion in chapter 4 (box 4.1).

[3] The average fertilizer use for Sub-Saharan Africa (2010–18) was 16 kilograms per hectare, which compares with 149 kilograms per hectare for Latin America and the Caribbean, 161 kilograms per hectare for South Asia, and 135 kilograms per hectare globally (World Bank indicator data, https://data.worldbank.org/indicator/AG.CON.FERT.ZS?name_desc=false).

[4] Average cereal yields (2010–17) in low-income countries and in Sub-Saharan Africa are less than half of those in lower-middle-income countries and in South Asia and one-quarter of those in high-income countries (figure 3.1, panel a). Although cereal yields grew by more than 1–2 percent annually in other Regions, yields in Sub-Saharan Africa and low-income countries remained almost unchanged (growing by only 0.24 percent annually). Yields in Sub-Saharan Africa are even lower for major dryland crops (such as sorghum, millets, and cassava) or legumes (such as beans and groundnuts) grown in less-favored areas (rainfed or lacking market access; FAO 2021).

[5] The project-level financial efficiency, as assessed under "business success" in project-level evaluations, was taken as a proxy for productivity. The business success of an investment project relies on the productivity of the firm's assets, making this a useful proxy for productivity.

[6] International Finance Corporation advisory services support firms and farms with becoming more productive through technology-led productivity, market and financial inclusion, and market-led productivity.

[7] Farmer groups include common interest groups and cooperatives (as in Ethiopia and Kenya), productive alliances (as in Bolivia and Peru), and water user associations (as in Bangladesh and Rwanda).

[8] Because the evaluated projects provide no data on actual impacts in relation to climate resilience, mitigation, or environmental sustainability outcomes, the effectiveness of these activities is assessed in terms of uptake of sustainability standards or practices.

[9] However, the Independent Evaluation Group cannot express an opinion on the effectiveness of this program because it is just being implemented.

[10] We did not carry out this analysis for International Finance Corporation investments because most pursue all three outcomes.

[11] Studies find examples of both synergies and trade-offs, which indicates that the realization of synergies (triple wins) is strongly location- and context-specific (FAO 2021).

[12] Sectorwide effects are those that affect all of a particular sector (such as the poultry or dairy sector) in a given country.

[13] The interviewees emphasized that agribusiness is a difficult sector for political risk insurance because of small and fragmented value chains, limiting the agency's ability to collaborate widely. Hence, agribusiness is a low-margin and small business area for the Multilateral Investment Guarantee Agency; it has the lowest gross exposure. This limits a trilateral collaboration across the World Bank Group.

4 | Success Factors for Effectiveness of Interventions in Agrifood System Development

We identify primary and enabling factors of success for the World Bank Group and lessons on investments that are specific to the International Finance Corporation. The primary factors that enhance agrifood system development are as follows:

Access and adoption of improved agricultural production technologies and sustainable practices. These can be successful when market access is unconstrained. Learning-by-doing approaches are particularly effective in facilitating the adoption of agricultural production technologies and sustainable practices.

Integration of market access with improved production technologies and sustainable practices, especially in low-income countries and countries at the traditional stage of development. Market access can be improved by establishing viable market links among producers and buyers and developing market infrastructure.

The enabling factors that can augment the benefits of primary factors are (i) support to producer groups, (ii) behavioral changes to facilitate the adoption of sustainable practices and develop the business skills of the actors of agrifood systems, and (iii) support tailored to the specific needs of smallholder farmers and small and medium enterprises.

Lessons from the agribusiness work of the International Finance Corporation identify specific factors for successful private investments: careful sponsor selection, stress testing during due diligence, and balancing trade-offs between development effectiveness and profitability.

Overall Project Design and Implementation

General lessons on effective World Bank project design and implementation apply to agrifood system interventions. These include design features such as clear scope and theory of change, careful identification and targeting of beneficiaries, well-selected policy interventions adapted to the country context and counterpart capacity, strong government ownership, and adequate assessment of the political economy. They also include implementation features such as presence in the field, proper client oversight, and robust coordination across agencies and levels of government. A desk review of selected agrifood-focused development policy loans highlighted the importance of some of these factors in achieving agrifood systems outcomes (box 4.1).

Similarly, learning from overall lessons on effective IFC and MIGA project design and implementation is essential for IFC and MIGA agrifood systems interventions. These lessons include the importance of a thorough due diligence process and deal preparation, prior analytical work (including value chain and market studies), sponsor experience and financial standing, and client capacity. A key success factor for implementation is collaboration among IFC's dedicated client relationship manager, portfolio team, investment team, and E&S team.

Box 4.1. Factors Associated with Development Policy Loan Contributions to Agrifood System Development Outcomes

Morocco's first and second development policy loans in support of the agricultural development strategy for fiscal years 2011–14 improved the efficiency of domestic agrifood markets, enhanced economic benefits for smallholder farmers, and increased access to agricultural services. Positive factors included tailored prior actions designed to improve agricultural sector performance; strong alignment among prior actions, expected results, and the monitoring and evaluation framework; coordination among counterpart agencies; and clear links between supported policy reforms and other instruments to translate the reforms to outcomes at the local level.

(continued)

Box 4.1. Factors Associated with Development Policy Loan Contributions to Agrifood System Development Outcomes (cont.)

By contrast, Ghana's agriculture development policy loan series (fiscal years 2009–13) achieved only modest progress in improving the management of soil and water resources and overall agricultural productivity and growth. Insufficient upstream reforms and fragmented prior actions that were spread across several policy areas limited the achievement of development outcomes.

Sources: World Bank 2015 (Morocco), 2017d (Ghana).

World Bank, IFC, and MIGA interventions also face some common external constraints. These include underdeveloped markets, state engagement in contestable sectors, governance issues (including political instability, policy unpredictability, overcentralization, and corruption), legal and regulatory challenges, and limited access to infrastructure and finance. Developing country markets may also carry added risks that can be difficult to mitigate, including climatic shocks, pandemics, and market volatility. Although we did not analyze the impact of external constraints on the effectiveness of agrifood system interventions, designing programs to mitigate these risks is essential to achieving good outcomes.

Factors of Success Specific to Agrifood Systems

The remainder of this chapter focuses on factors of success that are specific to agrifood systems. To identify factors of success, the team purposively selected 17 case studies grouped into four project typologies (focus areas): (i) support for agricultural production (supply-side approaches), (ii) support for a combination of production and market access (a supply-and-demand approach) with a focus on staples, (iii) support for a combination of production and market access with a focus on high-value crops and livestock, and (iv) private sector investments in production and market access, mostly in high-value products (table 4.1). The evidence from these selected cases is expected to provide lessons relevant to similar interventions in the

portfolio. About 41 percent of the 17 case studies are in LICs, and 47 percent are in LMICs; 59 percent are in countries at the traditional stage of agrifood system development, and 29 percent are in countries at the transitional stage. A portfolio review and two structured literature reviews complemented the case study approach. (For more details, see appendix A for the case study design and appendix C for a synthesis of the main findings.)

Table 4.1. Purposive Sample of Cases Used to Derive Factors of Success

Focus Area	Projects	Country or Region	Income Category	Stage of AFSD
World Bank production-focused interventions (supply)	1. Irrigation, Rural Livelihoods, and Agricultural Development	Malawi	LIC	Traditional
	2. Integrated Agricultural Productivity	Bangladesh	LMIC	Traditional
	3. Land Husbandry, Water Harvesting, and Hillside Irrigation	Rwanda	LIC	Transitional
World Bank production and market-access interventions (mainly food staples; supply and demand)	4. Agricultural Productivity and Agribusiness	Kenya	LMIC	Traditional
	5. Agricultural Growth Project	Ethiopia	LIC	Traditional
	6. Rural Alliances	Bolivia	LMIC	Traditional
	7. Sierra Rural Development	Peru	UMIC	Integrated
World Bank production and market-access interventions (high-value crops and livestock; supply and demand)	8. Agriculture Sector Support (cocoa, rubber, cotton, palm oil, and cashews)	Côte d'Ivoire	LMIC	Transitional
	9. Institutional Development and Agriculture Strengthening (production, processing, food safety, and EU standards)	Montenegro	UMIC	Integrated
	10. National Dairy Support Project (production, marketing, processing, and quality and safety)	India	LMIC	Transitional
	11. Livestock Competitiveness and Food Safety (production, marketing, processing, and safety)	Vietnam	LMIC	Transitional

(continued)

Focus Area	Projects	Country or Region	Income Category	Stage of AFSD
IFC and MIGA production and market-access interventions (mostly high-value products; supply and demand)	12. Dairy processing (IFC)	Eastern Africa	LIC	Traditional
	13. Grain milling (IFC)	Eastern Africa	LIC	Traditional
	14. Grain milling (IFC)	Southern Africa	LIC	Traditional
	15. Cocoa value chain (IFC)	Western Africa	LMIC	Transitional
	16. Poultry operation value chain (MIGA)	Eastern Africa	LIC	Traditional
	17. Cattle operation value chain (MIGA)	Southern Africa	LMIC	Traditional

Source: Independent Evaluation Group.

Note: AFSD = agrifood system development; EU = European Union; IFC = International Finance Corporation; LIC = low-income country; LMIC = lower-middle-income country; MIGA = Multilateral Investment Guarantee Agency; UMIC = upper-middle-income country.

The projects selected for the in-depth analysis had overall positive outcomes. Most of the 17 case studies positively affected productivity, inclusion, or sustainability (table 4.2). Fewer cases were effective in enhancing sustainability (65 percent of cases) than inclusion (88 percent of cases) or productivity (76 percent of cases).

World Bank interventions focused only on production were less successful than approaches that combined production and market support. Projects that combined supply- and demand-side interventions were more successful than supply-side-only interventions at achieving productivity outcomes (75 percent versus 33 percent success) and inclusion outcomes (100 percent versus 67 percent). They were almost equally successful at achieving sustainability outcomes (table 4.2).

Table 4.2. Case Studies: Effects on Outcomes

Focus Areas	Cases (no.)	Effective Cases by Outcome (no.) [%]		
		Productivity	Inclusion	Sustainability
World Bank production-focused interventions (supply side)	3	1 [33]	2 [67]	2 [67]
World Bank production and market access interventions (mainly food staples; supply and demand)	4	3 [75]	4 [100]	2 [50]
World Bank production and market access interventions (high-value crops and livestock; supply and demand)	4	3 [75]	4 [100]	3 [75]
IFC and MIGA private investments (production processing, and value addition; supply and demand)	6	6 [100]	5 [83]	4 [67]
Total	17	13 [76]	15 [88]	11 [65]

Source: Independent Evaluation Group case-based analysis.

Note: Because there are few cases, percentage values should be interpreted carefully. See appendix C for details on the case studies. IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency.

The analysis identified three categories of success factors: primary, enabling, and IFC specific. The primary factors are (i) technologies and practices to improve production and sustainability and (ii) integration of production technologies and practices with access to markets. The enabling factors, which can augment the benefits of the primary success factors, are (i) support to producer groups, (ii) behavioral changes to facilitate the adoption of sustainable practices and develop the business skills of the actors in agrifood systems, and (iii) support tailored to the needs of SMEs and smallholder farmers. Other success factors specific to IFC agrifood system activities are carefully selecting sponsors, conducting stress testing for investments in agribusiness, and balancing trade-offs between development effectiveness and profitability.

Technologies and Practices to Improve Production and Sustainability

Interventions supporting production through technology improvement and adoption of sustainability standards and practices (the supply-side approach) can be successful where market constraints do not limit productivity. Technology interventions may include improved seed, new crop varieties, new livestock breeds, pest and disease control, climate-smart practices such as soil and water management and reduced tillage, and small-scale irrigation. Access to finance interventions for smallholders to buy farm inputs and technologies are important complements of technology interventions. The World Bank's Bangladesh IAPP is an example of a successful supply-side project. The project's support for technology improvements and adoption of sustainable practices to increase production of crops, livestock, and fisheries for which there was high market demand led to increased productivity, sustainability, and inclusion (box 4.2). Production-only interventions are likely to increase productivity where market access is not a major constraint, and small producers can sell their surplus production at attractive prices.

Box 4.2. Adapting Technology to Boost Productivity in Bangladesh

The Integrated Agricultural Productivity Project in Bangladesh enhanced the productivity of agriculture by supporting technology development and adaptation, including yield-increasing and production-intensifying technologies and practices for conserving surface water and enhancing the efficiency of irrigation. The project provided capacity building and technology extension support to farmers, increasing the availability of improved crop varieties, livestock, and fish breeds. The improved technologies benefited 51,000 farmers. Milk productivity more than doubled, milk consumption increased by 96 percent, milk sales increased fourfold, and milk sales earnings increased fivefold. The interventions significantly increased seasonal crop sale earnings of targeted farmers compared with nonbeneficiaries, enhancing inclusion. The project enhanced sustainability by putting more than 27,000 hectares under improved irrigation.

Source: Independent Evaluation Group case study based on World Bank (2016a) and (2017a).

However, when market constraints are limiting, which is often the case in LICs and countries at the traditional stage of agrifood system development, focusing only on supporting production could undermine effectiveness. Where market access is limited, large returns on investment and achieving productivity, inclusion, and sustainability outcomes require complementing the introduction of improved production technology with efforts to improve market access (Ashraf, Giné, and Karlan 2009; Barrett et al., forthcoming; Deutschmann et al. 2021). Two of the three projects that focused on supporting production technologies (Malawi and Rwanda) had no significant impact on productivity (table 4.2), and one had no impact on inclusion and sustainability. By focusing on production where market access was limited, the Malawi Irrigation, Rural Livelihoods, and Agricultural Development Project had a limited impact on productivity. Smallholder farmers struggled to find sustainable market outlets (World Bank 2021c). As a result, although the productivity of both maize and rice improved in the early implementation phase, it stagnated or became more volatile over time (World Bank 2021c). The Land Husbandry, Water Harvesting, and Hillside Irrigation Project in Rwanda—which addressed supply-side constraints first and introduced marketing activities only later—did not affect productivity or household income.[1]

Integrating Production Technologies and Markets

Integrating production and access to market support is associated with enhanced effectiveness. Underdeveloped local markets and insufficient access to external markets are common in LICs and traditional-stage countries, where complementing supply-side activities with market access activities is critical. All eight World Bank case studies that integrated technology and market access approaches had a positive impact on inclusion; six (75 percent) had positive effects on productivity, and five (63 percent) had positive effects on sustainability (table 4.2). Across cases, complementary supply and demand interventions that improved access to inputs, advisory services, technologies, and markets increased productivity and inclusion more than supply-only interventions. IFC and MIGA projects integrating supply and demand interventions also had high effectiveness across all dimensions. All six projects had positive impacts on productivity, five out of six (83 percent) had positive impacts on inclusion, and four out of six (67 percent) had positive

impacts on sustainability. IFC usually enables market access for SMEs and smallholders through lead firms that buy products from small providers. See box 4.3 for project examples that provide evidence of these results.

Box 4.3. Effective Projects Integrating Production Technologies and Markets

Through its investment and advisory services to a milk powder processing company in East Africa, the International Finance Corporation supported the organization of a dairy supply chain. It helped develop off-take agreements and establish aggregation centers offering fair, transparent, and timely payment to dairy farmers. The International Finance Corporation support led to the integration of about 10,000 farmers into the supply chain and the production of 320,000 liters of milk per day (against a target of 240,000 liters per day), and it improved the social inclusion and mobility of small farmers. In parallel, the company developed a distribution network that increased access to foreign markets.

The World Bank Ethiopia Agricultural Growth Project supported farmer access to crop and livestock technologies, climate-smart practices (including small-scale irrigation), and markets. An impact evaluation found that the project had a positive, statistically significant effect on improving irrigation and drainage services (on more than 10,000 hectares of farmland) and on crop output supplied to the market. More than 58,000 farmers (including more than 12,000 women and 6,000 young people [mainly from ages 15 to 24]) benefited from improved irrigation. Climate-smart land practices, adopted on 217,000 hectares, led to increased vegetation.

Source: Independent Evaluation Group case study based on World Bank (2017b) and IFC data on the East Africa dairy project.

Investments in market infrastructure and equipment enhance market access for farmers and SMEs to diversify production to high-value products. Market infrastructure—including logistics, infrastructure for cold chains (for example, refrigerated trucks and warehouses), and storage for bulking equipment—is critical to increasing market access, especially for diversification to high-value, perishable products. One example is the IFC dairy intervention in Eastern Africa (box 4.3), which complemented financing for a dairy pro-

cessing plant with the construction of raw milk collection points. Another is the World Bank's India National Dairy Support Project, which provided production technology with support for upgrading milk collection infrastructure for small producers (such as milk coolers and quality testing equipment). Support for digital agriculture solutions (such as an automated milk collection system that allows real-time quality testing) increased efficiency and facilitated growth into new areas. As in the case of the IFC-supported dairy intervention in Eastern Africa (box 4.3), small-scale dairy farmers in India benefited from enhanced access to markets. In addition, small milk producers in India also benefited from access to high-value markets and increased adoption of food safety and quality standards (World Bank 2020c, 2021b).

Enabling Factors

Supporting Producer Groups and Cooperatives

Producer organizations can help the actors of agrifood systems, especially smallholders and small firms, adopt new technologies and practices and access markets, increasing inclusion, productivity, and sustainability. Most projects that aimed to increase inclusion supported producer organizations to facilitate access to inputs, technologies, services, and markets. Producer organizations come in several forms, such as common interest groups and cooperatives in Ethiopia and Kenya, farmer groups in productive alliances in Bolivia and Peru, dairy and livestock cooperatives in India and Vietnam, and water user associations in Bangladesh and Rwanda. Fifteen of the 17 case studies (88 percent) showed that producer organizations' support for farms and SMEs improved inclusion by facilitating access to advisory services, inputs, irrigation, other farm technologies, or enhanced links with buyers. For example, in Vietnam, the Livestock Competitiveness and Food Safety Project helped livestock producers build links with slaughterhouses and markets. The producer groups and cooperatives facilitated sharing knowledge and improved collective bargaining (purchasing power), increasing production efficiency through joint purchases from input providers, leading to 3–5 percent cost savings in animal feed expenses.

Group-based approaches also strengthen farmer organizations and mobilize new group formation, facilitating the integration of small-scale producers into value chains. For example, dairy cooperative societies supported by the National Dairy Support Project in India helped integrate smallholder milk producers into organized markets based on a stable, transparent, merit-based approach. The project organized more than 853,000 milk producers into dairy cooperative societies across 40,000 villages. Six new dairy producer companies were established under the National Dairy Support Project and supported more than 834,400 small-scale dairy producers. Dairy cooperative societies and dairy producer companies facilitated coordination of the dairy value chain (World Bank 2020c, 2021b). Similarly, the success of the IAPP was based on the cohesion of beneficiary groups anchored in unions and villages with the support of a community facilitator. The establishment of more than 7,000 Livelihood Field Schools by the IAPP trained and improved production packages for more than 180,000 crop, livestock, and fish farmers (World Bank 2016a, 2017a).

Behavioral Changes to Adopt Sustainable Business Models and Develop Managerial Skills

Cultivating behavior changes among farmers and agrifood SMEs enhanced the adoption of more sustainable business models and the development of managerial skills. Key success factors included incentivizing behavior change among producers to facilitate uptake of better practices and sustainability standards and developing managerial skills among farmers and SMEs.

Concerted attention to incentivizing behavior change among producers can change attitudes toward more sustainable business models and practices. Three of the four World Bank projects supporting high-value crop-livestock activities facilitated the uptake of improved food safety and sustainability standards. For example, the Vietnam Livestock Competitiveness and Food Safety Project prompted a mind-set shift within farmer groups and government agencies, reinforced by capacity building and institutional strengthening. Before the project, livestock production was scattered, and farmers sold pigs and poultry in wet markets whose processing facilities failed to meet food safety and environmental standards. The project used cultural levers—including peer-to-peer learning, peer pressure to strengthen

compliance, and branding for social recognition—to influence farmers to adopt new livestock practices. The organization of producers into associations helped achieve certification and accreditation, and improved food safety and environmental practices. By project close, 70 medium-to-large slaughterhouses and 300 small ones complied with national environmental standards (World Bank 2019b).

Support for developing business plans and skills among farmers, cooperatives, and SMEs can contribute to success. Providing IFC advisory services to develop the business skills of agrifood actors in the value chain helped them prepare for IFC investment. For example, IFC successfully supported West African cocoa cooperatives through training to enhance their capacity to operate in a commercial environment, which allowed them to use the IFC risk-sharing facility.

The Latin America productive alliance model has effectively strengthened the business development capabilities of smallholders and small firms. Productive alliance models in Latin America supported producer groups by developing business plans through productive investments and technical assistance for business development. In the Bolivia Rural Alliances Project, this support resulted in a 73 percent average increase in the income per producer of the alliances, with increases ranging from 51 percent for cocoa to 136 percent for beef (World Bank 2018a).

Tailoring Interventions to the Needs of Farmers and Agrifood Small and Medium Enterprises

Clear targeting and tailoring of Bank Group interventions to the needs of the clients and beneficiaries is critical. Tailoring the approach to farmers and SMEs includes both explicitly targeting them and using participatory delivery models.

For interventions focused on enhancing agricultural production, an explicit targeting of smallholder farmers was essential to achieving inclusion. Partnering with an experienced lead firm with a clear road map for targeting smallholder farmers and SMEs was key to success for IFC and MIGA interventions in improving inclusion. Evidence from case studies and earlier IEG studies shows that clients that already have records of working with the

base of the pyramid—for example, by engaging with supply chain farmers through technical assistance and provision of inputs or collection infrastructure—have better business success and a higher potential for increasing their outreach to the base of the pyramid (World Bank 2018d).

A participatory delivery model with the bottom-up engagement of stakeholders contributes to achieving outcomes. Centering project design and implementation on bottom-up engagement—including technical support, sensitization, and mobilization of local communities—gives stakeholders opportunities to select interventions in line with their needs. For example, the Bangladesh IAPP engaged beneficiaries at design and thus increased their ownership of the adoption of irrigation and water harvesting infrastructure, leading to improved production technologies and management practices for crops, livestock (milk), and fish production.

Factors Specific to the International Finance Corporation

Three corporate factors derived from a review of IFC experience are relevant for the design of IFC agrifood systems interventions. These factors are (i) careful sponsor selection and stress testing during due diligence, paying special attention to the risks of protected value chains reliant on tax exemptions or protection from competition through trade policy restrictions; (ii) consideration of the level of diversification of a firm's product portfolios and destination markets; and (iii) balancing trade-offs between development effectiveness and profitability.

For IFC, factors of success included selecting high-quality sponsors paired with stress testing during due diligence, which was of value for investments in protected value chains. High-quality sponsors were those with sufficient managerial and financial capacity, regional operating experience, and the ability to respond to unforeseen events by cutting costs or reorganizing business activities. For example, for its investments in an East African dairy operator, IFC carried out up-front due diligence with detailed firm, sponsor, and market assessment. The due diligence allowed IFC to identify risks and build custom features into the loan structure to manage project risks. A careful due diligence

process is particularly important when investing in protected value chains—that is, those that benefit from tax exemptions or reduced competition because of policy restrictions (tariff and nontariff barriers) that limit imports or market entry into the sector and provide protection to firms operating in the industry. Subsidies and protectionism are more common in agrifood value chains than in other sectors. Although investments in protected value chains appear lucrative at first, they can also interrupt business success when reduced or abolished, which need to be anticipated in the due diligence. For example, IFC's support to an East African grain milling operation initially enjoyed a range of tax incentives. However, their elimination and the subsequent introduction of value-added tax on wheat flour products hurt project performance.

To a much greater degree than firms in other sectors, agrifood firms need diversified product portfolios and destination markets to weather macroeconomic shocks, including losses from foreign exchange and price fluctuations. Export-oriented agribusiness exposed to foreign exchange fluctuations can offset foreign exchange losses in one market by gains in other markets—that is, they can use their natural hedging positions from revenue sources in other currencies. Although IFC cannot influence the level of diversification in the short term, it could select investee companies with sufficient levels of diversification or work with them toward diversification as they stay engaged (box 4.4).

Box 4.4. Product and Market Diversification as a Natural Hedge to Navigate Macroeconomic Uncertainties

Vulnerability to undiversified markets was seen in the International Finance Corporation's investment in an Eastern European fruit juice producer, which concentrated 80 percent of its exports in the Russian Federation. When the Russian ruble depreciated by almost 100 percent because of the 2014 economic crisis, the firm's revenues decreased significantly. By contrast, an Eastern European industrial pork producer weathered macroeconomic shocks because of high product and market diversification. Although pig prices dropped during the country's currency depreciation in 2014, the firm made up for these forgone revenues by selling its own feed components (corn and soy) in US dollar–denominated export markets.

Source: Independent Evaluation Group.

IFC can balance trade-offs between development effectiveness and profitability to reach frontier markets by using its portfolio approach and blended finance. The IFC 3.0 strategy calls for active portfolio management across sectors, geographic areas, and instruments to optimize the balance among development impact, financial sustainability, and risk (IFC 2020). An active portfolio management approach can help IFC offset the negative risk-adjusted return on capital (RAROC) from investments in frontier markets through above-average RAROC rates from other, more profitable investments. For example, IFC's agribusiness investments in LICs have a RAROC of –11 percent, which is much lower than the envisioned corporate RAROC of 8 percent. This is because (i) such investments are smaller (about half the dollar volume of those in UMICs); (ii) they often take longer and hence consume more resources to acquire and reach commercial closure, resulting in higher operational costs for IFC; and (iii) they have higher losses because of higher country and commercial risks. Blended finance can help reduce the financial risk of investments in frontier markets, at times setting in motion high-risk projects with positive development impacts, including in IDA and FCS countries (World Bank 2019a). In the agribusiness sector, the Global Agriculture and Food Security Program Private Sector Window plays an important role in supporting projects designed to improve the livelihoods of smallholder farmers in LICs. The Global Agriculture and Food Security Program has been facilitating support outside IFC's traditional investment and advisory activities, leading to benefits beyond the financing instrument itself through technical assistance and links to the client company and related beneficiaries (World Bank 2017e). Examples include IFC support for a dairy operator in East Africa and a cocoa value chain in West Africa.

[1] An impact evaluation found that there was no statistically significant difference in total household income (excluding seasonal agricultural income) between project-supported and unsupported sites (World Bank 2018d).

5 | Conclusions and Recommendations

The Bank Group has been broadly relevant in responding to countries' agrifood system development needs, but gaps remain in scaling up and better targeting support. Bank Group interventions supporting agrifood system development reached many countries that needed this support, including to increase agricultural productivity, improve social inclusion, and mitigate and adapt to climate change. However, support to increase access to agricultural finance, improve the enabling business environment, and enhance food safety standards did not reach many countries with relevant needs. Although the targeting of countries with relevant interventions works quite well overall, it could be improved. In fact, while the intensity of Bank Group support (the number of interventions per country) for enhancing food safety standards, social inclusion, and climate mitigation is commensurate with need, the intensity of Bank Group support to increase agricultural productivity, enhance access to agricultural finance, and improve the enabling business environment is not. In addition, only about two-thirds of countries with multiple constraints on agrifood system development received an appropriate mix of interventions.

The World Bank has generally been effective in supporting agrifood system development, but significant gaps remain in Western and Central Africa and in rainfed areas, and some gaps remain in countries at the traditional stage of development. Increasing adoption of more sustainable and climate-resilient practices also continues to be a challenge. The World Bank has been largely successful in supporting productivity gains in food crops (mostly major cereals) and livestock (for example, poultry and dairy). However, effectiveness of interventions remains low in Western and Central Africa and in high-risk rainfed areas with inadequate market access, which also have high levels of rural poverty and are affected most by climate change. In addition to project design and implementation issues, factors that undermined effectiveness include ineffective extension and service delivery systems, weak

producer groups and implementing capacity, weak market infrastructure and underdeveloped supply chains, weak midstream value-adding sectors, and high risks resulting from climatic shocks or conflict. The World Bank's inclusion investments have facilitated market access and smallholder farmer and SME participation, but challenges remain in countries at the traditional stage (including LICs and LMICs). Sustainability investments that promote climate-smart practices and regulatory standards have led to improved environmental sustainability, but hurdles remain in fostering maintenance and building on successful pilots.

IFC agribusiness investments contributed to market integration and increased productivity, but achieving inclusion objectives and meeting IFC's E&S requirements was challenging. IFC's investments enhanced market integration and productivity, even in LICs. However, IFC's inclusive business investments—that is, investments that target the poorest people—face challenges in integrating smallholder farmers and SMEs into value chains. IFC's investments also face challenges in implementing IFC E&S Performance Standards, especially in LICs and in traditional-stage countries, where only 25 percent of investments met the E&S requirements.

MIGA's agrifood system portfolio of 21 guarantee projects has a strong focus on LICs (41 percent), the relative highest share of any Bank Group institution. Regionally, MIGA's presence was strong in Sub-Saharan Africa. The effectiveness of MIGA's interventions could not be evaluated, however, because of their small number.

Where market constraints affect productivity growth, agrifood system support that combined efforts to lift the productivity of agricultural production with efforts to improve markets access were most successful. Interventions that aimed at increasing the productivity of primary production (such as improvements to technology, inputs, and irrigation) helped close yield gaps. Complementary efforts to strengthen market access and value chains linking smallholder farmers with midstream firms (such as processors) ensured that the surplus generated through the increase in primary production could also be sold to the market at fair prices. This mix of supply- and demand-side interventions was particularly effective in countries at the traditional stage of agrifood system development where market access constrains productivity

growth. However, ensuring such complementarity has been challenging in nascent markets, including in FCS, which require sustained and incremental support, including through sequenced operations and collaboration with relevant partners.

The World Bank's productivity-enhancing investments are insufficiently diversified toward high-value, nutrient-rich food products that offer multiple benefits. Although Bank Group interventions to increase agricultural productivity reached many countries, the World Bank's productivity-enhancing investments are insufficiently diversified beyond major staples and livestock toward high-value and nutrient-rich products in high demand. Diversification of food production, where feasible, toward high-value and more nutritious food products (for example, fruit trees, vegetables, and food legumes) using more resource-efficient (for example, conserving land and water) and climate-smart agricultural practices can offer multiple benefits to smallholder farmers and SMEs. Increased availability of undersupplied nutritious food can also benefit urban and rural poor people. Complementary public and private sector investments in market infrastructure, including collection points, cold storage, transport, and digital solutions to improve service delivery and adoption of sustainability standards, help increase market access and diversification to high-value, perishable food products.

The Bank Group has made significant efforts to strengthen internal coordination, but collaboration remains largely informal and bilateral. Although the Agribusiness Sector Working Group has contributed to improved internal alignment, collaboration is largely informal and bilateral (World Bank with IFC and IFC with MIGA), and it is hard to identify and assess joint Bank Group projects.

In conclusion, the current Bank Group approach to agrifood system development can be strengthened to address the continuing challenges that agrifood systems are facing and to fully support the Bank Group's vision for sustainable agrifood systems. The Bank Group and its partners can enhance the focus of their interventions on increasing productivity, inclusion, and sustainability, especially in LICs, countries at a traditional stage of agrifood system development, and countries in FCS. Such interventions are expected

to address the enormous climate and other challenges that agrifood systems continue to face and facilitate transformation while ensuring that agrifood system approaches safeguard the environment and support improvements in people's nutrition and health. This, in turn, will contribute to ending hunger and improving the well-being of all. In light of this, we offer three recommendations.

Recommendations

Recommendation 1. **To enhance its effectiveness in developing agrifood systems, the Bank Group's efforts to support production technologies should be complemented by efforts to improve market access, especially in LICs and in countries at the traditional stage of agrifood system development.** These complementarities can be pursued by enhancing synergies in Bank Group interventions or with partners. Pairing production with access to market support helps address the fragmentation of production activities and the insufficient market integration of various actors in agrifood systems. Production support entails strengthening research, extension, and input delivery systems to increase the adoption and adaptation of specific technologies, innovations (including digital solutions), and sustainable practices. Access to market support entails identifying buyers, developing the needed market infrastructure (for example, logistics and cold chains), and facilitating links between smallholder farmers and SMEs with potential buyers. Improving links, in turn, requires deepening support to agricultural producer groups and SMEs to enhance their capacity and business skills. Over time, this will help them adopt sustainability standards and potentially establish partnerships with larger private sector value chain actors—lead firms that have successful records in integrating small actors into value chains. Access to finance and support to improve the enabling environment to attract private investment at various stages of the value chain is critical to improve both production and access to markets. Supporting complementary interventions is particularly important in LICs and in countries at the traditional stage of agrifood system development, which often lack infrastructure for farmers and SMEs to access markets in urban areas. Complementarity can be achieved through synergies across the Bank Group using parallel or

sequenced interventions, through partnerships with other donor agencies, or through client actions, and these expectations should be clarified in project documents.

Recommendation 2. **To achieve more sustainable agrifood systems, where conditions permit, the Bank Group should support production diversification to meet the growing demand for undersupplied, high-value-added nutritious products while ensuring that smallholder farmers and SMEs benefit from the diversification.** Although the World Bank should retain its support for staple crops and livestock that meet domestic needs, it should also seize opportunities to help smallholders and SMEs benefit from more sustainable agrifood systems by supporting increased production and marketing of higher-value nutritious products, such as fruits, vegetables, grain legumes, oil crops, small ruminants, dairy, fish, and poultry, where conditions permit. Higher-value products can have income-enhancing effects for smallholders and SMEs if constraints to entry are overcome; resource-efficient (for example, using less water and land) and diversified production can enhance climate resilience and sustainability; and highly nutritious products will also provide benefits to the overall household well-being. Successful production and marketing of higher-value products will require attention to (i) agricultural finance, so that farms and firms can invest in adequate technologies and processes; (ii) food safety standards to access competitive markets; (iii) capacity building; (iv) market infrastructure; and (v) aggregation and wholesale activities. These factors are particularly important for smallholder farmers and SMEs. Blended finance, including that provided by the Global Agriculture and Food Security Program, has been particularly effective at improving market access by helping smallholders in low-income and fragile contexts link with buyers and private sector investment. Illustrative examples of relevant diversification efforts that have benefited smallholders and SMEs include initiatives for diversifying cereal-based systems in Asia and efforts to increase access to small-scale irrigation and climate-smart agriculture in Africa, which allow smallholder farmers to integrate fruit trees and vegetables into their production activities. Similarly, IFC and MIGA could build on their successful experiences in the dairy, beef, and poultry sectors in Eastern and Southern Africa, where

they provided access to finance paired with complementary investments in logistics infrastructure, capacity building, and marketing.

Recommendation 3. **To enhance the contribution of IFC support for agrifood system development, IFC should pilot and adopt more effective ways to support clients to better meet E&S Performance Standards, especially in LICs.** Progress in improving E&S performance was apparent when clients possessed the capacity and commitment to address E&S issues or when IFC was able to strengthen their capacity and commitment through loan covenants, tailored IFC advisory services, or blended finance. Improving the E&S performance of clients in LICs will require assistance to help them address recurring challenges (such as in wastewater management and occupational health and safety) and to support the implementation of E&S action plans and the Bank Group Environmental, Health, and Safety Guidelines.

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APPENDIXES

Independent Evaluation Group

Toward Productive, Inclusive, and Sustainable Farms and Agribusiness Firms

Appendix A. Evaluation Methodology

Evaluation Objectives and Questions

The main purpose of the evaluation is to assess how relevant and effective the World Bank Group has been in developing more productive, inclusive, and sustainable agrifood systems. We assessed the performance of agrifood systems interventions against the three core priority icy areas of productivity, inclusion, and sustainability. Our evaluation was centered around two overarching questions:

1. How relevant is the Bank Group in its strategy and support for addressing the key challenges to agrifood system development in client countries?

» What are the Bank Group's strategic approaches for addressing the challenges of raising productivity, improving inclusion, and reducing sustainability threats from climate change?

» How does the Bank Group's portfolio respond to the needs for addressing the challenges of raising productivity, improving inclusion, and reducing sustainability threats from climate change?

2. How effective is the Bank Group support in making agrifood systems more productive, inclusive, and sustainable?

» How effective is the Bank Group in supporting productivity growth and the adoption of sustainability standards by farmers and agribusiness firms?

» How effective is Bank Group support in enhancing the inclusion of smallholder farmers and small and medium enterprise agribusiness firms in markets and value chains?

» Based on Bank Group experiences, what are the lessons, success factors and constraints on delivering development outcomes linked to productive, inclusive, and sustainable agrifood systems?

» How has the coordination among the World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) contributed to enhancing the Bank Group's support to developing agrifood systems?

Theory of Change

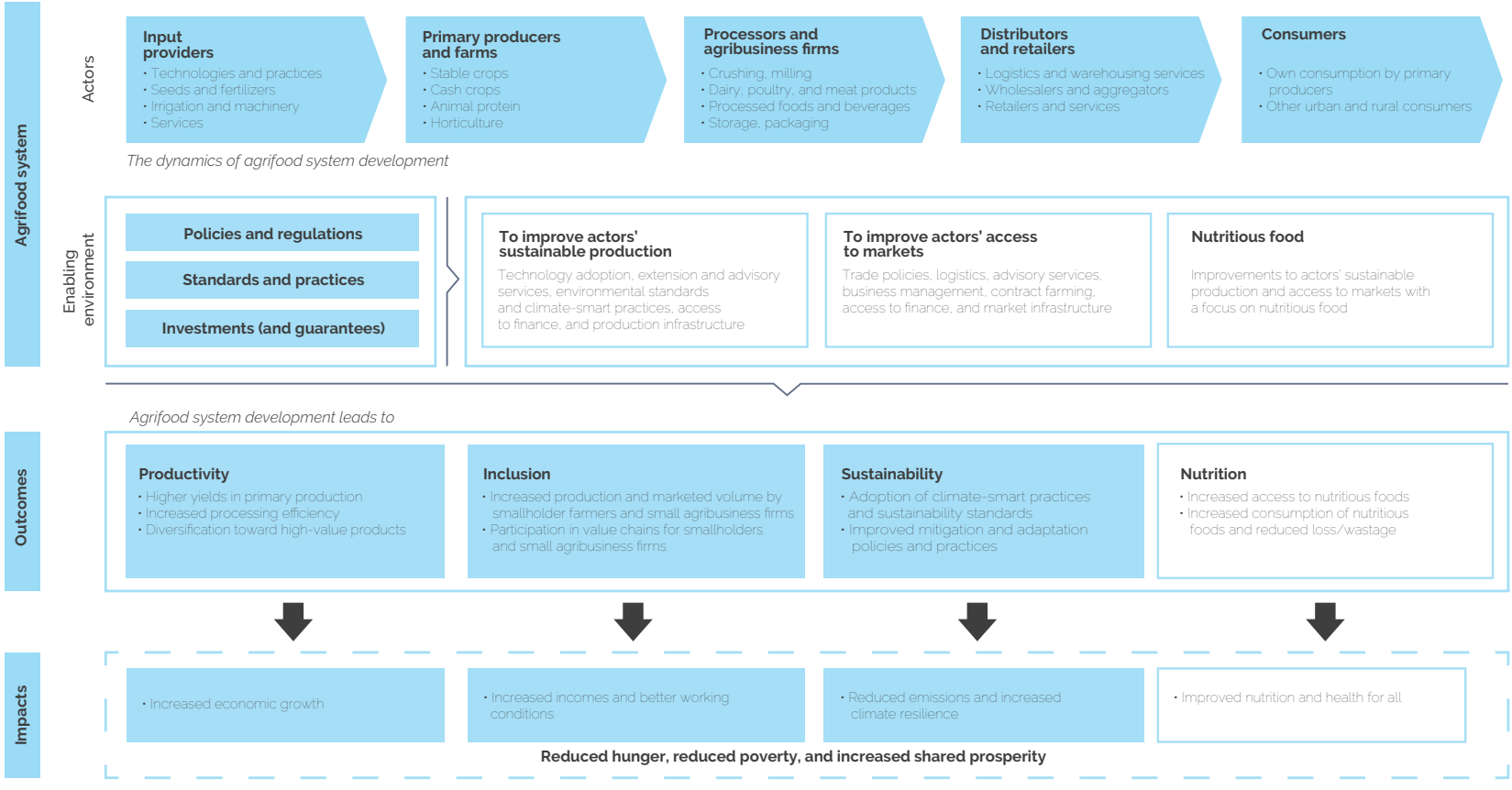
The agrifood system links primary production on the farm with the agrifood industry and services through agrifood value chains. More broadly, an agrifood system encompasses the interlinked value-adding activities undertaken by multiple actors involved in production, aggregation, processing, distribution, marketing, and retail (including consumption and disposal of waste), and the market, policy, and institutional environment that shapes its performance and development. At each segment of the agrifood value chain, a diverse set of actors are engaged and interlinked. Upstream, suppliers provide agricultural inputs and services, and farmers produce the primary raw products. Midstream, aggregators and processors add value to raw products. Downstream, distributors, retailers, and food services bring the product to the consumer.

Based on consultations with key Bank Group staff and a review of selected literature, we use a generic theory of change for agrifood system development. Agrifood system development increases the productivity, inclusion, and sustainability of farms and firms that ultimately contribute to the Bank Group's twin goals (ending hunger and poverty and increasing shared prosperity in a sustainable manner). The Bank Group intervenes in the different segments of the agrifood system to enhance production, market access, and the sustainability of production by farms and firms. For example, it intervenes through policies, standards, and investments (including guarantees) to create or enhance the enabling environment for agriculture and agribusiness, which in turn affects available choices for enhancing sustainable production and market access by farms and firms. Production is influenced by policies to facilitate farms' and firms' adoption of technologies to improve the primary production and processing of agricultural products, or by firms' adoption of environmental standards and practices that improve the sustainability of their operations. Similarly, access to markets is influenced by

trade policies, logistics, business management, contract farming, and access to finance and market infrastructure. Public and private investments (and guarantees) increase both farms' and firms' capacity to obtain better supplies, expand production, diversify markets, and increase sales.

Agrifood system development increases productivity, inclusion, and sustainability, in turn contributing to ending hunger and poverty and increasing shared prosperity. The Bank Group interventions are designed to support farms and agribusiness firms with addressing the problems of low productivity, inclusion, and sustainability in the agrifood system that lead to hunger, malnutrition, poverty, environmental degradation, and climate change vulnerability. When successful, these interventions contribute to agrifood system development, which leads to higher yields and incomes for primary producers, diversification toward high-value products, increased efficiency and productivity for agribusiness firms, increased access and participation of smallholder farmers (including women) and small and medium enterprises into value chains, increased marketed volume and commercialization, reduced gender gap in agrifood systems, reduction of undernourishment, and adoption of climate-smart practices and sustainability standards. These intermediate outcomes (assessed in this evaluation), when sustained, can also lead to impacts through increases in economic productivity (for example, economic growth, better working conditions, more efficient resource use) and meeting global sustainable development needs (for example, reduced hunger and malnutrition, climate resilience and mitigation, ecosystem protection), which eventually contribute to the Bank Group's twin goals (figure A.1).

Figure A.1. Theory of Change for Agrifood System Development



Source: Independent Evaluation Group.

Note: Consumers and nutrition-related agrifood system activities and outcomes are shown for completeness but are not covered by the evaluation.

Evaluation Components

A mixed methods evaluation design was formulated to link relevant sources of data and methods to address the evaluation questions. Table A.1 provides a summary of the methods deployed to address each evaluation question and the potential strengths and limitations of the approaches used.

Table A.1. Evaluation Design

Evaluation Questions	Methods Deployed	Methodological Strengths and Limitations
EQ1: How relevant is the Bank Group in its strategy and support for addressing the key challenges to AFS development in client countries?	» Literature review » Review of CPFs and CPSDs » Indicator-based portfolio mapping	» Identifies globally comparable indicators for the classification of countries » Provides inputs for assessing alignment of country strategies with country needs for AFSD (productivity, inclusion, and sustainability) in countries where agrifood is an important sector » Uses benchmark data to assess portfolio alignment with country needs and priorities. However, indicators may not directly map onto outcomes of interest explored in the evaluation
EQ2: How effective is the Bank Group support to making AFS more productive, inclusive, and sustainable?	» Structured literature review » Portfolio review and analysis » Desk review » Factor analysis » Case-based analysis » Interviews	» Depth and breadth of information captured in extended literature provides insights into designing case studies for analysis of effectiveness and success factors » Case-based analysis and factor analysis (for example, using NVivo) provide a means of synthesizing qualitative and quantitative evidence to draw conclusions » Case-based analysis provides broader cross-cutting factors and sector-specific factors » Complexity of interventions, contextual factors, and outcomes makes generalization across focus areas and levels of analysis challenging » Potential sampling and response biases are inherent in interviews

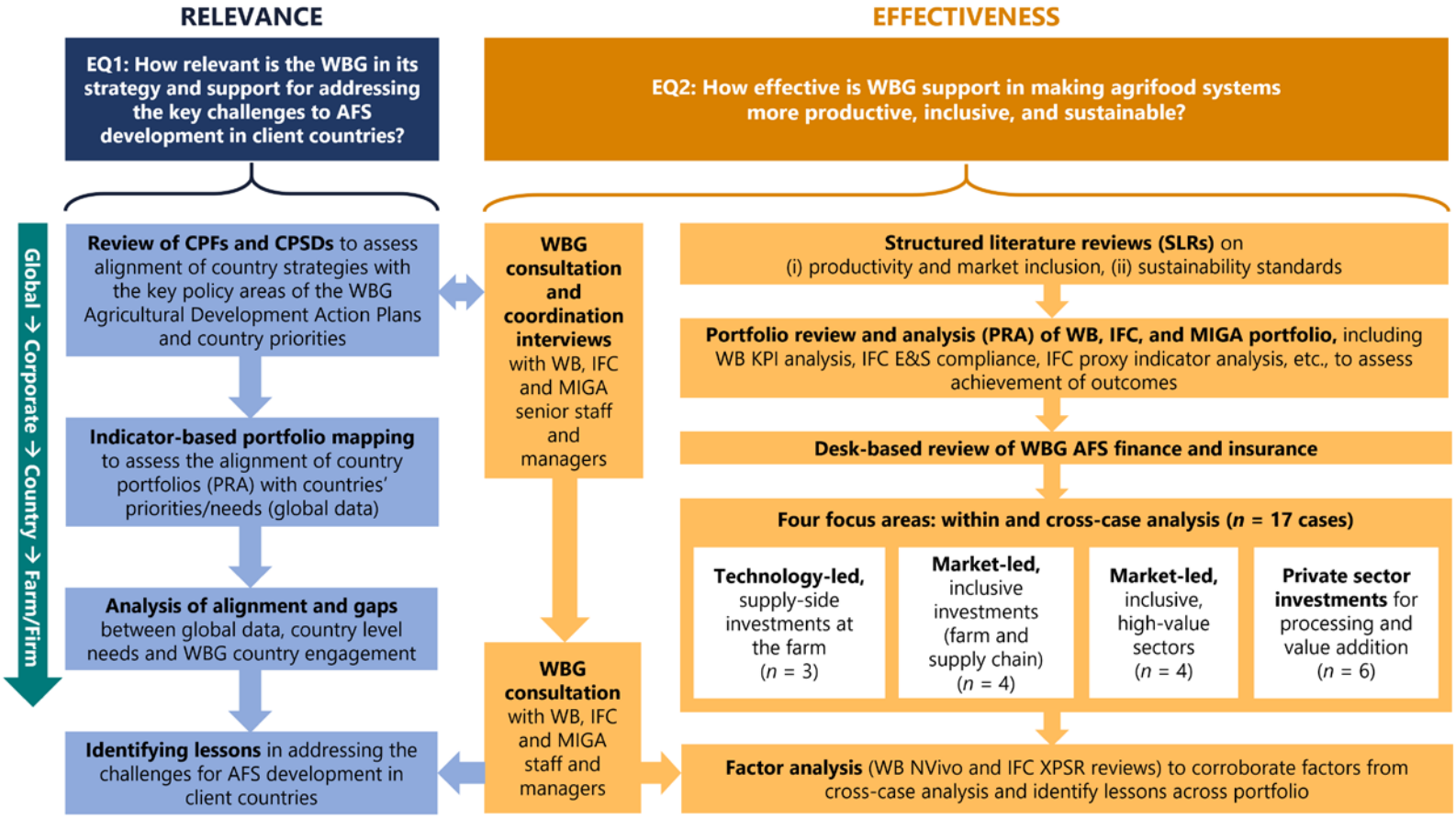
Source: Independent Evaluation Group.

Note: AFS = agrifood system; CPF = Country Partnership Framework; CPSD = Country Private Sector Diagnostic.

Figure A.2 summarizes the triangulation of evidence across the different methodologies and approaches listed in table A.1. The figure also highlights how the different approaches supported the identification of lessons, success factors, and constraints at different levels of analysis. We conducted the relevance analysis captured in evaluation question 1 using a combination of document review, indicator-based portfolio mapping, and an analysis of alignment and gaps between global data and Bank Group country engagement. We supplemented this with consultations and semistructured interviews with World Bank, IFC, and MIGA senior staff and managers.

We conducted the effectiveness analysis captured in evaluation question 2 using a combination of structured literature review (SLR); portfolio review and analysis (PRA) of the relevant World Bank, IFC, and MIGA portfolios; a cross-case analysis of four focus areas; and factor analysis (including semi-automated qualitative analysis in NVivo). As with the analysis of relevance, we supplemented the effectiveness component with inputs from semistructured interviews and consultations with senior managers and staff.

Figure A.2. Methodological Design



Source: Independent Evaluation Group.

Note: AFS = agrifood system; CPF = Country Partnership Framework; CPSD = Country Private Sector Diagnostic; E&S = environmental and social; IFC = International Finance Corporation; KPI = key performance indicator; MIGA = Multilateral Investment Guarantee Agency; PRA = Portfolio Review and Analysis; WB = World Bank; WBG = World Bank Group; XPSR = Expanded Project Supervision Report.

Ensuring the Validity of Findings

We took several steps to ensure that evaluation findings were valid and consistent across the key development areas (productivity, inclusion, and sustainability) under consideration. First, a systematic review of the literature on agricultural transformation models provided insights on the relative stages of agrifood system development and their relative need for support on key challenges. This ensured that the division of cases into "lagging" and "transformed" country categories followed established practice prescribed by subject area experts. This complemented a systematic review of 38 Country Partnership Frameworks (CPFs) and Country Private Sector Diagnostics (CPSDs) to triangulate the range of approaches used by the Bank Group to improve agricultural productivity, enhance market inclusion, and respond to climate change challenges across both country categories.

Second, we collected a range of proxy variables for each of the three key development areas (productivity, inclusion, and sustainability), offering globally comparable indicators for assessing countries' respective levels of development in these areas. We selected the indicators to align with commonly used agricultural transformation models identified in the review of the literature, demarcating each country's relative score in a systematically comparable way. This provided a useful benchmark for detecting high-level trends in agricultural development, patterns of alignment with country-level needs, and potential systematic misalignment relative to Bank Group interventions.

Third, we applied a shared template and coding plan to generate a consistent framework for generating within- and cross-case lessons across the 17 cases examined. The framework classified cases according to three levels of analysis, examining farm-, firm-, and cooperative-level interventions mapped across three outcome areas (productivity, inclusion, and sustainability). We categorized relevant interventions according to eight major categories and supported this with a set of factors coding attributes related to scope, targeting, project design, supervision, delivery model, complementary investments, quality of deals and markets, stakeholder engagement, private sector engagement, and an assortment of relevant external factors. We then

triangulated the evidence captured in this framework to produce insights into how the project components and interventions affected the selected outcomes of agrifood systems transformation at the level of the respective project beneficiaries.

Fourth, as part of the factor analysis, we classified and synthesized salient project lessons from Implementation and Completion and Results Report Reviews (ICRRs) using a semiautomated qualitative data analysis protocol implemented in NVivo. Using a systematic coding taxonomy, we extracted salient lessons from a sample of 217 projects and classified them into four main areas covering integrated service delivery, market-led service delivery, community involvement, and private sector involvement. Coded references were assessed by two coders to ensure interrater reliability. Furthermore, we manually validated identified references to ensure that the taxonomy did not generate any false positives. We also compared lessons from the World Bank portfolio against IFC Expanded Project Supervision Report reviews.

We triangulated findings at multiple levels of analysis, integrating evidence across cases and methodologies to ensure the consistency of findings related to the three key development areas (productivity, inclusion, and sustainability). The following sections provide an overview of the methodological components mentioned above.

Portfolio Identification

World Bank Lending Portfolio

We identified the agrifood system portfolio in two stages. The following protocol was then used to select country cases. First, we identified the universe of operations funded by the International Bank for Reconstruction and Development and the International Development Association from the Business Intelligence system, the Analysis for Office system, and the SAP enterprise resource planning system for the evaluation period. We extracted projects with the agrifood-related level 1 and level 2 sector codes using sector code AX (Agriculture, Fishing, and Forestry) and sector code YX (Industry, Trade, and Services). For sector code YX, we used the level 2 code YA (Agricultural Markets, Commercialization, and Agri-Business). After this

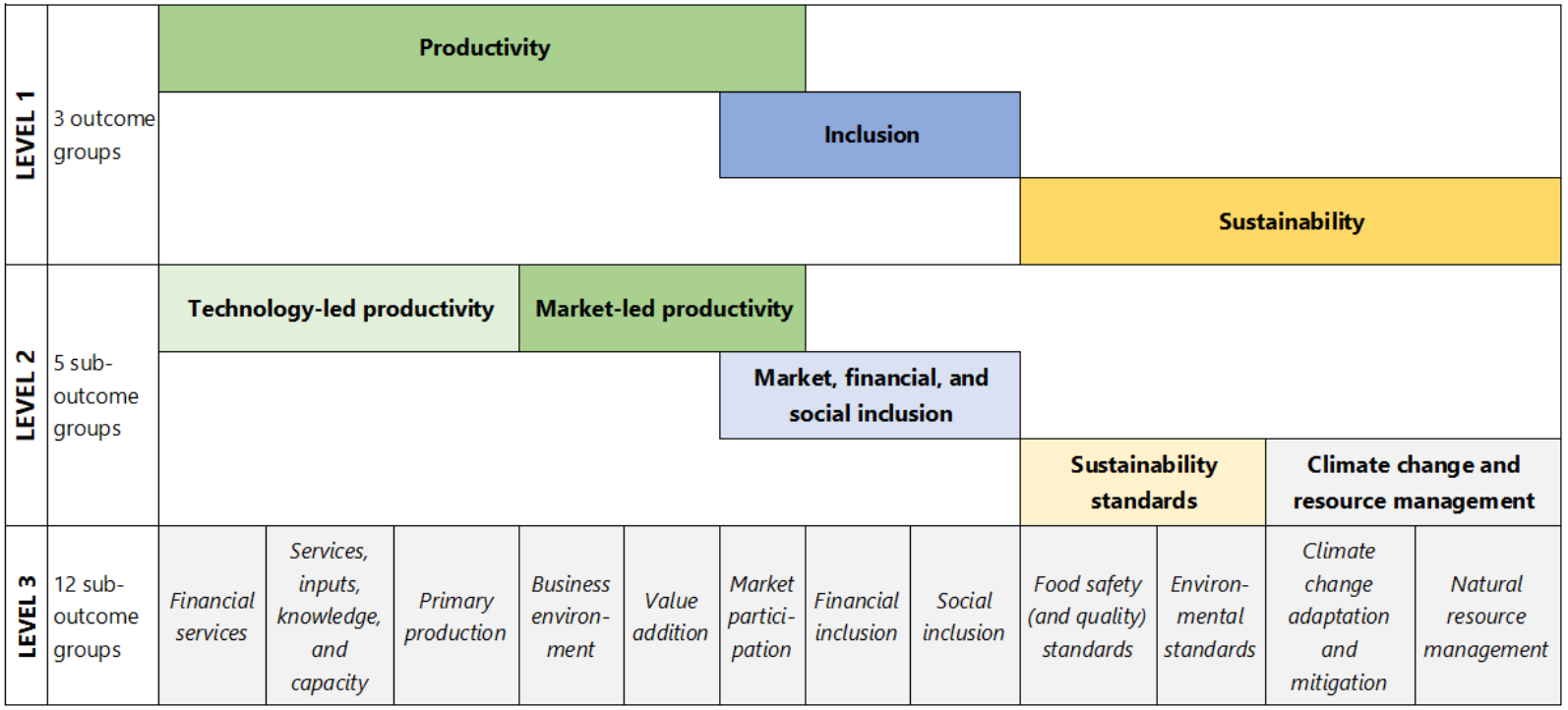
extraction, projects less than $5 million that did not require Independent Evaluation Group (IEG) evaluation were excluded. We conducted manual validation using project development objectives, component descriptions, and image bank abstracts, applying an exclusion criterion to eliminate irrelevant projects.

The second level of identification and categorization used semiautomated portfolio identification methods (content analysis of project development objectives, component descriptions, and abstracts). With the support of IEG's data science team, a search protocol was generated to retrieve omitted projects that were not identified via sector codes. Using this method, we categorized the portfolio under the three major outcome areas of productivity, inclusion, and sustainability. In addition, we mapped projects according to 5 secondary-level and 12 tertiary-level categories. These are summarized in figure A.3 and box A.1. We used manual validation of automated results to verify the output and eliminate potential false positives mapped to different outcome categories. After excluding pure forestry and fisheries projects and disaster relief and emergency response interventions, this second-level refinement and categorization yielded the World Bank's final investment portfolio of 609 projects mapped to different outcomes, equivalent to a total commitment of $39.9 billion.

World Bank Advisory Services and Analytics Portfolio

We extracted advisory services and analytics (ASA) projects from the Enterprise Data Catalog by applying the same agrifood-related sector codes as described (except for fisheries and forestry codes). Small ASA projects (less than $10,000) were excluded from the portfolio. For the same period, we identified 496 ASA projects. Using project descriptions or abstracts that are available in the system, we conducted manual content analysis to exclude irrelevant projects and map the projects under level 1 and level 2 categories using the same approach used for the lending projects (figure A.3 and box A.1). This review yielded 406 unique ASAs with a total commitment amount of $130 million. Because the World Bank's ASA portfolio is not validated by IEG, it was not included in the effectiveness analysis but is assessed partially as part of the relevance analysis.

Figure A.3. Portfolio Classification Hierarchy



Source: Independent Evaluation Group.

Box A.1. Portfolio Classification Categories

- Financial services—projects providing financial services to farmers, producer groups, and firms in terms of credit or loans and insurance services to mitigate risks
- Inputs, services, knowledge, capacity—projects involved in delivering advisory services, technical assistance, and extension, demonstration, research, and capacity development activities to increase production
- Production technology—projects involved in crop and livestock production activities through technology adoption to increase agrifood production or yields
- Business environment—projects involved in improving the investment climate, policy reforms, institutional (legal), mainstreaming new strategies and approaches across sectors, land administration, and so on to improve the institutional capacity or create an enabling environment for agrifood systems development
- Processing—projects for agrifood processing, handling, and packaging that transform or add value to the product
- Market access or participation—projects that improve market access, market participation, or commercialization of production by improving market links, developing value chains and contracts between farmers and firms, or investing in rural roads that link farmers to markets
- Financial inclusion—projects that provide targeted financial services to underserviced and marginalized smallholder farmers or micro and small enterprises
- Social inclusion—projects aiming to increase productivity or market access for poor people and vulnerable farmers. This may include community-driven development type projects that aim to enhance livelihoods, but it excludes projects on pure emergency response and disaster risk management
- Food safety—projects aiming to improve food safety (and quality, where separation was not feasible) standards and help farmers and firms adopt them. This will include projects interested in sanitary and phytosanitary issues, animal health, animal disease surveillance (for example, avian influenza), and so on

(continued)

Box A.1. Portfolio Classification Categories (cont.)

- Environmental sustainability standards—projects supporting compliance with environmental standards and regulations, Performance Standards, and certification (for example, fair trade, organics, lower environmental footprint), global agricultural practices, or other
- Climate change adaptation and mitigation—climate-smart projects with expressed interest in reducing greenhouse gas emissions from agrifood systems or enhancing resilience and adaptation to climate change
- Natural resource management—projects involved in improving ecosystem services, including agricultural activities, landscape approaches, and improved management of soil and water resources and related natural resources

Source: Independent Evaluation Group.

International Finance Corporation Investment Services Portfolio

We identified the agrifood system development portfolio by selecting projects approved after the start of fiscal year (FY)10 and classified with the "agri-food chain" indicator in IPortal. This initial selection resulted in 352 projects. Of these, we excluded 24 projects after a process of manual validation of project descriptions, either for dealing with forestry and fishing or for failing to establish a direct link with agriculture. Additionally, 3 projects were added, resulting in 331 investment projects overall.

International Finance Corporation Advisory Services Portfolio

We extracted IFC advisory services projects from IFC's data portal using the Advisory Services Agribusiness Sector identifier—that is, with at least 25 percent of the budget of the advisory project related to agribusiness. The identifier includes agrifood production, processing, warehousing, and financial services connected to agrifood businesses. Only IFC advisory services client-facing projects at the completed and portfolio stages were included,

and projects with multiple observations were counted only once, based on the project identification number. This process yielded 208 projects. After consulting with IFC's team, we included three more projects and excluded one, leaving the IFC advisory services agrifood system development portfolio with 210 projects with a total commitment amount of $470 million.

Multilateral Investment Guarantee Agency Guarantees Portfolio

The MIGA agribusiness portfolio contains 19 projects with unique identification numbers. After manually analyzing disclosed paragraphs of several MIGA projects, we decided to drop two projects from the original agribusiness portfolio and include five projects classified in the manufacturing sector but with a strong agribusiness component. In total, the agrifood system development MIGA portfolio contained 21 projects. However, we could not evaluate the effectiveness of MIGA's portfolio because of the limited number of evaluated interventions. Evidence from MIGA case studies is highlighted where appropriate, especially in the analysis of success factors in chapter 4.

Methods for Relevance Analysis

The relevance analysis consisted of three major components. First, we reviewed the relevant agrifood systems literature and identified globally comparable indicators for the identification of countries. This included identification of countries at three stages of agrifood system development: traditional, transitional, and integrated (Laborde et al. 2019; Morris, Sebastian, and Perego 2020). Second, we reviewed 38 selected CPFs to identify the range of approaches used by the Bank Group to improve agricultural productivity, enhance market inclusion, and respond to climate change challenges. This was done to systematically categorize the variety of approaches in countries at the early and more advanced stages. Third, we used comparable global data and analyzed the alignment between the lending and nonlending portfolios and the country development priorities.

Identification of Sample Countries

We used existing global literature (Barrett et al. 2020; Laborde et al. 2019; Morris, Sebastian, and Perego 2020) to identify sample countries from the different stages of agrifood system development. An important consideration in the selection of countries for CPF and CPSD review was to select countries where agriculture is relevant to the economy, the Bank Group has lending activities, and the country has a recent CPF. In addition, our sampling considered the three stages of development and a regional balance to the extent possible, with an emphasis on countries in Africa, South Asia, and the Caribbean representing the early stages of development.

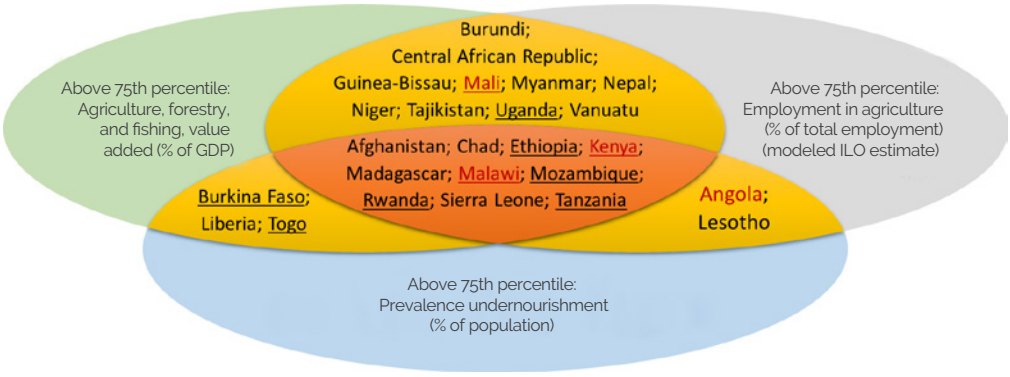
To identify countries where agriculture plays an important socioeconomic role but where development of the sector is lagging, we used globally comparable indicators that are commonly used in agricultural transformation models (such as Laborde et al. [2019] and Timmer [1988]):

- Agriculture, forestry, and fishing, value-added (share of gross domestic product);
- Employment in agriculture (share of total employment; modeled International Labour Organization estimate);
- Prevalence of undernourishment (share of population).

Using the 144 Bank Group borrowing countries, we identified the countries in the top quartile (those above the 75th percentile) of each indicator. Countries that appeared in the top quartile of two or more of the three indicators were included in the sample (figure A.4).

To identify a sample of countries where substantial agrifood systems development has already occurred, we used existing classifications by stages of agrifood system development (Barrett et al. 2020; Laborde et al. 2019; figure A.5).

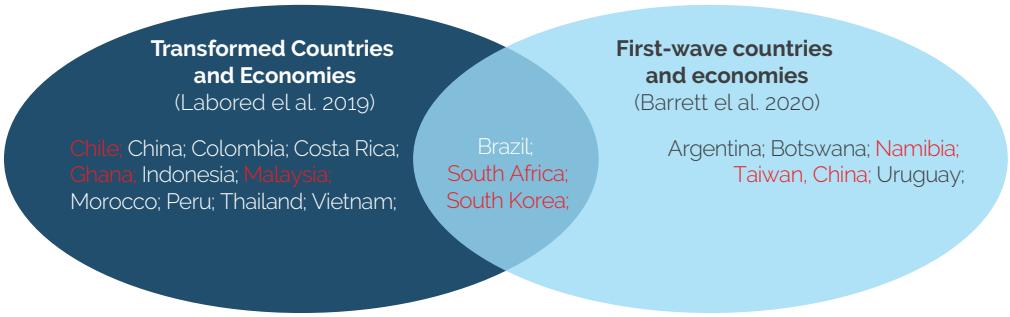
Figure A.4. Identification of Countries at Early Stages of Agrifood System Development Based on Globally Comparable Indicators



Source: Independent Evaluation Group 2021 and World Development Indicators 2010–19.

Note: Countries in red do not have a recent or current Country Partnership Framework (period ending in fiscal year 2019 or earlier). Laborde et al. (2019) classified the underlined countries as "lagging." GDP = gross domestic product; ILO = International Labour Organization.

Figure A.5. Identification of Countries at Advanced Stages of Agrifood System Development



Source: Based on Barrett et al. (2020) and Laborde et al. (2019).

Note: Countries and economies in red are not Bank Group borrowing countries or do not have a recent or current Country Partnership Framework (period ending in fiscal year 2019 or earlier).

We removed countries from the sample in cases where the Bank Group is not engaged, or where the latest CPF is outdated (that is, ended in FY19 or earlier). The final sample of 38 countries by agrifood system development stages is shown in table A.2.

Table A.2. Sample Countries Selected for Country Partnership Framework Review by Stages of Agrifood System Development

Stage of AFSD	Countries (n = 38)
Traditional (n = 17)	Afghanistan, Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Ethiopia, Guinea-Bissau, Liberia, Madagascar, Mozambique, Rwanda, Sierra Leone, Tajikistan, Tanzania, Uganda, Zambia
Transitional (n = 9)	Costa Rica, India, Myanmar, Nepal, Niger, Senegal, Togo, Vanuatu, Vietnam
Integrated (n = 12)	Argentina, Brazil, China, Colombia, Indonesia, Kazakhstan, Lesotho, Morocco, Nigeria, Peru, Thailand, Uruguay

Source: Independent Evaluation Group based on Laborde et al. (2019) and Morris, Sebastian, and Perego (2020).

Note: AFSD = agrifood system development.

Review of Country Partnership Frameworks and Country Private Sector Diagnostics

Using a standardized template, we assessed 38 CPFs to determine the extent to which they addressed the three key dimensions of productivity, inclusion, and sustainability, and the corresponding development subareas or components were also assessed. The priority areas and subcomponent areas were defined using the outcome categories and the associated keywords from the portfolio classification (for example, technology-led productivity, market-led productivity, market and social inclusion, sustainability standards, and climate change and natural resource management). We scored the CPFs according to the extent to which they addressed the various dimensions of agrifood system development, using a scale from 0 to 3: 0 = no coverage; 1 = coverage that did not address agrifood-specific constraints; 2 = coverage that addressed agrifood-specific constraints; and 3 = coverage that addressed agrifood-specific constraints and delineating prospective Bank Group actions and interventions required to address identified constraints or realize investment opportunities.

We then assessed (i) the overall *coverage*—that is, the extent to which the CPFs addressed these core agrifood system development dimensions and to what level of depth (using the scoring system), and (ii) the *adequacy of coverage*—that is, to what extent the coverage and the depth of coverage (as per score) reflected the countries' actual needs. To help visualize the adequacy of coverage, the CPF score we generated was plotted by stages of agrifood system development to show where the gaps were and assess how the CPFs of countries at different stages rated the three dimensions.

To assess the role of CPSDs in informing country programming and identification of relevant policy issues for agrifood system development, these diagnostics were assessed for their coverage of the same development areas used for the CPF assessment. To assess the impact of CPSDs on CPFs, we scored the CPSD impact on subsequent CPFs by assessing to what extent CPSD content (policy reform issues, investment opportunities, and so on) were reflected in CPFs.

To assess the influence of CPSDs on succeeding CPFs, we analyzed countries where a CPSD preceded a CPF (n = 7: Kazakhstan, Morocco, Myanmar, Nepal, Nigeria, Rwanda, Senegal). Three countries were manually added (underlined) to the sample, and the others were already in the sample.

Indicator-Based Portfolio Mapping and Analysis

We performed indicator-based portfolio analysis and mapping using a comparable global data set to assess alignment with country agrifood system development needs and priorities. For the analysis, we used multiple proxy indicators for productivity, inclusion, and sustainability to capture the country's actual stage of development concerning each core development area. For example, we used "agricultural value-added per worker" as an indicator to reflect a country's level of agricultural productivity. Annex AA presents all the proxy indicators selected to assess the alignment of the Bank Group portfolio with country agrifood system development needs.

We included the full country lending and nonlending portfolios of the Bank Group in the indicator-based analysis. This enabled us to assess the alignment between the actual lending and nonlending operations and the country development needs for agrifood system development, as reflected in the

global data set. This, in turn, allowed us to identify (i) International Bank for Reconstruction and Development, International Development Association, and IFC investment gaps in relation to the country's needs; and (ii) whether the Bank Group response is informed by existing knowledge on what works from systematic literature reviews.

The global median was taken for each indicator presented in this analysis, dividing countries into two subgroups of countries per indicator: those above the global median line and those below it. To assess whether the Bank Group portfolio of interventions was aligned with countries that needed it the most, we analyzed the entire portfolio and subportfolios for each of the key indicators presented in table 2.1 (for example, climate change–related projects for the CO_2 emission indicator) to compare the number of projects going to countries below the global median line with the number of projects in support of countries with relatively lower needs. For example, 65 countries scored below the global median on the emission of CO_2 and were therefore considered to be in relatively high need of preventing greenhouse gas emissions, as per table 2.1. These 65 countries received 129 World Bank projects related to greenhouse gas emissions (1.98 projects per country), compared with 59 projects in support of the 44 countries that scored above the global median (or 1.34 per country). We divided these two numbers by each other to produce a ratio assessing whether the support of the World Bank was tilted toward the countries that needed it the most. A ratio score of 1 would indicate total parity between the two groups. However, since in this example the Bank Group allocated 1.48 times more projects to countries with relatively high needs than to countries with relatively low needs, we concluded that the alignment of Bank Group projects was adequate.

To further understand the Bank Group's *reach* in the countries that needed it the most, we analyzed the percentage of countries with at least one intervention for each indicator and Bank Group agency. For example, of the 73 countries that are below the global median in rural poverty (the indicator used for social inclusion), the Bank Group had lending or nonlending social inclusion operations in 68 of them, a coverage reach of 93 percent. We considered an adequate benchmark for reach to be 66 percent since, given the number of small island states and countries in fragile and conflict-affected situations, a 100 percent coverage rate would be unrealistic. For IFC,

a 50 percent benchmark was applied because of its limited portfolio size compared with the World Bank.

Finally, we assessed whether countries received the right mix of Bank Group interventions, aligned with the gaps in core development areas. We used the global median for each indicator to assess if a country had a problem in one of the key major outcome classifications signaled in figure A.3: productivity, inclusion, and sustainability. For example, a country that has low productivity of primary agricultural production (again, measured in cereal yield) and has significant rural poverty has problems in two of the three major outcome classifications: productivity and inclusion. Countries below the line in two or three categories have more multisectoral problems in their agrifood system development than countries below the line in one category or none. Then, to assess if a country was given the right mix of interventions, we analyzed all Bank Group projects based on the country's need for agrifood system development interventions. For example, if a country had productivity and inclusion problems and received only projects related to productivity and sustainability, then the country received an unsuitable mix of interventions. This analysis assesses whether each country's set of projects complement each other in addressing the country's needs and if the Bank Group distributes its interventions correctly.

Methods for Effectiveness Analysis

Structured Literature Review

We conducted two SLRs using the IEG protocol, which uses a clearly specified search strategy, inclusion criteria, and geographical coverage. The inclusion criteria favored existing academic reviews and systematic reviews published in high-impact journals. The geographic focus was on client countries of the Bank Group.

Two senior academics with in-depth knowledge of the selected issues were identified to undertake the SLRs. The two topics included the following:

» Review of the evidence, enabling factors, and lessons on improving productivity and market access.

» Review of the evidence, enabling factors, and lessons on the adoption and impacts of sustainability standards.

Based on the IEG guidelines for SLRs, a protocol covering the literature search strategy was developed by the evaluation team's lead consultants who were selected as lead specialists or subject matter experts. The lead consultants then reviewed the abstracts and retained only those that met the criteria. Next, they conducted the SLRs using the selected review papers and authoritative studies—drawing main patterns, what has worked and what has not worked, the main drivers of success, and so on, through critical comparative review of the selected literature, the evidence, and the underlying contextual factors. After that, the lead specialists shared an annotated outline of the key findings of the initial review, which allowed fine-tuning of the focus areas, showed the extent of the available evidence in client countries, and revealed the knowledge gaps. The final SLR for each topic was accepted after several rounds of revisions and comments from our team.

In addition, an expert conducted a focused literature review to learn from experiences in agricultural finance, entitled "Improving Access to Agricultural Finance for Small and Medium Agrifood Production, Processing, and Supply Chain Clients." The two SLRs and the focused review on agricultural finance provided a useful synthesis of the existing evidence for the evaluation.

Portfolio Review and Analysis of World Bank, International Finance Corporation, and Multilateral Investment Guarantee Agency Projects

We conducted a PRA of World Bank projects to address the overarching evaluation questions on relevance and effectiveness. The PRA covered agrifood system transformation projects spanning investments, ASAs, and guarantees that were approved during FY10–20. This constitutes the Bank Group's support to agricultural development and transformation after the 2008 food crisis and the last *World Development Report*, which was on agricultural development.

Descriptive Portfolio Summaries

The first stage for the PRA is the identification of the Bank Group portfolio (see the portfolio identification section of this appendix). We analyzed the identified lending portfolio using IEG development effectiveness ratings (outcome, risk to development outcome, Bank performance, borrower performance, and monitoring and evaluation ratings) by Region, country income level, stages of agrifood system development, product type, and lending instruments, and by the primary outcome categories (productivity, inclusion, and sustainability) and subcategories of each of these primary outcome categories. In addition, we reviewed the results by product or crop category. The joint flag for the World Bank, IFC, and MIGA was used to assess the extent of coordination efforts within the Bank Group institutions.

For World Bank lending and IFC advisory services, effectiveness is assessed based on interventions targeting each of the outcomes and the proportion that achieved ratings of moderately satisfactory or better on their overall development outcomes. For IFC investments, effectiveness is assessed based on proxy indicators selected for each of the outcomes and the proportion that achieved ratings of moderately satisfactory or better. For IFC investments, these proxies are more indicative of the desired outcome than the overall development outcome rating. For both the World Bank and IFC, the case study evidence provides concrete examples of effectiveness and outcomes achieved.

Key Performance Indicator Analysis of the World Bank Portfolio

For the World Bank, the effectiveness analysis is complemented by analysis of the achievement of key performance indicators, where available. Our key performance indicator analysis focused on a sample of $N = 4{,}984$ indicators from $n = 258$ of 311 closed World Bank projects with available data in the evaluation portfolio. We retrieved these from the Enterprise Data Catalog. We manually coded relevant indicators in line with the evaluation outcome categories and subcategories (that is, productivity, inclusion, and sustainability), as follows:

- **Productivity:** Coded technology-led productivity indicators (for example, adoption of improved agricultural technology, areas with new or improved irrigation, financial services, yield, production, and productivity/agricultural output) and market-led productivity indicators (for example, market infrastructure, market participation, marketed products, storage, value addition, revenue, income, and business environment)
- **Sustainability:** Coded indicators associated with sustainability standards and food safety (and quality) indicators. Given the scope of the focused evaluation, we excluded outcomes related to climate change and natural resource management.
- **Inclusion:** Coded relevant indicators by targeted beneficiaries related to the evaluation scope (for example, targeting of small and medium enterprises, smallholders or small farmers, subsistence farmers, poor or low-income, vulnerable, or marginalized farm households, including landless people, young people, and women)

In the process of analysis, we discovered that the indicator database had data quality issues. (A large share of the baseline, target, and progress values was incorrect in a nonsystematic manner.) Therefore, we manually verified all coded indicators using results from respective Implementation Completion and Results Reports (ICRs); 1,306 coded indicators (from 216 unique closed projects IDs) were manually verified using 164 available ICRs. Of these, we found that 739 were suitable for analysis from the 136 ICRs of unique closed projects. We excluded the remaining coded indicators (although relevant for specific outcomes) from the analysis because of data quality issues (such as data reporting inconsistencies or errors, ambiguous language, and midproject changes in indicator units).

Case-Based Analysis

The case study approach provided a focused examination of several clearly defined cases to help better understand effectiveness in achieving outcomes related to agrifood systems development. The analysis also helped identify how internal sector-specific and general factors related to project design and implementation and *external* contextual factors contributed to project effec-

tiveness. We selected case studies purposively as representative samples of a wider set of projects sharing similar objectives and approaches.

The case studies focused on sets of Bank Group projects that implemented relatively similar interventions to achieve the same objective or objectives. Accordingly, we considered projects within the same focus area to be typical of the type of support that the Bank Group provided to support agrifood systems development. Focus areas were loosely defined based on the type of intervention supported by the projects, agrifood subsectors, and the agrifood supply chain segment directly affected by the investment. Depending on the stage of agrifood system development and the Bank Group institution providing the support, focus areas differed in the type of project beneficiaries (farmers, agribusiness firms, or both), the entry point of intervention (upstream on farms or midstream for processing firms), and the subsectors (staple crops, high-value products, or both). We grouped Bank Group interventions into focus areas in an attempt to identify groups of projects with similar characteristics (relatively similar interventions and objectives) using design features considered most different on a set of relevant characteristics.

Based on a preliminary analysis of the portfolio, we considered projects involved in the following four focus areas (FAs): (i) technology-led, supply-side investment at the farm (denoted FA1); (ii) market- and technology-led, investments mainly in staples (FA2); (iii) market- and technology-led, investments mainly in high-value-sector products (FA3); and (iv) midstream private sector investments for processing and value addition (FA4). Annex AB summarizes the layout of the case study design from the four focus areas. It also shows the link with evaluation outcomes and the indicative mapping of the Bank Group portfolio to the identified focus areas. This allowed us to better understand the coverage of focus areas in the broader portfolio and the extent to which findings from the comparison of cases within a focus area can be generalized to similar projects in the broader Bank Group portfolio. The rationale for selecting the four focus areas is as follows:

» FA1 was included to learn from supply-side-focused projects that primarily use technologies (irrigation, farm inputs) combined with technical assistance for improving. This represented about 20 percent of the portfolio.

- FA2 was included to learn from market and technology-led approaches to increasing smallholder productivity and inclusion, such as the productive alliance approach (in Latin America and the Caribbean) and common interest groups (in Africa). It represented about 30 percent of the portfolio.
- FA3 was included to learn from market- and technology-led interventions that tap into high-value sectors such as high-value crops, dairy, or livestock for which there is a high urban or export demand but which require sustainability standards. It represented about 18 percent of the portfolio.
- FA4 was included to learn from private sector IFC and MIGA investments that support established lead firms in the midstream segment by enhancing their production and processing capacity and efficiency or optimizing their immediate supply chain. It represented about 52 percent of the portfolio.

Within the four focus areas, we selected typical cases from the World Bank, IFC, and MIGA portfolio using a purposive sampling strategy that considered the availability of prior evaluative evidence and the stage of agrifood system development in the country. Case selection also ensured representation of World Bank, IFC, and MIGA activities. Within each focus area, we selected at least two projects to allow for some internal heterogeneity in the cases selected. Although the Bank Group portfolio is complex and heterogeneous, the cases within selected focus areas are relatively homogeneous in interventions, approaches, and sectors supported, thus allowing comparison among cases within and across focus areas. Table 4.1 provides an overview of the projects selected for the case-based analysis.

Case Study Data Collection

Data for the case-based analysis were collected using a standardized instrument to answer common questions. Data were collected based on review of microevaluative evidence (ICRs, ICRRs, and Expanded Project Supervision Reports), project documents (Project Appraisal Documents) and project evaluative evidence generated by IEG (such as Project Performance Assessment Reports), and external impact evaluations (when available). Where we identified important evidence gaps, the case study was supplemented with interviews with the task team leader of the project and key informants (investment officers, client project coordinators, monitoring and evaluation

specialists, sector experts, and so on) to better understand project outcomes. The type of data collected included (i) basic project attributes (such as the core interventions, the main beneficiaries, the subsector, the objectives, and the results logic or theory of change), (ii) effectiveness in achieving project objectives, (iii) internal and external factors that contributed to project effectiveness, and (iv) demonstration effects and scalability results. The evaluative evidence was summarized and interpreted by the case study authors in short case study reports that followed a common template.

Within- and Cross-Focus Area Analysis

By comparing cases within and among focus areas, we sought to identify success factors that contributed to (or constrained) project effectiveness in achieving common project objectives (productivity, inclusion, or sustainability). We considered two types of explanatory factors as contributing to effectiveness or ineffectiveness: (i) factors internal to Bank Group support that are under the direct influence of the Bank Group team (for example, the attributes of the main interventions, the appropriateness of the interventions), and (ii) factors external and not directly under the influence of the Bank Group but linked to project implementation (such as borrower commitment).

Building on the theory of change, we identified a list of success factors expected to influence outcomes through an iterative synthesis of case study evidence, supplemented by external evidence from the SLR identifying contextual factors influencing agrifood system development.

We asked case study authors to validate and identify additional success factors and constraints for the effectiveness of the interventions. We focused on considered success factors that were shared by two or more case studies as key factors for project performance and effectiveness.

Using this protocol for case-based analysis, we conducted a synthesis and pattern analysis of the documented changes in the behavior and outcomes of project beneficiaries across the different case studies within and across the focus areas. This approach was used to explore how the success factors varied across focus areas and to identify the distinctive characteristics and factors that contributed to the achievement of selected outcomes. Since

focus areas clustered projects that shared relatively similar attributes, this allowed for some level of generalization of findings to projects in the portfolio that shared similar characteristics.

Validation of Success Factors: Qualitative NVivo Analysis

World Bank

To enhance the generalizability of the success factors identified through the case-based analysis, we attempted to assess whether the selected factors would be validated at the portfolio level. A more systematic analysis of project success factors and lessons for the World Bank was done using NVivo qualitative content analysis of ICRR data from 217 projects. The analysis focused on those projects for which complete information was available at the time of assessment. First, a coding taxonomy was generated to identify and classify references to lessons in key identified areas, leveraging a combination of automatic and manual coding to extract relevant lessons across projects. We then manually sorted and validated identified text references to ensure that the taxonomy did not generate any false positives.

Output from the classification protocol identified seven salient lesson categories, encompassing 45 unique subcodes and 1,330 total references. We then manually refined this sample further, focusing on four salient lesson areas: integrated service delivery, market-led service delivery, community involvement, and private sector involvement. The resulting lesson categories found to be associated with project success are listed in box A.2.

We manually sorted text references according to sentiment (positive and negative) to provide a more informative assessment of shared success factors and challenges relative to project outcome levels (satisfactory or unsatisfactory). To better capture the factors and lessons, we then reviewed project documents (ICRRs or Project Performance Assessment Reports) to better understand the details of the project activities and objectives, the context underlying the identified lessons, and their implications with respect to future patterns of project success and failure.

Box A.2. Salient Lesson Categories from NVivo-Assisted Content Analysis

Lesson categories found to be associated with project success were as follows:

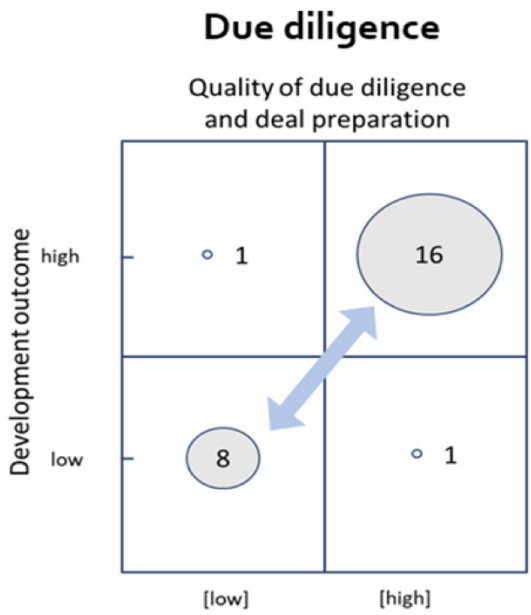
- Integrated service delivery—approaches that mix supply- and demand-side issues to improve productivity and inclusion (references to access to finance, agricultural inputs and extension, food safety or quality, irrigation, market information systems, rural roads, technical assistance, warehousing)
- Market-led service delivery—approaches that use demand-side interventions to strengthen value chains and increase incomes for smallholder farmers and small and medium enterprises (references to agroprocessing, commercial activities, contract farming, market access, productive partnerships, value chains)
- Community involvement—participatory approaches for inclusion, project design, and implementation (for example, community-driven development, cooperatives, common interest groups, resource user associations)
- Private sector involvement—participation of cooperatives and small and medium enterprise firms in supplying inputs, finance, and services or as buyers of products

Source: Independent Evaluation Group.

International Finance Corporation

Similarly, IEG also manually assessed selected private sector–related success factors and their relationship with the development outcome rating of the Expanded Project Supervision Report. The selected factors were sponsor selection and stress testing during due diligence and balancing trade-offs between development effectiveness and profitability (see figure A.6). Because of the limited number of evaluated MIGA projects, this analysis was not possible for MIGA.

Figure A.6. How International Finance Corporation Due Diligence Affected Development Outcomes



Source: Independent Evaluation Group.

Note: Development outcome rating as per the Expanded Project Supervision Report: high = satisfactory or above; numbers in bubbles = number of cases; qualitative assessment of due diligence (low quality or high quality) as per reference in the Expanded Project Supervision Repor.

Interviews with Bank Group Staff and Management

We conducted interviews to answer the evaluation question "How has the coordination among the World Bank, IFC, and MIGA contributed to enhancing the Bank Group's support to developing agrifood systems?" The interviews were conducted with the following respondents:

» **World Bank:** Two practice managers and a lead agribusiness specialist from the Agriculture and Food Global Practice and one practice manager and two lead specialists from the Finance, Competitiveness, and Innovation Global Practice;

- **IFC:** Three managers and one senior investment officer;
- **MIGA:** Three sector managers, one program manager, and one senior specialist.

The task team leaders conducted the interviews using an interview protocol. Some selected members of the Agribusinesses Sector Working Group preferred to participate as a group by including additional senior staff and managers from their respective departments. This allowed collecting more complete information from the team.

The semistructured interview protocol covered key strategic and operational collaboration issues, experiences, lessons, and challenges before and after the establishment of the Agribusiness Sector Working Group. The interviews lasted 45–90 minutes.

Evaluation Limitations

As described in this appendix, we use a mixed methods approach that relied on a range of data to generate evidence and derive explanatory factors and lessons. Because of the variety (and associated complexity) of underlying interventions, contexts, and outcomes, we were unable to conduct an in-depth (and comprehensive) causal analysis of interventions and their outcomes. Instead, we focused on analyzing and assessing patterns of outcomes across types of interventions as these emerged from multiple sources of evidence. However, despite the strength of the evaluation design in combining multiple data sources to generate evidence, we identified several potential limitations. The evaluation was framed at the Approach Paper stage as a focused evaluation with limited scope and depth rather than a comprehensive thematic evaluation. This was mainly because of its constrained delivery time frame (initially planned for FY21) and the travel restrictions imposed by the coronavirus pandemic. Hence, the analysis of relevance and effectiveness in the three outcome dimensions of productivity, inclusion, and sustainability is centered around a few selected indicators. The effectiveness analysis uses project-level PRA, supplemented by case studies and SLR, rather than analysis of sector- or country-level effects. We were therefore unable to use the

case studies to identify the macro-level success factors that contribute to sectorwide effects.

In addition, the case study approach to the effectiveness questions (using a purposive sample of selected case studies) produces evidence potentially generalizable to similar types of interventions in the portfolio rather than the global set of Bank Group interventions. Focus was placed on the agrifood system development challenges in low-income and lower-middle-income countries, with selected coverage of countries at more advanced stages of development (for learning purposes).

With few exceptions, our methods and scope did not include the achievement of long-term development impacts (for example, reduced hunger or poverty), and we only analyzed distributional effects, jobs, and income sources inside the agrifood system. Our methods also covered gender-related issues only partially, as part of the inclusion outcomes in the analysis of relevance and effectiveness. The PRA methods also exclude World Bank analytics and advisory services, which are not validated by IEG. The effectiveness of MIGA's portfolio could not be evaluated because of the limited number of evaluated interventions.

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Annex AA. Proxy Indicators Used for Analysis of Portfolio Alignment

Table AA.1 Proxy Indicators

Indicator Category	Indicator Name	Indicator Definition	Data Source	Country Coveragea (no.)[a]	Years Covered
Productivity	Cereal yield (kilograms per hectare)	Measured as kilograms per hectare of harvested land; includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains	WDI	132 [144]	2010–18
Productivity	Agriculture, forestry, and fishing, value-added per worker	Value-added is the net output of a sector after adding up all outputs and subtracting intermediate inputs.	WDI	125 [144]	2010–18
Productivity (business environment)	Agricultural policy costs, 1–7 (best)	The score reflects perceptions of a country's agricultural policy environment (1 = excessively burdensome for the economy; 7 = balances well the interests of taxpayers, consumers, and producers).	Global Competitiveness Index, World Economic Forum	105 [151]	2007–17
Productivity (business environment)	Logistics performance index: overall (1 = low, 5 = high)	The score reflects perceptions of a country's logistics based on efficiency of customs clearance, quality of infrastructure, ease of arranging shipments, quality of logistics services, ability to track and trace consignments, and frequency of shipments.	World Bank and Turku School of Economics, Logistic Performance Index Surveys	121 [144]	2007–16
Inclusion (financial)	Market access and agricultural financial services (score 0–100)	Score is the weighted average of the following subindicator scores: (i) access to finance and financial products for farmers, (ii) access to diversified financial products, and (iii) access to market data and mobile banking.	Global Food Security Index—The Economist Intelligent Unit	80 [144]	2012–20

(continued)

Indicator Category	Indicator Name	Indicator Definition	Data Source	Country Coveragea (no.)[a]	Years Covered
Inclusion (financial)	Credit to Agriculture, Fishing, and Forestry, share of total credit (US$)	Data set provides national data on the amount of loans provided by the private or commercial banking sector to producers in agriculture, forestry, and fisheries, including household producers, cooperatives, and agribusinesses.	FAO	95 [144]	2009–19
Inclusion (social)	Poverty headcount ratio at US$1.90 a day, rural (2011 PPP; share of rural population)	The percentage of the rural population living on less than US$1.90 a day at 2011 international prices	World Bank using Global Monitoring Database	84 [144]	2010–18
Inclusion (social)	Prevalence of undernourishment (share of population)	Population below minimum level of dietary energy consumption (also referred to as prevalence of undernourishment) shows the percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously. Data showing as 5 may signify a prevalence of undernourishment below 5%.	World Bank (WDI)	108 [144]	2010–18
Inclusion (social)	Overall Global Gender Gap Index (score 0–1)	The Global Gender Gap Index examines the gap between men and women in four fundamental categories (subindexes) and 14 different indicators that compose them.	World Bank (TCdata360)	111 [144]	2006–20
Sustainability (climate change)	Emissions (CO_2 eq.), agriculture GDP	Agriculture total emissions captures estimated emissions produced by the different agricultural emission subdomains, divided by the total agriculture GDP.	World Bank	132 [144]	2010–18

(continued)

Indicator Category	Indicator Name	Indicator Definition	Data Source	Country Coveragea (no.)[a]	Years Covered
Sustainability (climate change)	ND-GAIN Country Index (1–100)	This summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.	Notre Dame Global Adaptation Initiative	142 [144]	1995–18
Sustainability (standards or practices)	Quality of phytosanitary legislation index (0 = low, 5 = high)	The indicator captures the accessibility of pest information, reporting obligations, quarantine pest lists, pest risk analysis, and risk-based inspections.	Enabling the Business of Agriculture—World Bank	75 [144]	2019
Sustainability (standards or practices)	Land degradation index, Global Food Security Index	A measure of the proportion of land that is degraded over total land area. Threshold values from the Land Portal (SDG indicator 15.3.1) adjusted by the Economist Intelligent Unit using linear transformation of data values to scale 0–100. A value of 1 or below is assigned a score of 100; a value of 61 or above is assigned a score of 0. Other values are adjusted accordingly so that lower data values produce higher scores for land degradation, and higher values indicate lower scores for land degradation.	Global Food Security Index—The Economist Intelligent Unit	80 [144]	2012–20

Source: Independent Evaluation Group.

Note: FAO = Food and Agriculture Organization of the United Nations; GDP = gross domestic product; kg = kilogram; ND-GAIN = Notre Dame Global Adaptation Initiative; PPP = purchasing power parity; SDG = Sustainable Development Goal; WDI = World Development Indicators.

a. Country coverage in terms of number of Bank Group clients with data for this indicator [total Number of Bank Group Client Countries]

Annex AB. Summary of Focus Areas for Case-Based Analysis

Table AB.1 Summary of Focus Area

			Link with Evaluation Outcomes			Mapping to Portfolio		
Focus Area	What Projects Are Included	Typical Interventions	Techn.	Market	Incl	Sust.	World Bank (%)	IFC or MIGA (%)
1. Technology-led, supply-side investment at the farm	Projects primarily focusing on technology-driven increases (irrigation, new varieties, and so on) in productivity to increase food production	» Productive investment on the farm » Technical assistance	Yes	No	Yes	Yes or no	21	n.a.
2. Market- and technology-led, investments primarily in staples	Projects primarily focusing on market- and technology-led productivity growth (in addition to technology-led productivity support) with a specific focus on the inclusion of smallholder farmers into output markets and value chains (using producer groups or alliances)	» Productive investment at the farm » Technical assistance » Business development and market links » Value chain development or integration into value chains	Yes	Yes	Yes	Yes or no	30	n.a.

(continued)

Focus Area	What Projects Are Included	Typical Interventions	Link with Evaluation Outcomes				Mapping to Portfolio	
			Techn.	Market	Incl	Sust.	World Bank (%)	IFC or MIGA (%)
3. Market- and technology-led, investments in high-value sectors with sustainability standards	Market- and technology-led projects with a specific focus on higher-value sectors that require sustainability standards	» Productive investment at the farm or firm » Technical assistance » Productive investment in local aggregation, quality standards, and marketing	Yes	Yes	Yes	Yes or no	18	n.a.
4. Midstream private sector investments for processing and value addition	Projects investing in technologies and capacity for processing and value addition by supporting established lead firms to increase their productivity and optimize their supply chains	» Productive investment in the firm or the immediate supply chain of the firm » Supply chain optimization through technical assistance or advisory services, including on quality and sustainability standards	Yes	Yes	Yes	Yes or no	n.a.	53

Source: Independent Evaluation Group.

Note: IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency; n.a. = not applicable.

Appendix B. Portfolio Review and Analysis

Overall World Bank Group Portfolio

The portfolio for projects, investments, and guarantees for the World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) with explicit agrifood system components is presented in table B.1. This comprises 609 World Bank lending projects with an amount of $39.9 billion, 331 IFC investment services (IFC IS) amounting to $9.5 billion, and 21 MIGA guarantees with a gross exposure amount of $0.5 billion. In addition, there are 406 World Bank advisory services and analytics (ASA) and 210 IFC advisory services (IFC AS) projects. About 51 percent of World Bank lending projects, 42 percent of IFC IS, and 42 percent of IFC AS are closed.

Figure B.1 shows the portfolio distribution by country income group. The World Bank (35 percent of projects) and MIGA (33 percent) have the strongest presence in low-income countries (LICs), followed by World Bank ASA and IFC AS. IFC IS has 9 percent of its investments in LICs. In addition, all Bank Group institutions have a strong presence in lower-middle-income countries (LMICs). IFC IS is more focused on middle-income economies (LMICs and upper-middle-income countries), which account for 85 percent of its investments. The World Bank is more focused on LICs and LMICs, which account for about 79 percent of its lending projects.

Table B.1. Bank Group Agrifood Projects Approved, Fiscal Years 2010–20

Commitment Type	All Projects	Active	Closed	Commitment (US$, millions)[a]
Projects or investments	940	491	449	49,459
World Bank projects	609	298	311	39,932
IFC IS[b]	331	193	138	9,527

(continued)

Commitment Type	All Projects	Active	Closed	Commitment (US$, millions)[a]
Analytic and advisory activities	705	138	567	568
World Bank ASA	495	17	478	152
IFC AS[c]	210	121	89	416
MIGA guarantees[d]	21	8	13	474
Total	1,666	637	1,029	50,501

Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog; IFC management information system database; IFC Advisory Services Operations portal; MIGA portal.

Note: ASA = advisory services and analytics; FY = fiscal year; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MIGA = Multilateral Investment Guarantee Agency.

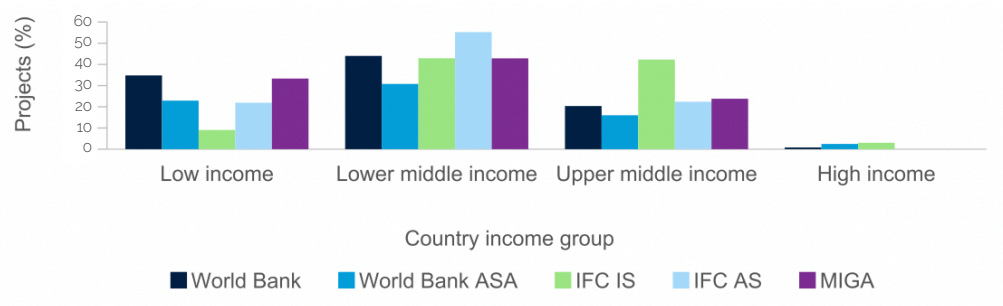
a. Agrifood share of project commitments.

b. IFC's own account of original commitment amount, excluding mobilization.

c. IFC AS total funding amount managed by IFC.

d. IGA amount is gross exposure amount.

Figure B.1. World Bank Group Agrifood Portfolio by Country Income Group

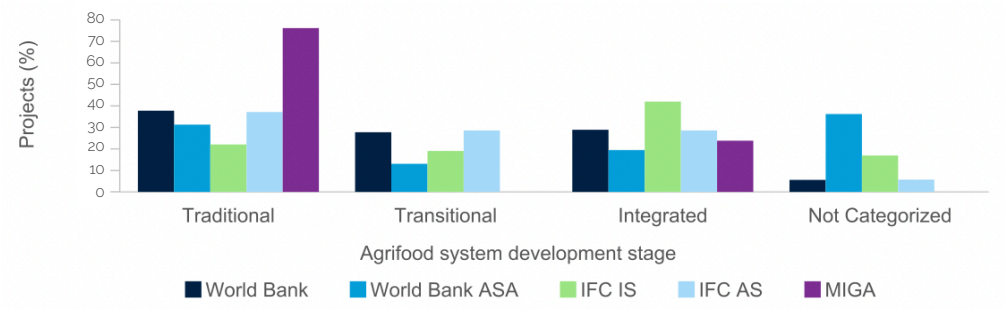


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog; IFC management information system database; IFC Advisory Services Operations portal; MIGA portal.

Note: ASA = advisory services and analytics; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MIGA = Multilateral Investment Guarantee Agency.

The portfolio distribution by the three agrifood system development stages is presented in figure B.2. Although the MIGA portfolio is small, it has the most pronounced focus (76 percent) on countries at the traditional stages, followed by the World Bank and IFC AS. The World Bank and IFC AS show strikingly similar patterns in project allocation across stages of agrifood system development. IFC IS has 42 percent of its portfolio in countries at the integrated stage but still has a relatively strong presence in countries at the traditional (22 percent) and transitional (19 percent) stages (see figure B.2). This indicates that IFC agribusiness investment opportunities are higher in countries at more advanced stages of agrifood system development with modernized agrifood processing, distribution, trade, and service sectors.

Figure B.2. Bank Group Agrifood Portfolio by Agrifood System Development Stage



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog; IFC management information system database; IFC Advisory Services Operations portal; MIGA portal.

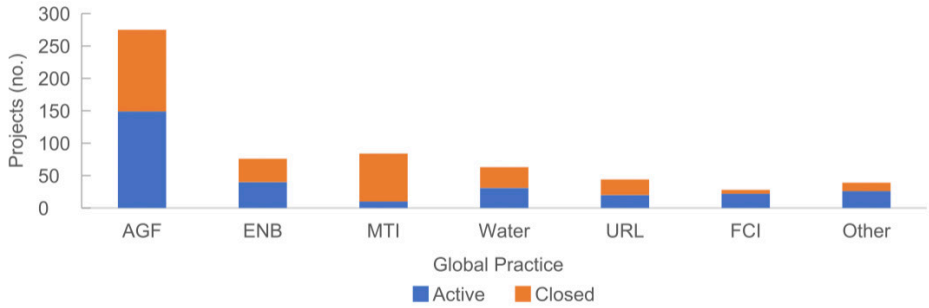
Note: Agrifood system development stages were categorized based on existing literature. ASA = advisory services and analytics; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MIGA = Mulitlateral Investment Guarantee Agency.

Portfolio Characteristics

World Bank

World Bank projects by development stages. The distribution of the World Bank projects by Global Practice (GP) shows that the highest number of projects is mapped to the Agriculture and Food GP, as expected, with 275 projects, followed by Macroeconomics, Trade, and Investment with 84 projects. The Agriculture and Food GP also leads with a $24.6 billion commitment amount. This is followed by the Water GP at $6.3 billion (see figures B.3 and B.4).

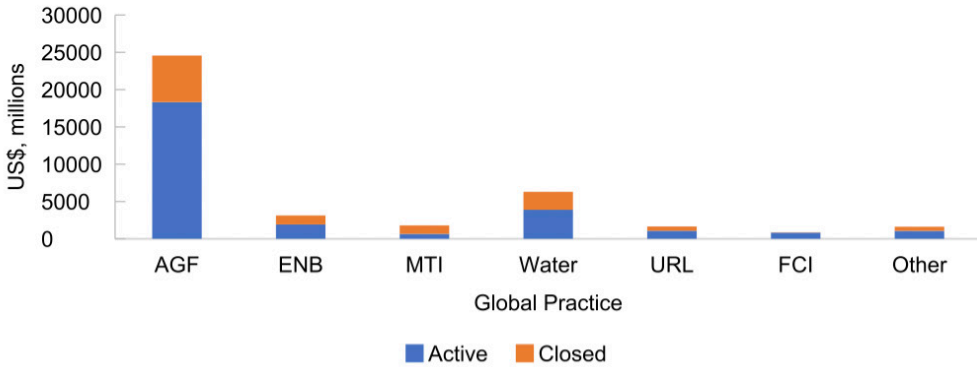
Figure B.3. Lending Projects by Global Practice, Approved Fiscal Years 2010–20



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AAGF = Agriculture and Food; ENB = Environment, Natural Resources, and Blue Economy; FCI= Finance, Competitiveness, and Innovation; MTI= Macroeconomics, Trade, and Investment; URL = Urban, Rural, and Land.

Figure B.4. World Bank Net Commitment Amount by Global Practice, Approved Fiscal Years 2010–20

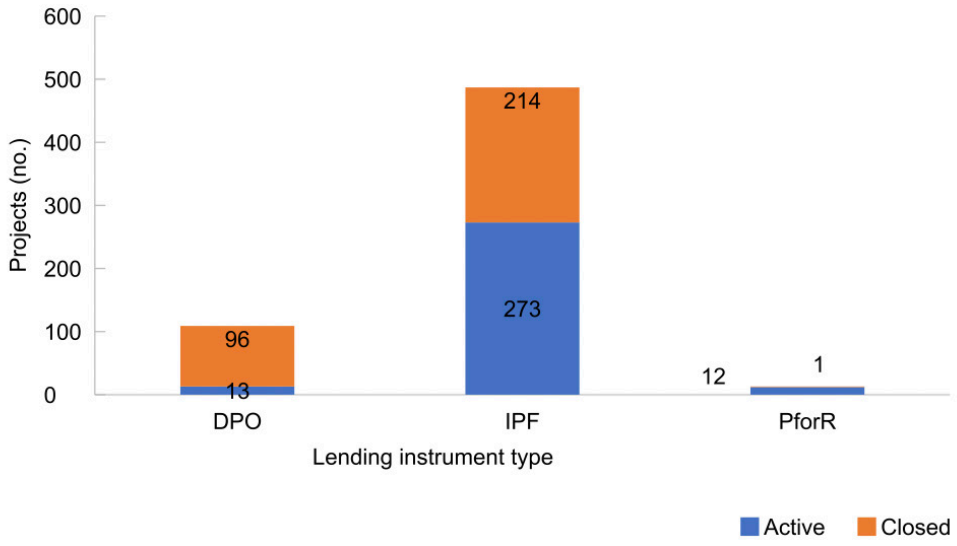


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AGF = Agriculture and Food; ENB = Environment, Natural Resources, and Blue Economy; FCI= Finance, Competitiveness, and Innovation; MTI= Macroeconomics, Trade, and Investment; URL = Urban, Rural, and Land.

World Bank projects by lending instrument. Investment project financing (IPF) is the main instrument used for World Bank lending projects, comprising 79 percent of projects and 90 percent of net commitment amounts (figures B.5 and B.6). This is followed by development policy operations (DPOs; 18 percent of projects and 9 percent of net commitment amount). The Program-for-Results instrument is relatively new and accounts for about 6 percent of net commitment amount.

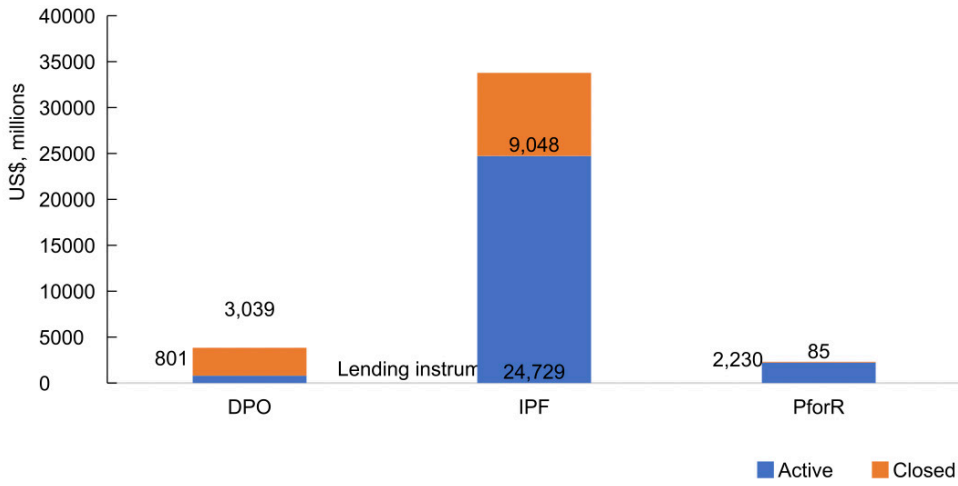
Figure B.5. Projects by Lending Instrument, Approved Fiscal Years 2010–20



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: DPO = development policy operation; IPF = investment project financing; PforR = Program-for-Results.

Figure B.6. Commitment Amounts by Lending Instrument, Approved Fiscal Years 2010–20

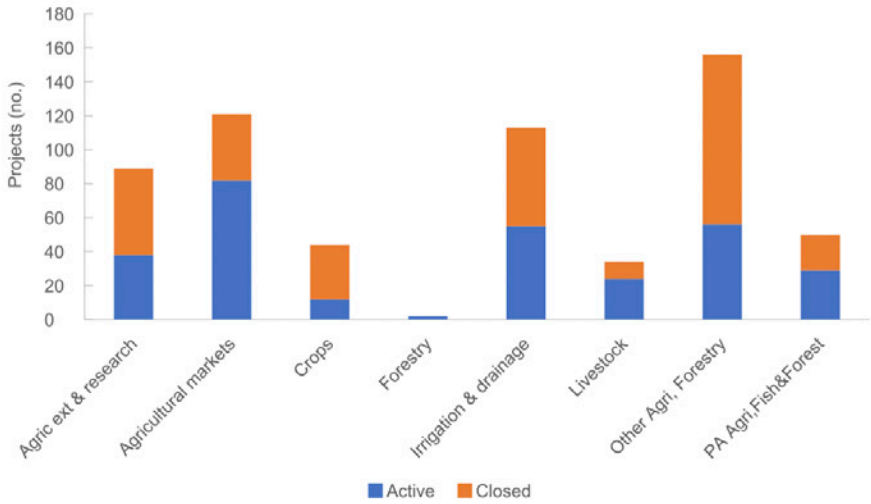


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: DPO = development policy operation; IPF = investment project financing; PforR = Program-for-Results.

World Bank projects by major sector. The breakdown of World Bank projects by major sector code (based on highest allocated commitment amount) shows that the majority of projects (156) are categorized under the "other agriculture, forestry, and fisheries" code, which is a combination of various types of projects with multiple intervention types, from agroforestry to rural infrastructure. This is followed by the "agricultural markets" sector code with 121 projects. There are 113 "irrigation and drainage" projects and 89 "agricultural extension and research" projects. The "public administration" sector code has 50 projects, followed by the "crops" code, which has 44 projects, and the "livestock" code, which has 34 projects (see figure B.7). This shows that lending projects categorized under the two main production sectors, "crop" or "livestock," are limited, and several projects include other attributes that go beyond the commodity focus.

Figure B.7. Projects by Major Agricultural Sector Code, Approved Fiscal Years 2010–20



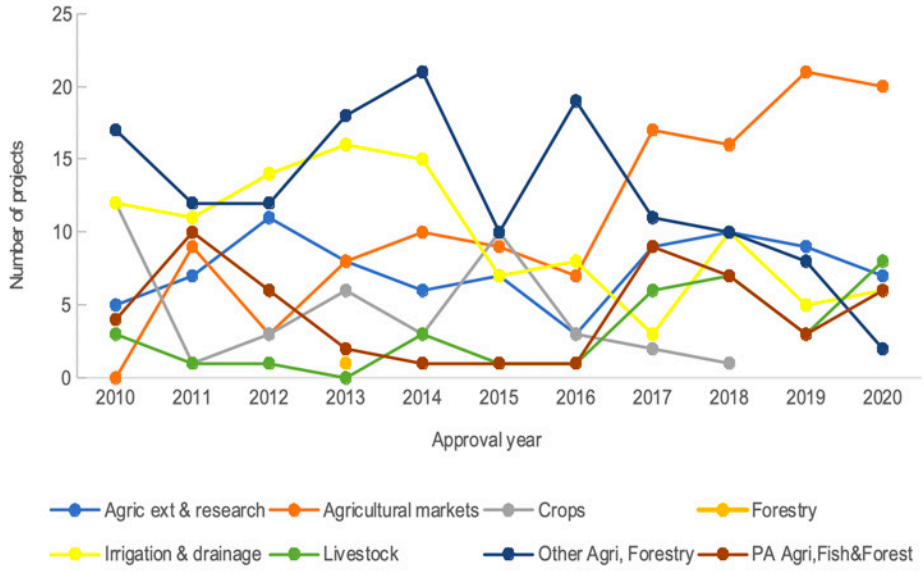
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: PA = public administration.

The temporal trends for projects in the major sector codes (based on highest allocated commitment amount) show that projects approved and mapped under the sector codes "agricultural markets" and "livestock" as the major sectors increased over time, but "irrigation and drainage" and "other agriculture and forestry" declined (figure B.8). The "livestock" sector

projects picked up more significantly after 2016, but there were no "crops" commodity sector projects after 2018.

Figure B.8. Projects by Major Agricultural Sector Code and Approval Year, Fiscal Years 2010–20



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: FY = fiscal year; PA = public administration.

World Bank projects by crop or food product type. The breakdown of projects by type of crop or livestock food product type, based on analysis of World Bank product-linked projects that identify the targeted product type, shows that livestock products comprise the highest percentage of projects (43 percent), followed by basic staples (cereals), legumes, oils, and nuts. Fruits and vegetables have the lowest share, with 4 percent (figure B.9). This excludes projects that are not linked to products and fall under the general agrifood system (for example, policy reforms that improve the overall business environment and are not targeted to a specific product).

Figure B.9. Breakdown of World Bank Product-Linked Projects by Crop or Food Product Type (percent)

Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: The area of each rectangle is proportional to the share of projects linked to the corresponding crop or food product type in the total number of projects linked to products. veg. = vegetables.

World Bank projects categorized under livestock products. Classification of the livestock sector projects into specific livestock subcategories shows that the majority of livestock projects cover fish (34 percent), followed by the dairy (27 percent) and poultry (15 percent). Sheep and goats have the lowest share, with 3 percent (figure B.10). About 45 percent of livestock projects could not be mapped to any specific products.

Figure B.10. Projects Categorized under Livestock Product Type (percent)

Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: The area of each rectangle is proportional to the share of projects linked to the corresponding livestock type in the total number of projects linked to specific livestock types.

Although stand-alone fish projects were excluded from the portfolio, the fish-related activities identified here are integrated as part of the mainstream crop and livestock production activities included in the portfolio.

World Bank ASA projects by product line. ASA project types mainly include nonlending technical assistance (32 percent), followed by economic and sector work (28 percent) and research services (13 percent; see table B.2).

Table B.2. World Bank Advisory Services and Analytics Projects Approved, Fiscal Years 2010–20

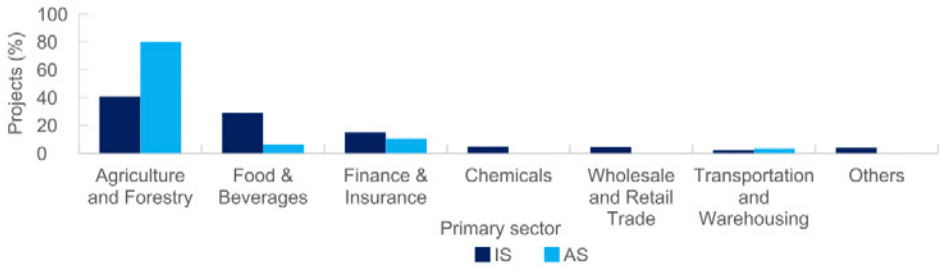
Product Line	Projects (no.)				Amount (US$, millions)			
	Active	Closed	Total	%	Active	Closed	Total	%
Advisory services and analytics	4	41	45	9	5	17	22.1	14
Donor and aid coordination	11	4	15	3	1	1	1.7	1
Economic and sector work	0	155	155	31	n.a.	30	30	19
External training	0	1	1	0	n.a.	1	0.8	0
Impact evaluation	0	13	13	3	n.a.	3	2.6	2
Research services	2	78	80	16	0	46	45.9	29
Technical assistance (nonlending)	0	186	186	38	n.a.	56	56.5	36
Total	17	478	495	100	7	152	159.0	100

Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.
Note: n.a. = not applicable.

International Finance Corporation Investment Services and Advisory Services

IFC projects by primary sector. The "agriculture and forestry" sector represents the largest sector, accounting for 80 percent of all IFC AS and 41 percent of IFC IS projects. "Finance and insurance" also holds a significant percentage of IFC IS and IFC AS projects, whereas "food and beverages" projects are mostly concentrated in the IFC IS portfolio (see figure B.11).

Figure B.11. International Finance Corporation Projects by Primary Sector)



Source: Independent Evaluation Group.

Note: IFC IS, *n* = 331; IFC AS, *n* = 210. AS = advisory services; IS = investment services.

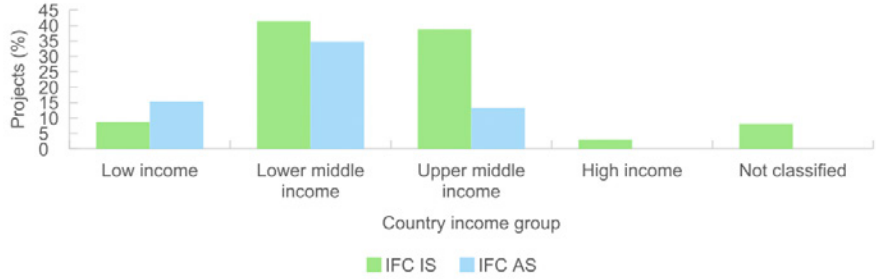
IFC projects by Region. The majority of IFC AS projects are concentrated in Sub-Saharan Africa, in LMICs, and in countries at the traditional stage of agrifood system development. By comparison, IFC IS projects are largely located in middle-income countries and tend to be more dispersed across geographic regions, with the Sub-Saharan Africa, Europe and Central Asia, and Latin America and the Caribbean Regions all having similar numbers of projects (see figures B.12, B.13, and B.14).

Figure B.12. International Finance Corporation Projects by World Region

Source: Independent Evaluation Group.

Note: IFC IS: *n* = 331; IFC AS: *n* = 210. EAP = East Asia and Pacific; ECA = Europe and Central Asia; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; LAC = Latin American and the Caribbean; MENA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

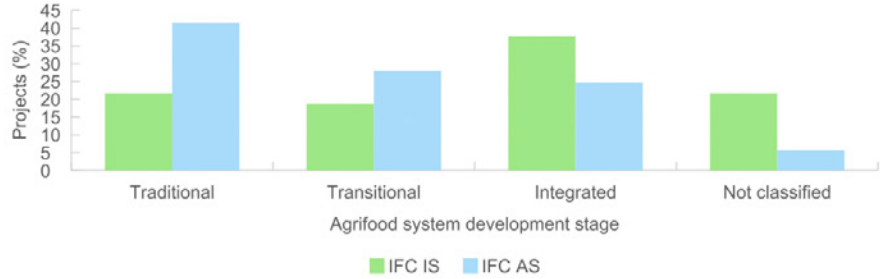
Figure B.13. International Finance Corporation Projects by Income Group



Source: Independent Evaluation Group.

Note: IFC IS, *n* = 331; IFC AS, *n* = 210. IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services.

Figure B.14. International Finance Corporation Projects by Agrifood System Development Stage

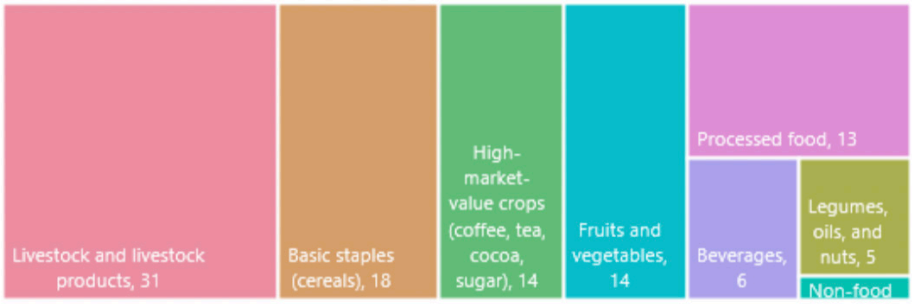


Source: Independent Evaluation Group.

Note: IFC IS, *n* = 331; IFC AS, *n* = 210. AFSD = agrifood system development; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services.

IFC projects by crop or food product type. Livestock products comprise the largest share of IFC IS projects (31 percent), followed by fruits and vegetables (14 percent) and high-market-value crops (14 percent). The nonfood crops account only for 1 percent of IFC IS projects (figure B.15). Among the livestock projects, dairy (29 percent), pork (27 percent), and poultry (21 percent) account for more than three-quarters of the livestock investment portfolio (figure B.16).

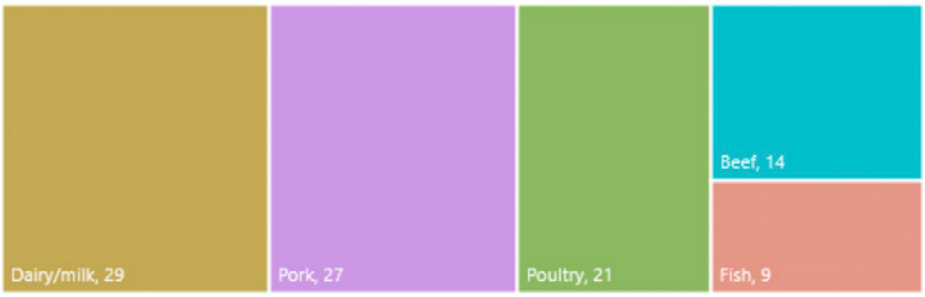
Figure B.15. International Finance Corporation Agribusiness Investment Services Projects by Crop or Food Product Type (percent)



Source: Independent Evaluation Group.

Note: n = 231. The area of each rectangle is proportional to the share of projects linked to the corresponding crop or food product type in the total number of projects linked to crops or food products. "Non-food" refers to nonfood commodities such as cotton and textiles (representing 1 percent).

Figure B.16. International Finance Corporation Agribusiness Investment Services Livestock Projects by Product Type (percent)



Source: Independent Evaluation Group.

Note: n = 61. The area of each rectangle is proportional to the share of projects linked to the corresponding livestock product type in the total number of projects linked to livestock product types.

Multilateral Investment Guarantee Agency

MIGA portfolio. The MIGA portfolio is small and contains only 21 guarantees as political risk insurance to agrifood system development investments in client countries. The supported projects are in the mainstream agribusiness (76 percent) and in manufacturing (24 percent). Most of these political risk insurance projects are located in low- and LMICs and in Sub-Saharan Africa—indicative of regions where noncommercial risk is high. More than 76 percent are in LICs and LMICs that represent countries at the traditional stages of agrifood system development (table B.3). Of those 21 guarantees, we evaluated only four. Hence, we did not systematically assess the effectiveness of the MIGA portfolio because this would not provide any conclusive evidence.

Table B.3. Multilateral Investment Guarantee Agency Guarantees by Different Country Categories

Industry	MIGA Guarantees						
	(no.)	Income group	(no.)	Region	(no.)	AFSD stage	(no.)
Agribusiness	16	Low-income	7	Europe and Central Asia	1	Traditional	16
Manufacturing	5	Lower-middle-income	9	Latin America and the Caribbean	1	Integrated	5
		Upper-middle-income	5	Middle East and North Africa	1		
				Sub-Saharan Africa	18		

Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AFSD= agrifood system development; MIGA = Multilateral Investment Guarantee Agency.

Categorization of Bank Group Projects by Outcomes

Bank Group projects were classified into the three main outcomes (productivity, inclusion, and sustainability) using information from the project development objective statements and component descriptions. This shows that a majority of the projects were engaged in enhancing the productivity of agricultural production or processing activities. This includes 98 percent for World Bank lending, 91 percent for World Bank ASA, 88 percent for IFC IS, 95 percent for IFC AS, and 100 percent for MIGA. Inclusion is more frequent for IFC IS and IFC AS projects (more than 70 percent), followed by World Bank lending (67 percent), MIGA (52 percent), and World Bank ASA (49 percent). Sustainability outcome is most frequently included in World Bank lending (55 percent), followed by MIGA (43 percent) and IFC AS (40 percent; figure B.17). The relevant definitions for the portfolio classification are given in box B.1.

Box B.1. Definitions for Agrifood System Development Outcome Categories

- **Technology-led productivity:** increase in net yield, revenue, or income for farms and agribusiness firms resulting from projects involved in delivering improved technologies, inputs, advisory services, extension, technical assistance, and capacity development activities for increasing the value of crop and livestock production or reducing costs.
- **Market-led productivity:** increase in revenue or income for farms and agribusiness firms resulting from projects that aim to improve market access, market participation, or commercialization of production by improving market links, developing value chains, contracting arrangements, and processing, or improving the business environment, including rural roads and infrastructure.
- **Inclusion:** increased access and participation of smallholder farmers or micro, small, and medium enterprise firms and enhanced social inclusion of traditionally

(continued)

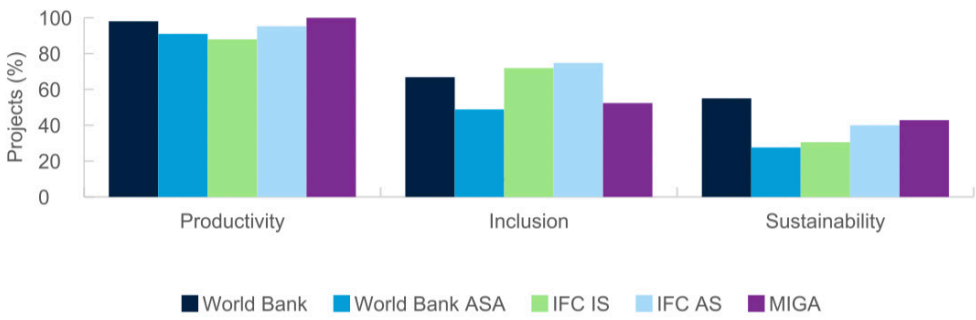
Box B.1. Definitions for Agrifood System Development Outcome Categories (cont.)

underserviced or marginalized groups (for example, indigenous groups, minorities) through projects that improve markets and services (including financial services, input and output markets) and enhance benefit flows from agricultural development programs.

» **Sustainability:** improved environmental outcomes in agrifood systems (including reduced threats from climate change) resulting from increased uptake of sustainability standards and practices through agribusiness development, climate-smart agriculture, or improved management of natural resources.

Source: Independent Evaluation Group.

Figure B.17. World Bank Group Projects by Primary Outcome



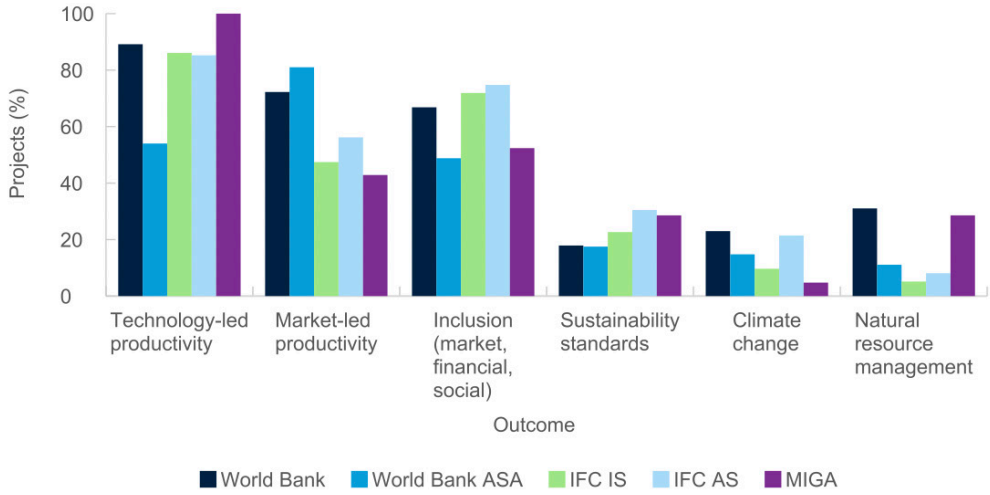
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog; IFC management information system database; IFC Advisory Services Operations portal; MIGA portal.

Note: ASA = advisory services and analytics; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MIGA = Multilateral Investment Guarantee Agency.

In addition, we further classified the Bank Group projects into second-level outcomes. This meant classifying productivity projects into technology-led production, market-led production, or both. Sustainability projects were subclassified into sustainability standards, climate change, or natural resource management. We also classified inclusion projects into market inclusion, financial inclusion, or social inclusion. Accordingly, World Bank lending and nonlending (ASA) projects had significantly higher levels of involvement in market-led productivity (linking farmers to markets) compared with IFC and MIGA. About 89 percent and 72 per-

cent of World Bank lending activities had production and market-led activities, respectively. For IFC, 86 percent and 72 percent of the investments were technology-led and market-led, respectively. The World Bank also exhibits a strong emphasis on climate change (23 percent) and natural resource management (31 percent). IFC IS and IFC AS show a strong emphasis on inclusion through market participation and financial inclusion interventions. IFC and MIGA also have stronger focus on sustainability standards to support clients in meeting the social and environmental standards required by high-value markets (see figure B.18).

Figure B.18. Categorization of Bank Group Projects by Second-Level Outcomes



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog; IFC management information system database; IFC Advisory Services Operations portal; MIGA portal.

Note: ASA = advisory services and analytics; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MIGA = Multilateral Investment Guarantee Agency.

In addition, about 71 percent of World Bank projects combined both production and market-related activities. About 47 percent of production projects also had market inclusion, and 45 percent had social inclusion. About 20 percent of the production projects included activities for improving sustainability standards (including improved practices for climate resilience, sanitary and phytosanitary regulations, and food safety standards). About 22 percent of production projects had explicit climate change (adaptation or mitigation) activities, and 32 percent included activities for enhancing natural resource management, including improved governance and management of agricultural landscapes, water, forests, rangelands, coastal systems, and ecosystem services (table B.4).

Table B.4. Share of World Bank Lending Projects by the Second-Level Outcomes and Intersections Matrix across Outcome Categories (percent)

Projects	Technology Led	Market Led	Financial Inclusion	Market Inclusion	Social Inclusion	Sustainability Standards	Climate Change	NRM
All projects	89	72	11	46	45	18	23	31
Technology-led	100							
Market-led	71	100						
Financial inclusion	12	14	100					
Market inclusion	47	64	73	100				
Social inclusion	45	50	62	56	100			
Sustainability standards	19	21	18	26	17	100		
Climate change	22	19	15	17	22	17	100	
NRM	32	26	20	20	25	20	48	100

Source: Independent Evaluation Group.

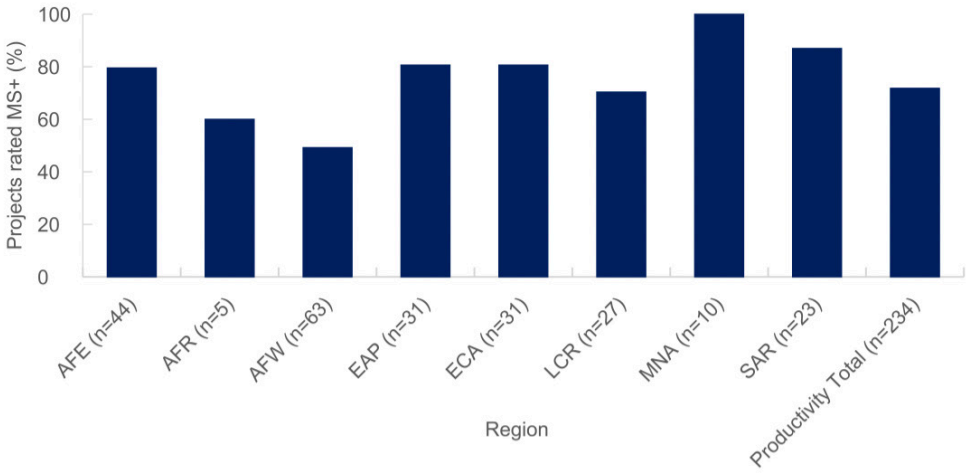
Note: n = 609. The empty cells are a mirror image of the filled cells in the matrix. NRM = natural resource management.

Project Performance

World Bank

Performance levels by Region. The Independent Evaluation Group (IEG) outcome ratings for projects pursuing the productivity outcome show that about 72 percent were successful (that is, had moderately satisfactory or above [MS+] outcome ratings). This is comparable to the Sustainable Development Practice Group, which has 73 percent of projects rated successful. There is, however, significant variability in the performance levels across Regions; the lowest share of successful projects is in the Western and Central Africa Region, and the highest share is in the Middle East and North Africa Region (figure B.19).

Figure B.19. Independent Evaluation Group Outcome Rating for World Bank Productivity Projects by Region



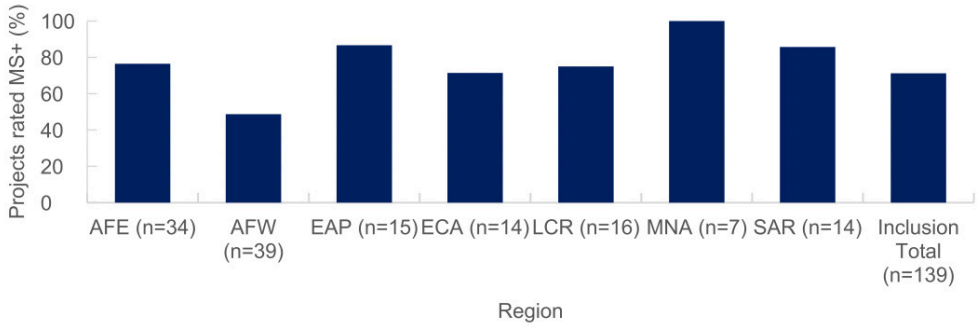
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AFE = Eastern and Southern Africa; AFR = All of Africa; AFW = Western and Central Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; MS+ = moderately satisfactory or above; SAR = South Asia.

Similar results emerge for the inclusion and sustainability outcomes (figures B.20 and B.21). About 71 percent of the inclusion projects are successful (MS+ outcome rating). The project performance in Western and Central Africa is 49 percent, compared with 76 percent for Eastern and Southern Africa. For the sustainability outcome, about 78 percent of projects that pursue

this outcome are successful—that is, rated MS+ in their development effectiveness. Again, the projects in Western and Central Africa have the lowest success rates (44 percent).

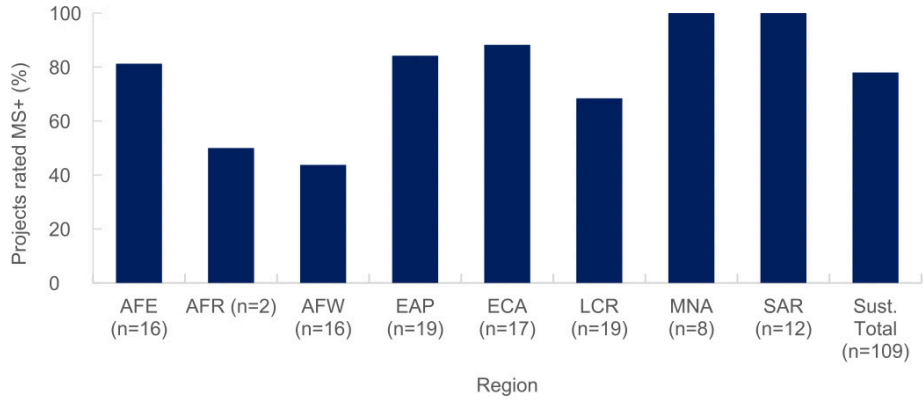
Figure B.20. Independent Evaluation Group Outcome Rating for World Bank Inclusion Projects by Region



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AFE = Eastern and Southern Africa; AFW = Western and Central Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; MS+ = moderately satisfactory or above; SAR = South Asia.

Figure B.21. Independent Evaluation Group Outcome Rating for World Bank Sustainability Projects by Region



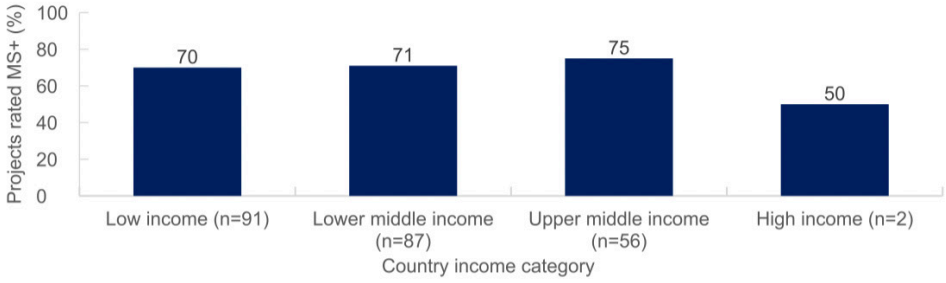
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AFE = East Africa; AFR = All of Africa; AFW = West Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; MS+ = moderately satisfactory or above; SAR = South Asia.

Performance levels by country income category. The IEG development effectiveness (outcome) ratings for productivity, inclusion, and sustainability by country income category are given in figures B.22, B.23, and B.24, respectively. For productivity and inclusion outcomes, the highest percent-

age of successful projects is in upper-middle-income countries, followed by LMICs. For the sustainability outcome, LMICs have the highest percentage of satisfactory projects. Overall, performance is lower in LICs across all three outcomes (excluding high-income countries, which have only a few observations and cannot be assessed).

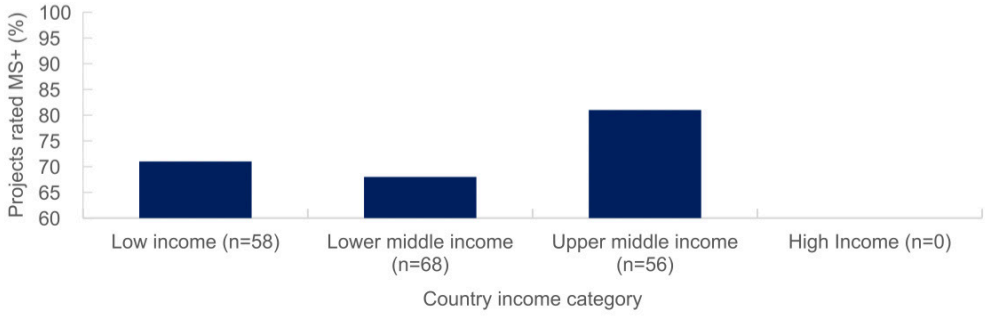
Figure B.22. Independent Evaluation Group Outcome Ratings for World Bank Productivity Projects by Country Income Category



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

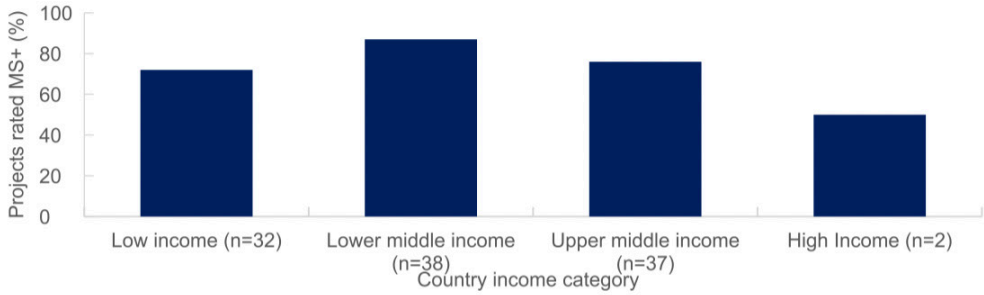
Figure B.23 Independent Evaluation Group Outcome Rating for World Bank Inclusion Projects by Country Income Category



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

Figure B.24 Independent Evaluation Group Outcome Rating for World Bank Sustainability Projects by Country Income Category

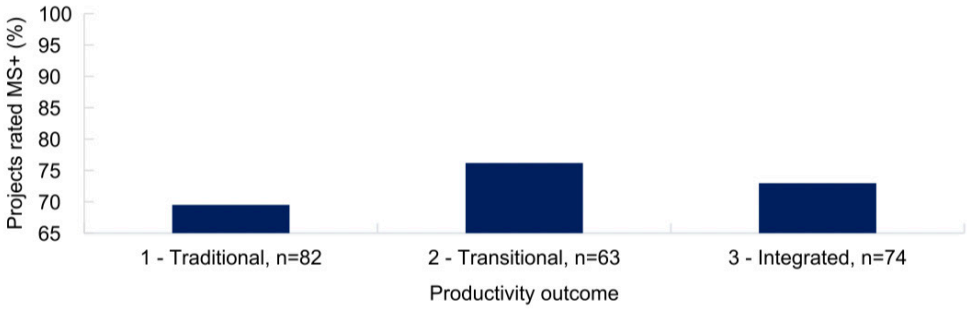


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

Performance levels by stages of agrifood system development. The IEG outcome ratings for productivity, inclusion, and sustainability by the country's agrifood system development stage are presented in figures B.25, B.26, and B.27, respectively. The countries at the transitional stage have the highest percentage of successful projects, followed by countries at the integrated stages. The countries at the traditional stage have the lowest percentage of successful projects for all three outcomes.

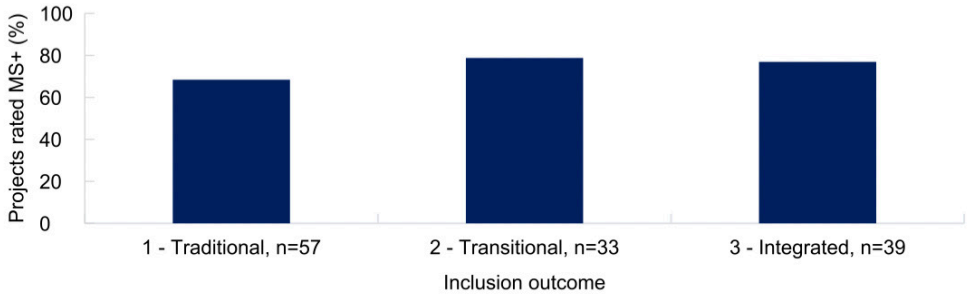
Figure B.25 Independent Evaluation Group Outcome Rating for World Bank Projects for Productivity Outcome by Agrifood System Development Stage



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

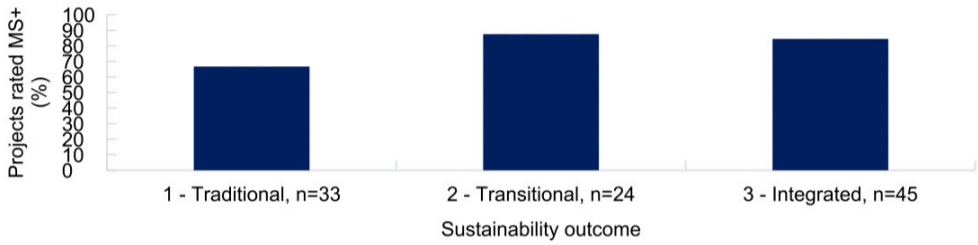
Figure B.26 Independent Evaluation Group Outcome Rating for World Bank Projects for Inclusion Outcome by Agrifood System Development Stage



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

Figure B.27 Independent Evaluation Group Outcome Rating for World Bank Projects for Sustainability Outcome by Agrifood System Development Stage



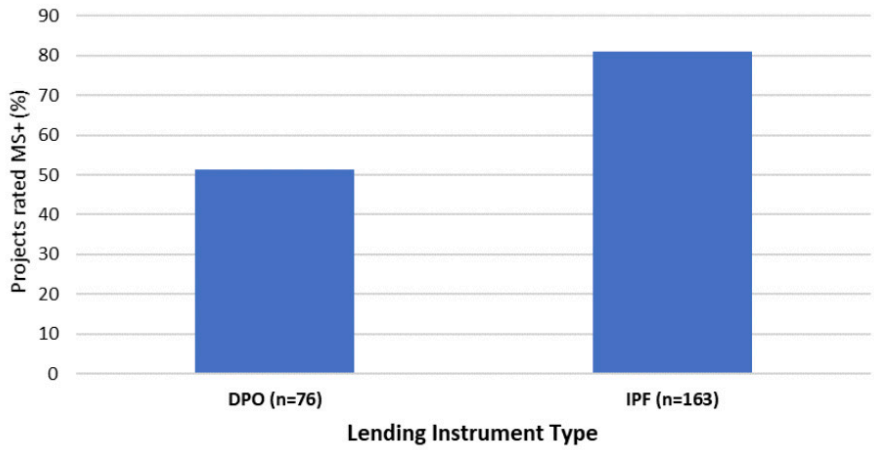
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

Performance levels by lending instrument. About 32 percent of the evaluated projects were financed through development policy financing (DPF), and the remaining balance falls under IPF. However, DPOs financed through the DPF financing instrument are materially different from the IPFs and cannot be directly compared. Nevertheless, IEG outcome ratings for DPOs (51 percent successful) are generally lower than IPF projects (81 percent successful; figure B.28). The complexity of the DPF projects, which cover several sectors outside agrifood systems, and the challenges of connecting

the achievement of upstream policy reforms (prior actions) with intended outcomes at the local level often affect IEG outcome ratings for DPOs. The regional breakdown of DPF projects shows that the Western and Central Africa Region has the lowest percentage of successful operations, followed by Latin America and the Caribbean (see figure B.29).

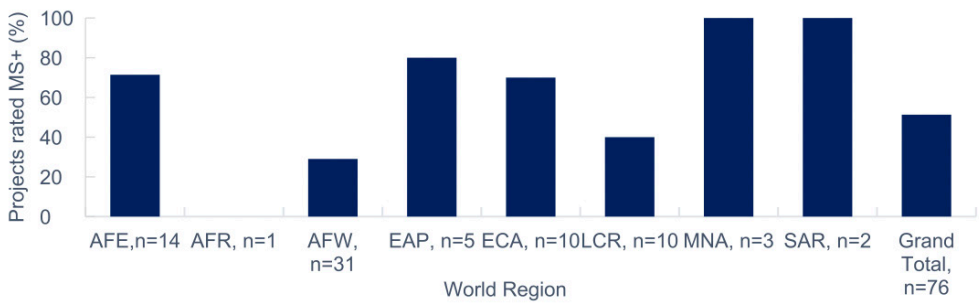
Figure B.28 Independent Evaluation Group Outcome Rating for World Bank Projects Lending Instrument



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: DPO = development policy operation; IPF = investment project financing; MS+ = moderately satisfactory or above.

Figure B.29 Independent Evaluation Group Outcome Rating for World Bank Development Policy Financing Projects by Region

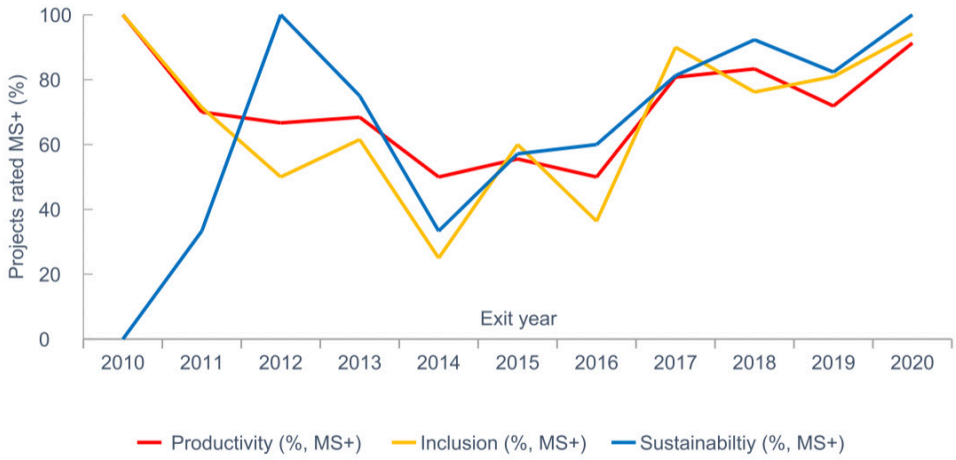


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: AFE = Eastern and Southern Africa; AFR = All of Africa; AFW = Western and Central Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; MS+ = moderately satisfactory or above; SAR = South Asia.

IEG outcome ratings over time. IEG outcome ratings for World Bank projects show that for each of the three level 1 outcomes, the share of successful projects has increased since 2016 (see figure B.30).

Figure B.30 Independent Evaluation Group Outcome Rating for World Bank Projects over Time FY10–20

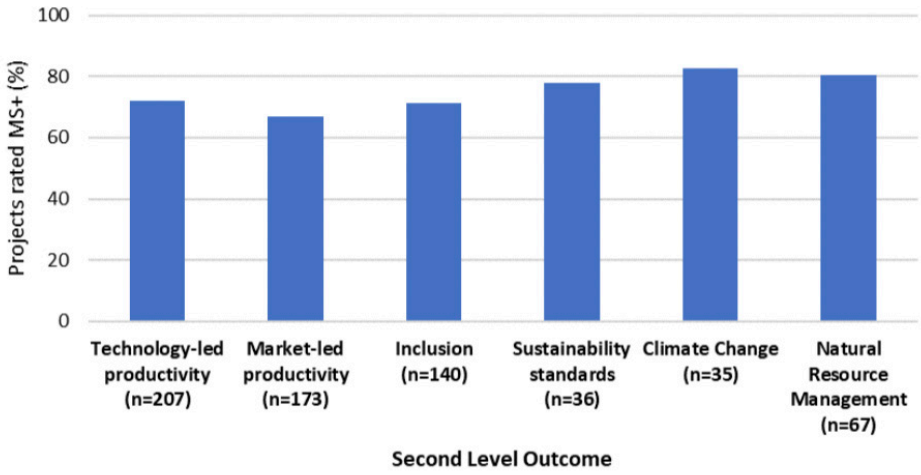


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: FY = fiscal year; MS+ = moderately satisfactory or above.

IEG outcome ratings by second-level outcomes. The IEG outcome ratings for World Bank projects by second-level outcomes show that market-led projects have a lower rate of effectiveness, followed by inclusion and technology-led projects (figure B.31). Conversely, projects pursuing climate change and natural resource management outcomes have a substantially higher percentage of successful projects. This indicates that environmental projects within agricultural landscapes and projects that support climate-resilient practices have generally been able to achieve their targets.

Figure B.31 Independent Evaluation Group Outcome Ratings for World Bank Projects by Second-Level Outcomes

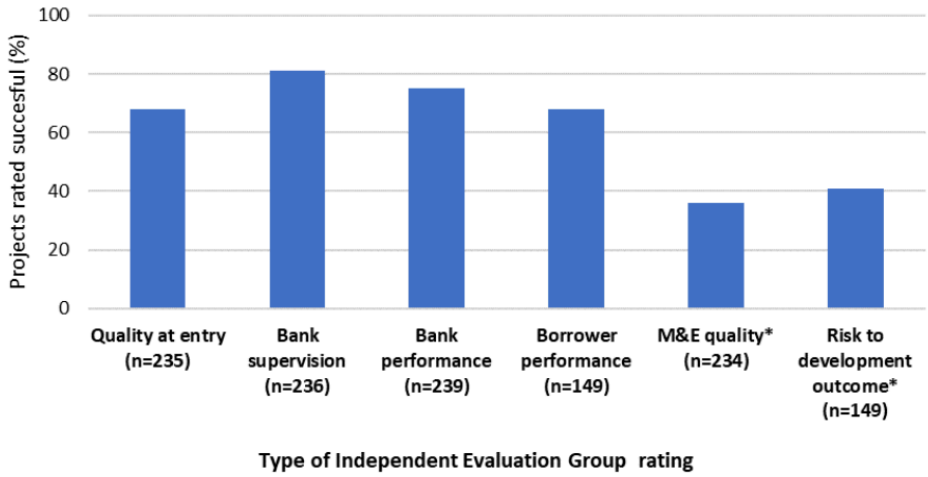


Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: MS+ = moderately satisfactory or above.

Other IEG ratings on development effectiveness. The IEG ratings for World Bank projects for other aspects of development effectiveness (beyond the outcome ratings) show that Bank performance, and more particularly World Bank supervision, is rated better than the other categories (figure B.32). M&E quality has been one of the long-term challenges for projects for agriculture projects—only 36 percent of projects are rated substantial or higher, but this has improved significantly since 2019 and remains similar to the M&E quality ratings for the Sustainable Development Practice Group (figure B.33).

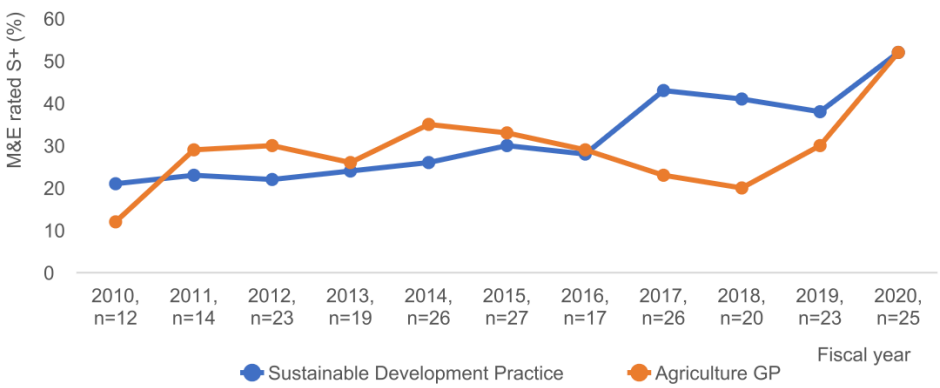
Figure B.32 Other Independent Evaluation Group Ratings on Development Effectiveness for World Bank Projects



Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: M&E quality data show share of projects rated substantial and above; risk to development outcome data show share of projects rated modest, moderate, or lower. M&E = monitoring and evaluation.

Figure B.33 Independent Evaluation Group M&E Ratings Compared with Sustainability Practice over Time, Fiscal Years 2010–20



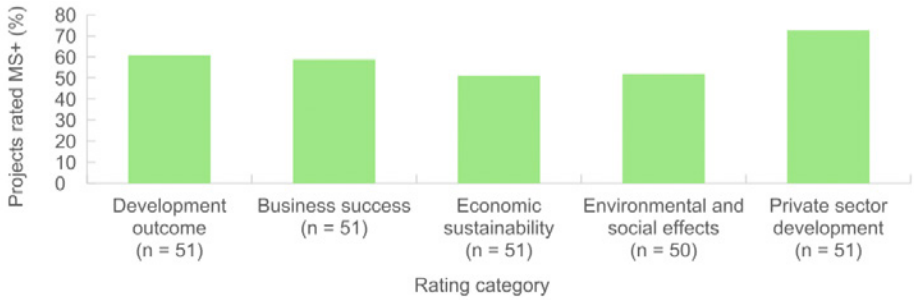
Source: World Bank Business Intelligence Database; World Bank Enterprise Data Catalog.

Note: M&E quality data show share of projects rated substantial and above. GP = Global Practice; M&E = monitoring and evaluation; S+ = substantial or above.

International Finance Corporation

IEG outcome ratings for IFC IS. The development effectiveness ratings for IFC investment projects show that private sector development ratings by far outperform other main ratings, such as economic sustainability and environmental and social (E&S) effects (see figure B.34). About 73 percent of IFC IS projects are successful in contributing to private sector development, compared with about 51 percent for economic sustainability and 61 percent for overall development outcomes.

Figure B.34 International Finance Corporation Investments, Main Development Effectiveness Ratings

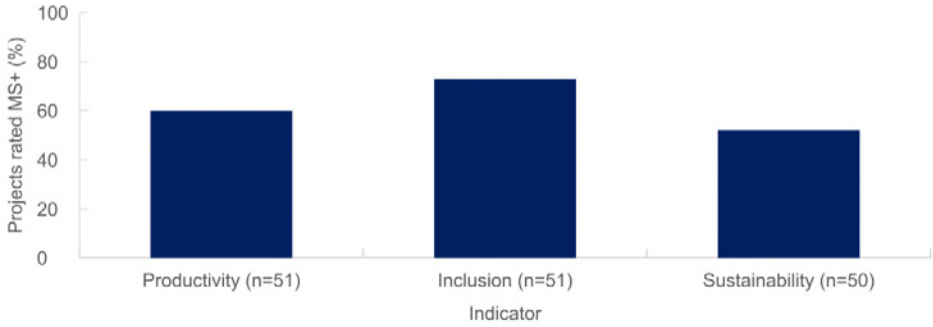


Source: Independent Evaluation Group.

Note: One environmental and social effects rating was deemed "no opinion possible" and was excluded from this analysis. MS+ = mostly successful or better.

IEG outcome rating for IFC investment projects. For IFC IS, we used different subratings as proxies to assess the effectiveness in relation to productivity, inclusion, and sustainability outcomes. Productivity was measured using the project's business success ratings. Inclusion was assessed using the project's private sector development ratings, and sustainability was assessed using the E&S effects for sustainability ratings determined based on compliance with IFC E&S Performance Standards (see figure B.35). Based on these proxy ratings, about 60, 73, and 52 percent of IFC investments are assessed as successful. The lower E&S ratings for substitutability indicate that close to half of IFC's investments are not meeting the required performance standards to reduce the social and environmental impacts.

Figure B.35 Effectiveness of International Finance Corporation Investments Using Proxy Indicators

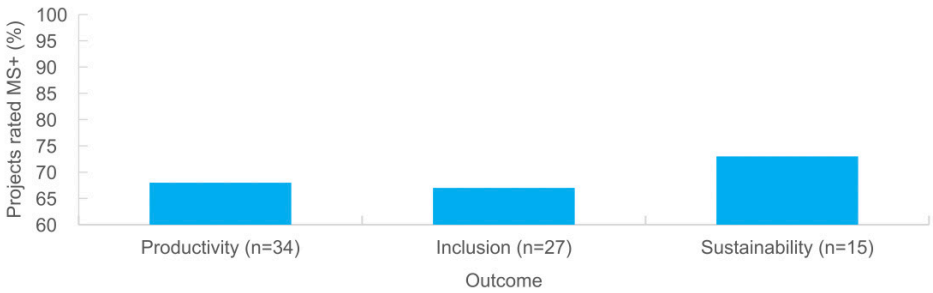


Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: MS+ = mostly successful or better.

Development effectiveness for IFC AS. For IFC AS projects, the overall development effectiveness ratings for projects that pursue the different outcomes are used to assess their effectiveness. The overall effectiveness for productivity, inclusion, and sustainability is about 68, 67, and 73 percent, respectively (figure B.36).

Figure B.36 International Finance Corporation Advisory Services Development Effectiveness by Outcomes



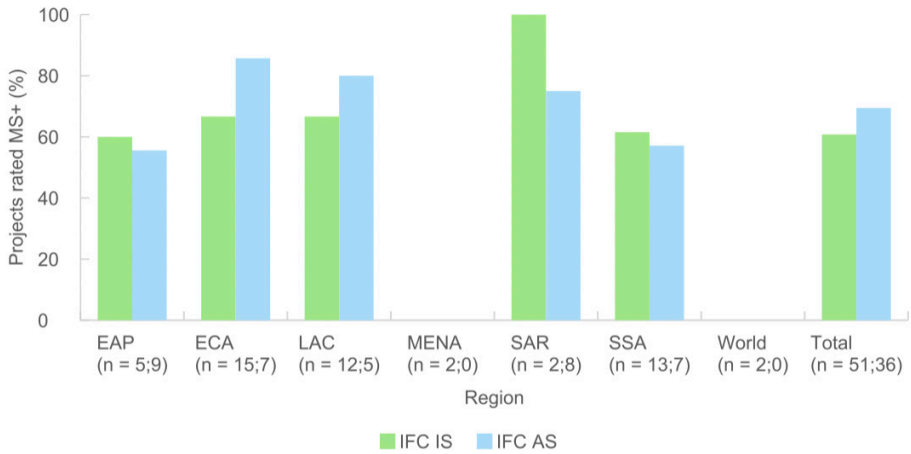
Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: MS+ = mostly successful or better.

IEG outcome ratings by Region. We could not assess the regional differences in performance ratings for the different outcomes separately because of the small number of evaluated projects. However, using the overall development effectiveness, the results for IFC IS and IFC AS projects show that IFC AS projects outperform investments in East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean, whereas IFC IS projects

have better ratings in South Asia and Sub-Saharan Africa (see figure B.37). Although the performance ratings are generally lower in the Sub-Saharan Africa and East Asia and Pacific Regions, the overall performance across Regions shows a substantial level of effectiveness for IFC IS and IFC AS projects.

Figure B.37 International Finance Corporation Investment Services and Advisory Services Outcome Ratings by World Region

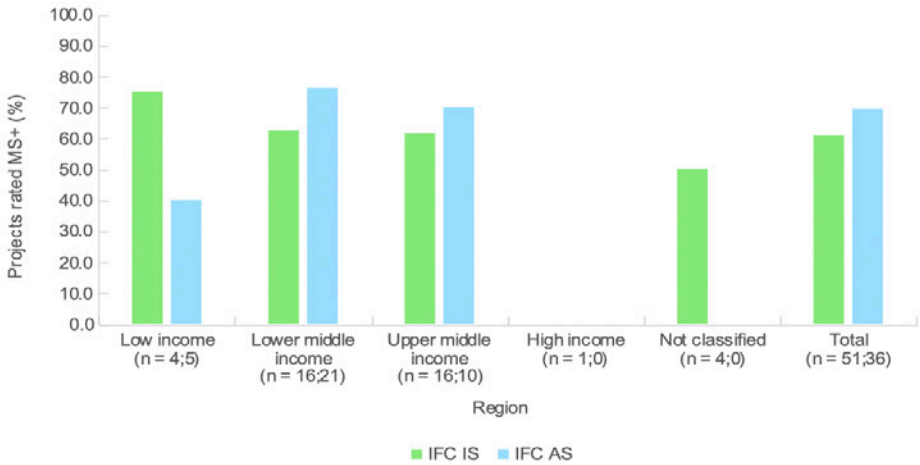


Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: Numbers in parentheses represent n values for IFC IS projects (right value) and IFC AS projects (left value). EAP = East Asia and Pacific; ECA = Europe and Central Asia; IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; MS+ = mostly successful or better; SAR = South Asia; SSA = Sub-Saharan Africa.

IEG outcome ratings by country income groups. Similar to the regional distribution, we could not assess the performance ratings separately for each of the three outcomes by country income groups or the stages of agrifood system development. However, using the overall development effectiveness ratings, IFC AS projects in LICs seem to be less effective than projects in other income categories, whereas IFC AS projects in middle-income countries overall seem to be performing better (figure B.38).

Figure B.38 International Finance Corporation Investment Services and Advisory Services Outcome Ratings by Income Group of Countries

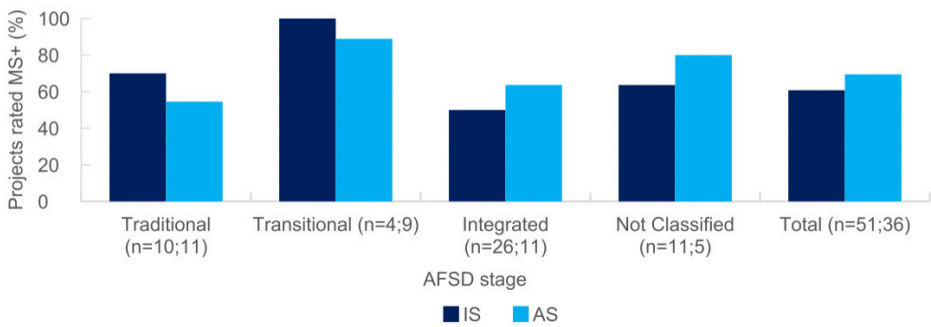


Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: Numbers in parentheses represent n values for IFC IS projects (right value) and IFC AS projects (left value). IFC AS = International Finance Corporation advisory services; IFC IS = International Finance Corporation investment services; MS+ = mostly successful or better.

IEG outcome ratings by agrifood system development stages. Although only a few projects are classified in the transitional stage, IFC IS and IFC AS projects in the transitional stage have better ratings than the traditional and integrated stages. The IFC IS in countries at the integrated stage also seem to be performing less well than investments at other stages. IFC AS have a lower score in countries at the traditional stage than at the other stages (figure B.39).

Figure B.39 International Finance Corporation Investment Services and Advisory Services Outcome Ratings by Agrifood System Development Stages

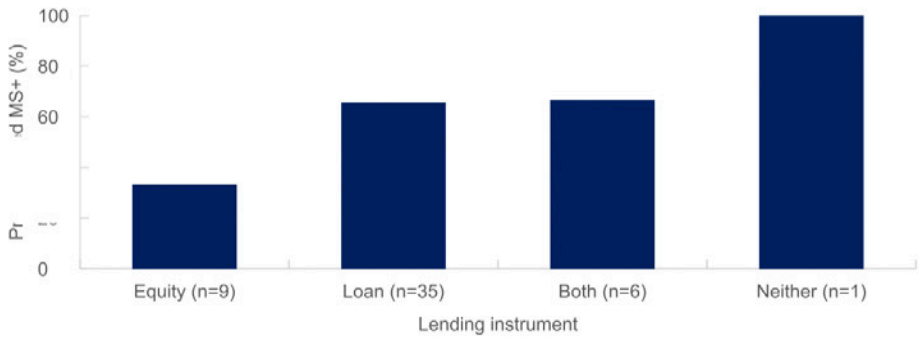


Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: Numbers in parentheses represent *n* values for IFC IS projects (right value) and IFC AS projects (left value). AFSD = agrifood system development; AS = advisory services; IS = investment services; MS+ = mostly successful or better.

IEG outcome ratings by lending instrument. Although loan projects and projects that combine equity and loans have similar ratings, equity projects have a lower success rate, with only three out of nine equity projects deemed successful in their development rating (figure B.40). The equity projects also have lower rates of success in meeting IFC E&S Performance Standards.

Figure B.40 International Finance Corporation Investment Services Outcome Ratings by Lending Instrument



Source: IFC management information system database; IFC Advisory Services Operations portal.

Note: MS+ = mostly successful or better.

Multilateral Investment Guarantee Agency

Of the 21 MIGA guarantees, there were only four IEG-evaluated projects, two of which had ratings above the MS threshold line. Since the evaluated portfolio is limited, no conclusive evidence can be generated from this on the overall performance and effectiveness of MIGA's agribusiness-related portfolio.

Appendix C. Summary of Case Studies

Introduction

This analysis followed a case-based analysis approach. A case-based analysis approach is a focused examination of several specific and clearly defined cases to better understand effectiveness in achieving outcomes and identify the drivers for success. More specifically, the analysis explored how internal factors within the influence of the project, together with external and contextual factors that go beyond the project design, contribute to project effectiveness.

This case-based analysis is structured in relation to four focus areas. Focus Areas (FAs) were defined based on typology of World Bank Group projects that implement similar types of interventions to achieve related objectives. Projects within a given FA are therefore typical of a type of support the Bank Group is providing to client countries for agrifood systems development. Based on preliminary analysis of the portfolio, four FAs were identified for projects with typical common features according to project attributes (appendix A):

- **Focus area 1:** technology-led, supply-side investment
- **Focus area 2:** market- and technology-led investments, mainly for food staples
- **Focus area 3:** market- and technology-led investments, high-value sectors
- **Focus area 4:** midstream private sector investments for processing and value addition

These FAs allow exploring variability in effectiveness and the associated success factors considering the underlying diversity and complexity of the Bank Group portfolio. Within each FA, case study projects were selected purposively from the classified Bank Group portfolio considering the stage

of agrifood system development, the availability of evaluative evidence, and representation of World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) activities. A total of 17 typical cases were selected from these four FAs for an in-depth desk study. Since FAs bring together projects that share similar attributes, the case-based analysis allows for some level of generalization of findings to projects in the portfolio that share similar characteristics and expected outcomes. The case study collected detailed information on the projects' main attributes to provide a basis for understanding the main interventions and the main beneficiaries, and documented the potential factors and achievement of outcomes. Although the overall portfolio is complex and heterogeneous, the data on attributes and results allowed analysis of outcomes at three levels (farm, cooperative, and firm levels).

The analysis identified factors that contributed to (or constrained) project effectiveness. Although exploring all drivers of success, the analysis focused on agrifood-specific factors, meaning those that are specific to interventions in the agrifood sectors as opposed to factors that apply to any Bank Group project. For each FA, the effectiveness of the selected cases and the associated success factors were identified. The differences in effectiveness across the FAs show the role of the project attributes and the main interventions in shaping the outcomes.

The cross-case analysis further assessed the common factors associated with effectiveness across FAs. The cross-case analysis helped identify the success factors that are specific to a given FA and those that are more cross-cutting in shaping effectiveness. The factor related to project design and implementation (including M&E quality) were cross-cutting factors. However, the project attributes and intervention mix were key sector-specific factors of success. A synthesis of the key findings follows.

Effectiveness by Focus Area

Effectiveness across all typical cases in this analysis is summarized in annex CA and described in the following sections.

Focus Area 1: Technology-Led, Supply-Side Investments at the Farm

Main Interventions

The core instrument in this FA is the adoption of improved technology and agricultural practices to drive agricultural productivity of smallholder farmers (SHFs; see table C.1). To optimize technology adoption for sustainable agricultural intensification, projects in this focus area also engaged in extensive capacity development and institutional strengthening of individual farmers and farmer groups.

Table C.1. Main Interventions of Focus Area 1

Case	Level	Technology-Led Productivity	Market Links	Market Inclusion	Social Inclusion	Resource Management
Land Husband, Water Harvest, and Hill Irrigation, Rwanda	Farm	√	a	a		√
	Cooperative	√	a	a		√
Irrigation, Rural Livelihoods, and Agricultural Development, Malawi	Farm	√			√	√
	Cooperative	√			√	√
Integrated Agricultural Productivity Project, Bangladesh	Farm	√			√	√
	Cooperative	√			√	√

Source: Independent Evaluation Group.

Note: a. Land Husband, Water Harvest, and Hill Irrigation Rwanda initially focused on supply-side interventions but later introduced market-related activities. Since these activities were introduced late in the project cycle, the case study team agreed to keep it in focus area 1.

Effectiveness

Effectiveness in increasing productivity growth was mixed (see table C.2). Productivity increased at both the farm and cooperative levels in Bangladesh (Integrated Agricultural Productivity Project [IAPP]). Most targets related to technology generation, adaptation, and adoption were achieved or exceeded. On average, yields increased by 30 percent for IAPP farmers over the baseline and 49 percent over the control areas (World Bank 2016). As a result, a Development Impact Evaluation impact study showed an increase in farm and farmer groups productivity, indicating greater rice surplus, higher fish production, and milk productivity among IAPP farmers (World Bank 2020). However, there was no significant productivity change for Irrigation, Rural Livelihoods, and Agricultural Development in Malawi. A Project Performance Assessment Report study found no significant productivity increase over time, with negligible improvements in maize and rice yields measured over the past two decades (World Bank 2021). Similarly, insufficient evidence was available on the effects in Rwanda (Land Husband, Water Harvest, Hill Irrigation [LWH]). Although the treatment group has a significantly higher share of its harvests sold in markets, an endline Development Impact Evaluation study of LWH showed no statistically significant average net yield for beneficiary farmers, despite their higher use of inputs and technology adoption than the nonbeneficiaries (World Bank DIME 2018).

Table C.2. Effectiveness of Focus Area 1 Interventions on Outcomes

Case	Level	Productivity	Inclusion	Sustainability
Land Husband, Water Harvest, Hill Irrigation, Rwanda	Farm	No evidence	+	+
	Cooperative	No evidence	+	+
Irrigation, Rural Livelihoods and Agricultural Development, Malawi	Farm	0	0	No evidence
	Cooperative	0	+	No evidence
Integrated Agricultural Productivity Project, Bangladesh	Farm	+	+	+
	Cooperative	+	+	+

Source: Independent Evaluation Group.

Note: Symbols used for effectiveness: + = increase; – = decrease; 0 = no change.

The objective to increase social inclusion of SHFs was largely achieved at the farm and cooperative levels. With the support of producer groups, inclusion of SHFs and cooperatives was in Bangladesh and Rwanda. In Malawi, the effect was not realized at the farm level as the Inputs for Assets plan was abandoned after project closure, and water user association members were not actively included in output markets (World Bank 2021).

The objective to enhance sustainable management of land and water resources was generally achieved. The exception was Malawi, where no project development objective indicator on sustainability was available in the Irrigation, Rural Livelihoods, and Agricultural Development (World Bank 2021).

Focus Area 2: Market- and Technology-Led Investments Mainly for Food Staples

Main Interventions

This FA includes projects that integrate demand-side market and value chain development activities with supply-side technology-led interventions primarily for food crops. The typical interventions in this focus area aim to strengthen the links between producer groups and buyers, integrate SHFs horizontally and vertically into input and output markets, and cultivate links among multiple agents in agricultural value chains (table C.3). Market inclusion activities were conceived as part of broader rural poverty reduction efforts by emphasizing social inclusion for poor people and vulnerable producers in rural areas. Environmental sustainability was not a main characteristic of typical interventions.

Table C.3. Main interventions of Focus Area 2

Case	Level	Technology-Led Productivity	Market Links	Financial Inclusion	Market Inclusion	Social Inclusion	Resource Management
Agric Productivity and Agribusiness, Kenya	Farm	√	√		√		
	Cooperative	√	√		√		
Agricultural Growth Project, Ethiopia	Farm	√	√	√	√	√	√
	Cooperative	√	√	√	√	√	√
Rural Alliances Project, Bolivia	Farm	√	√			√	√
	Cooperative	√	√		√	√	√
Sierra Rural Development Project, Peru	Farm	√	√			√	
	Cooperative	√	√		√	√	

Source: Independent Evaluation Group.

Effectiveness

The objective of increasing agricultural productivity was largely achieved both at the farm and cooperative levels in Bolivia and Ethiopia. Effectiveness of the four case studies is summarized in table C.4. On productivity, results were mixed in Kenya: agricultural productivity increased at the farm level because of increased access to inputs and services but decreased at the cooperative level. After project closing, only about 40 percent of the common interest groups and one-third of the farmer cooperatives in the Kenya project were active, and many were operating under capacity (World Bank 2018b). In Ethiopia, a rigorous Independent Evaluation Group impact evaluation (conducted as part of the case study) using a large Agricultural Growth Project (AGP) panel data set found some positive impacts on crop productivity and crop market participation, and positive causal effects of AGP in area planted with irrigation and marketed share of crop production, indicating success in enhancing commercialization of smallholder production (Teklewold, Shiferaw, and Vandercasteelen 2021). In Peru, the observed increase in the yields of SHFs was not accompanied by increased marketed surplus after meeting household needs and hence the net effect on productivity is ambiguous. The volume of the overall marketed surpluses was too small, the control of product quality was limited, and the distance from markets was too large to produce transformative changes and increase integration of smallholders into agricultural value chains (World Bank 2018c).

Table C.4. Effectiveness of Focus Area 2 Interventions on Outcomes

Case	Level	Productivity	Inclusion	Sustainability
Agric Productivity and Agribusiness, Kenya	Farm	+	+	n.a.
	Cooperative	-	-	n.a.
Agricultural Growth Project, Ethiopia	Farm	+	+	+
	Cooperative	+	+	+
Rural Alliances Project, Bolivia	Farm	+	+	+
	Cooperative	+	+	+

(continued)

Case	Level	Productivity	Inclusion	Sustainability
Sierra Rural Development Project, Peru	Farm	No evidence	+	
	Cooperative	No evidence	+	

Source: Independent Evaluation Group.

Note: Symbols used for effectiveness: + = increase; n.a. = not applicable.

The Bolivia, Ethiopia, and Peru projects enhanced the integration of SHFs into markets and value chains and in some cases contributed to rural poverty reduction. However, market inclusion was not widely achieved for cooperatives in Kenya. Except for high-value products such as dairy, many of the cooperatives faced weak financial and operational capacity to improve productivity and inclusion. After project closing, only about 40 percent of the common interest groups and one-third of the farmer cooperatives were active, and many were operating under capacity (World Bank 2018b).

For the cases that supported efforts to improve environmental sustainability, there is evidence of uptake of improved resource management practices. This was achieved in Ethiopia, where climate-smart practices and small-scale irrigation were supported, and in Bolivia, where the project supported improved environmental practices.

Focus Area 3: Market- and Technology-Led Investments for High-Value Sectors

Main Interventions

Cases in this FA addressed the core supply- and demand-side challenges inhibiting SHFs and small and medium enterprises (SMEs) from improving productivity and accessing markets. Typical projects centered on comprehensive market- and technology-led interventions in agricultural productivity, market inclusion, and sustainability, with a specific focus on high-value sectors that require standards in food quality, food safety, and environmental protection to create value addition (tables C.5 and C.6).

Table C.5. Main interventions of Focus Area 3

Case	Level	Technology-Led Productivity	Market-Led Productivity	Market Inclusion	Social Inclusion	Food Safety Standards	Environ. Standards
Agriculture Sector Support, Côte d'Ivoire	Farm	√					√
	Cooperative	√	√	√			
Institutional Development and Agriculture Strengthening Project, Montenegro	Farm	√	√			√	
	Firm	√	√			√	
National Dairy Support Project, India	Farm	√	√	√	√	√	
	Cooperative	√	√	√	√	√	
Livestock Competitiveness and Food Safety Project, Vietnam	Farm	√			√	√	√
	Cooperative	√			√	√	√

Source: Independent Evaluation Group.

Integrated interventions that aim to increase agricultural productivity combined improved technology with improved market access or value chain development. The market interventions included rehabilitation and maintenance of rural feeder roads to enhance physical access to markets (Agriculture Sector Support Project [ASSP] in Côte d'Ivoire), establishment of a village-based milk procurement system to support marketing activities for farmers, and institutional capacity building to assist existing dairy cooperative societies in their formalization into dairy producer companies (National Dairy Support Project [NDSP] in India). In Vietnam, the Livestock Competitiveness and Food Safety Project (LIFSAP) designed livestock planning zones to promote disease monitoring and to enhance market access through establishment of farmer cooperatives and partnerships with the private sector. A unique feature of this FA is the integration of food quality and safety and environmental sustainability standards as part of improving market inclusion. In some countries, this FA also embedded social inclusion through targeting poor people and smallholders and mainstreaming of equity principles in their interventions.

Effectiveness

The objective of raising productivity was largely achieved at different levels, although with weak farm-level evidence from ASSP in Côte d'Ivoire. The effectiveness across four case studies in increasing productivity and other outcomes is summarized in table C.6. In Montenegro (Institutional Development and Agriculture Strengthening Project [IDASP]), processing capacities have recorded growth in all sectors, namely processing of meat, milk, dairy products, fruit, wine, and brandy. The Project Performance Assessment Report evidence indicated that the majority of grant recipients reported higher production capacity of about 40 percent through improved and more efficient production conditions from investment in livestock and machinery, leading to higher yields and productivity (World Bank 2021). In India (NDSP), the case study showed that net milk yield increased on average by 8.2 percent because of better-nourished dairy animals and more days in milk from optimal feeding, higher conception rates from artificial insemination, and lower feeding costs. The proportion of milk sold to the organized sector has increased by 24 percent (from 51 to 75 percent), while the proportion of liquid milk sold out of the total milk production has increased by 6 percent

(from 64 to 70 percent). In addition, establishment of farmer-owned dairy producer companies and milk processing services increased farmgate prices and reduced milk wastage (World Bank 2020b, 2021b). In Vietnam (LIFSAP), the objective to increase the production efficiency of smallholder livestock producers was met by improving animal husbandry and health and veterinary services. Adoption of improved animal husbandry and processing practices increased productivity of on-farm production and nonfarm processing at upgraded slaughterhouses and meat markets (World Bank 2019b).

For ASSP in Côte d'Ivoire, access to improved technology at the farm level (measured in total area planted) increased, but there is no strong evidence on the resulting increase in yield or income of smallholders. The preliminary impact evaluation indicated that delivery of subsidized animal traction equipment to cotton producers increased their cotton area but led to a short-term reduction in productivity, although it had potential to increase labor productivity because of labor-saving impacts on women and children. In addition, the delivery of subsidized improved rubber seedlings increased rubber technology adoption but induced a short-term drop in the value of farm production. The overall effect on productivity, inclusion, and sustainability at the farm level remains ambiguous (World Bank 2019a).

Similar to productivity growth, the objective to increase inclusion of SHFs was largely achieved at the farm and cooperative levels. Market inclusion increased mainly for the cooperative level under ASSP. Although ASSP improved the market access of SHFs producing export crops through rural road rehabilitation and reduction in travel time and postharvest losses, there was limited evidence on overall commercialization or market inclusion. The support for establishment of certification and traceability programs to improve product value chains were not implemented as planned. On the cooperative level, the project helped establish performance contracts between producer organizations and service providers in the better-performing cotton sector, although the formalization and accreditation of professional associations in other sectors was limited or absent.

Regarding sustainability, most projects attained their intermediate result of supporting the adoption of food safety and environmental sustainability standards at the farm and cooperative levels. The contributions to sustain-

ability were demonstrated by establishment and compliance with food safety and environmental standards. There was no strong evidence for ASSP.

Table C.6. Effectiveness of Focus Area 3 Interventions on Outcomes

Case	Level	Productivity	Inclusion	Sustainability
Agriculture Sector Support, Côte d'Ivoire	Farm	No evidence	No evidence	No evidence
	Cooperative	n.a.	+	n.a.
Institutional Development and Agriculture Strengthening Project, Montenegro	Farm	+	0	+
	Firm	+	+	+
National Dairy Support Project, India	Farm	+	+	+
	Cooperative	+	+	+
Livestock Competitiveness and Food Safety Project, Vietnam	Farm	+	+	+
	Cooperative	+	+	+

Source: Independent Evaluation Group.

Note: Symbols used for effectiveness: + = increase; n.a. = not applicable.

Focus Area 4: Private Sector Investments for Processing and Value Addition

Main Interventions

This FA of six private sector investments and guarantee projects channeled funding for technology and capacity for processing and value addition along the agricultural value chain. Four case studies focused on the midstream segment, and two supported agricultural production and the supply chain between production and processing. By helping established lead firms increase their aggregating and processing capacities and optimize their supply chains, IFC and MIGA attempt to affect agrifood production, market inclusion, food safety, and environmental standards along the value chain of selected commodities, thereby supporting SHFs, cooperatives, and firms (table C.7). This integrated value chain approach is expected to increase production, raise market competitiveness, strengthen market integration, improve product quality, help implement climate-smart agriculture practices and compliance with environmental and social (E&S) standards, and generate revenues.

Table C.7. Main Interventions of Focus Area 4

Case	Level	Technology-Led Productivity	Market Links	Financial Inclusion	Market Inclusion	Social Inclusion	Food Safety Standards	Environ. Standards
Dairy processing, East Africa (IFC)	Farm				√		√	
	Cooperative	√			√	√	√	
Grain milling, East Africa (IFC)	Firm	√	√		√		√	√
Grain milling, Southern Africa (IFC)	Firm	√	√		√		√	√
Cocoa value chain, West Africa (IFC)	Cooperative	√		√	√		√	
Poultry operation, value chain, East Africa (MIGA)	Farm	√	√				√	√
Cattle operation, value chain, Southern Africa (MIGA)	Farm	√	√				√	√
	Firm	√						

Source: Independent Evaluation Group.

Note: IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency.

Typical interventions in this FA consisted of three interconnected elements. First, all six cases combined technology-led and market-led components. The technology-led components aimed at expanding productive assets to enhance the productivity of primary production or processing facilities of the firm; at times, efforts were also geared toward optimizing the firm's immediate supply chain. The market-led component aimed to enhance market access for the respective processing plant or aggregation infrastructure, including for export. Second, several cases also had components to enhance market access for SHFs and SMEs, often tailored to the local context. Third, interventions to enhance food quality, food safety, and environmental sustainability standards were embedded in all case studies.

Effectiveness

All IFC-supported projects achieved the objective of increasing productivity growth at the farm or cooperative level. The effectiveness across six case studies in increasing productivity and other outcomes is summarized in table C.8. The MIGA-supported projects were also effective in increasing productivity growth at the farm level. However, for the cattle operation value chain in Southern Africa, the productivity objective at the firm level was affected because of an external decision to cancel the funds allocated to slaughterhouse construction, which interrupted the intended value addition and limited the ranching operations to cattle breeding and fattening.

Table C.8. Effectiveness of Focus Area 4 interventions on outcomes

Case	Level	Productivity	Inclusion	Sustainability
Dairy processing, East Africa (IFC)	Farm	+	+	0
	Cooperative	+	+	0
Grain milling, East Africa (IFC)	Firm	+	0	+
Grain milling, Southern Africa (IFC)	Firm	+	+	0
Cocoa value chain, West Africa (IFC)	Cooperative	+	+	+
Poultry operation, value chain, East Africa (MIGA)	Farm	+	0	+

(continued)

Case	Level	Productivity	Inclusion	Sustainability
Cattle operation, value chain, Southern Africa (MIGA)	Farm	+	+	+
	Firm	n.a.	n.a.	+ n.a.

Source: Independent Evaluation Group.

Note: Symbols used for effectiveness: (+) = increase; (0) = no change; n.a. = not applicable.

IFC-supported projects were effective at improving market inclusion and generally effective at improving food safety, food quality, and environmental sustainability standards. Market inclusion was significantly enhanced at all intended levels in IFC-supported projects. IFC's support to the cocoa value chain in West Africa and a grain processing firm in East Africa was able to effectively raise food safety and environmental sustainability standards at the cooperative and firm levels. IFC was also instrumental in raising food safety, food quality, and environmental sustainability standards at the farm and firm levels at the dairy processing firm in East Africa and at the grain milling firm in Southern Africa, although significant gaps in E&S compliance remain. All compliance targets for E&S standards at the farm level were fully achieved for both MIGA-supported projects.

Cross-Cutting Factors Associated with Effectiveness

The cross-cutting analysis shows that the selected case studies had overall positive effects on outcomes. Most of the 17 case studies had a positive effect on productivity, inclusion, and sustainability (table C.9). Effectiveness in enhancing sustainability (65 percent of cases) was achieved in less cases than inclusion (88 percent of cases) and productivity (76 percent of cases).

World Bank interventions, which focused only on the production side, were less successful than interventions that combined production and market approaches. A summary of the level of effectiveness within each of the FAs and across cases is presented in table C.9. Projects that combined supply- and demand-side interventions (FA2 and FA3) were more successful at achieving productivity outcomes (75 percent versus 33 percent success) and inclusion outcomes (100 percent versus 67 percent). They were almost equally

successful at sustainability (see table C.9 and details in annex CA). The combination of production and market approaches is particularly important in low-income countries (LICs) and in countries at the early stages of agrifood system development, where SHFs and SMEs have limited access to markets.

Table C.9. Summary of Effects on Outcomes

Focus Areas	Cases (no.)	Effective Cases by Outcome (no.) [percent]		
		Productivity	Inclusion	Sustainability
World Bank production-focused interventions (supply side)	3	1 [33]	2 [67]	2 [67]
World Bank production and market access interventions (mainly food staples; supply and demand side)	4	3 [75]	4 [100]	2 [50]
World Bank production and market access interventions (high-value crops and livestock; supply and demand side)	4	3 [75]	4 [100]	3 [75]
IFC and MIGA private investments (production processing and value addition; supply and demand side)	6	6 [100]	5 [83]	4 [67]
Total	17	13 [76]	15 [88]	11 [65]

Source: Independent Evaluation Group case-based analysis.

Note: Summarized based on annex CA. In this table, outcome effects at the farm, firm, and cooperative levels are consolidated except for when the evidence at the farm or firm level is negative or ambiguous and supersedes the effect at the cooperative level.

Comparative analysis across the four FAs identified common factors that contributed to achievement of intended outcomes. The success factors can be divided into general success factors (that is, those that apply to all or most Bank Group interventions) and specific success factors (that is, success factors that are specific to agrifood system development projects). The general success factors related to overall project design and implementation are summarized in annex CB. External conditioning factors are summarized in annex CC. Although the general success factors are important,

the evaluation paid special interest to success factors that are specific to the agrifood sector interventions. They are grouped into primary factors and enabling factors. In addition, there are factors that are specific to enabling private sector involvement (mainly IFC and MIGA interventions).

Primary Factors

Two primary factors directly affected project effectiveness. This includes: (i) enhancing access to and adoption of improved agricultural production technologies and sustainable practices, and (ii) integrating improved production technologies and sustainable practices with action to improve market access, especially in LICs.

Improved Agricultural Production Technologies and Sustainable Practices

All the selected cases in FA1 highlight the vital role of improved agricultural technologies, including small-scale irrigation and water harvesting infrastructure, to address climatic risks that SHFs face in rainfed agrifood systems. When yield-enhancing improved seeds and other inputs are accessible to farmers, farm productivity and farming intensity can be further increased from complementary investments in irrigation to ensure the availability and reliability of water for farm production. The cases from Bangladesh, Malawi, and Rwanda made an effort to improve production technologies and to enhance access to reliable irrigation, for example, by developing, managing, or rehabilitating infrastructure or by conservation of water and natural sources at the catchment, watershed, and household levels.

A key step in improving productivity of SHFs and SMEs is enhancing the uptake of improved crop and livestock technologies and sustainable agriculture and water management practices. At an early stage of agrifood system development, a more holistic approach that bundles and promotes productivity-enhancing technologies with complementary natural resource management practices can empower SHFs to adopt improved methods and benefit from more sustainable and climate-resilient productivity growth. Technology-led and supply-side interventions were instrumental in promoting the adoption of sustainable land and water management practices among

SHFs and cooperatives in LHW in Rwanda and IAPP in Bangladesh. The bundling of irrigated land and water conservation technologies helped raise cropping intensity and farming system diversification, reduced variability in crop production and other irrigation-related risks, and reduced water losses. Investment in irrigation and water infrastructure was also associated with productivity and inclusion enhancement for farmers.

However, technology-led and supply-side interventions alone did not systematically lead to significant productivity increases. Supply-side focus on raising farm productivity mainly through integrated provision of modern inputs, irrigation infrastructure, and capacity building alone was necessary but usually not sufficient to improve productivity when market access is limited or not functioning well for SHFs. Little evidence of increases in productivity for farms or cooperatives was found in two cases in FA1, despite improved access to modern farm technology, namely Irrigation, Rural Livelihoods, and Agricultural Development in Malawi and LWH in Rwanda. These two cases, focused on supporting production technologies, had no significant impact on productivity (table C.2 and annex CA), and the Malawi case had no credible evidence of impact on inclusion and sustainability. SHFs in Malawi struggled to find sustainable market outlets for their produce (World Bank 2021). As a result, the productivity of both maize and rice improved in the early implementation phase, but it stagnated or became more volatile over time (World Bank 2021). The LWH in Rwanda that addressed supply-side constraints first and introduced marketing activities toward the closing of the project did not also have credible impact on productivity. An impact evaluation found that there was no statistically significant difference in total household income (excluding seasonal agricultural income) between project-supported and unsupported sites (World Bank 2018). In the case of IAPP in Bangladesh, where market access was not a major limiting factor for SHFs, the generation, adaptation, and adoption of improved crop and livestock technologies and sustainable practices were prioritized and achieved in a holistic group-based approach, resulting in a considerable productivity increase for rice, milk, and fish farming. This shows that when market access is a challenge for SHFs, which is often the case in LICs and countries at traditional stages of agrifood system development, focusing only on supporting production could undermine effectiveness. This is supported by the structured literature review,

which showed that when market access is limited, integrating improved production technology with efforts to improve market access helps to improve economic returns (Ashraf et al. 2009; Barrett et al. 2021; Deutschmann et al. 2021), which contribute to increasing productivity, inclusion, and sustainability.

Integration of Production Technologies and Sustainable Practices with Market Access

Complementary investments in production technology and market access contributed to success in achieving results. Enhancing access to organized markets for commercialization and value addition along the value chain while simultaneously introducing productivity-enhancing technology was associated with positive outcomes on productivity at the smallholder farm, cooperative, and processing firm levels in multiple cases in FA2, FA3, and FA4. All eight World Bank case studies that integrated technology and market access approaches had a positive impact on inclusion; six (75 percent) had a positive impact on productivity, and 5 (63 percent) had a positive impact on sustainability (table C.9). Across cases, complementary supply and demand interventions that improved access to inputs, advisory services, technologies, and markets increased productivity and inclusion more than supply-only interventions. IFC and MIGA projects integrating supply and demand interventions also had high effectiveness across all dimensions: all six projects had a positive impact on productivity—5 in 6 (83 percent) on inclusion and 4 in 6 (67 percent) on sustainability. IFC usually enables market access for SMEs and smallholders through lead firms that buy products from small providers.

The World Bank Ethiopia and IFC East Africa projects provide evidence of these results. The World Bank's Ethiopia Agricultural Growth Project supported farmer access to crop and livestock technologies and climate-smart practices (including small-scale irrigation) and access to markets. An Independent Evaluation Group impact evaluation using a unique multiperiod panel data set from a large survey of project beneficiaries and nonbeneficiaries (in three rounds) found that the project had a positive, statistically significant effect on improved irrigation and drainage services (on more than 10,000 hectares of farmland) and on crop output supplied to the market.

More than 58,000 farmers (including more than 12,000 women and 6,000 youth) benefited from improved irrigation. Climate-smart land practices, adopted on 217,000 hectares, led to increased vegetation. Similarly, through its investment and advisory services to a milk powder processing company in East Africa, IFC supported the organization of a dairy supply chain. It helped develop off-take agreements and establish aggregation centers offering fair, transparent, and timely payment to dairy farmers. IFC support led to the integration of about 10,000 farmers into the supply chain, the production of 320,000 liters of milk per day (better than the 240,000 target), and improved inclusion and mobility of small farmers.

Ensuring access to organized markets and supporting the uptake of sustainability standards is necessary to improve access and sustain increases in smallholder productivity in high-value sectors. The organized sector is driving growth in the emerging market for value-added products. Increasing the participation of small producers in these formalized value chains is an effective approach to enhancing their share of the growing market value. Unless a producer sees increased direct compensation from larger sales volume and higher quality products, there is little incentive to invest in productivity-enhancing technologies and adhere to standards in food quality, food safety, and environmental sustainability. This integration was particularly strong for IDASP in Montenegro that seeks to upgrade producers' and agro-processing firms' sustainable agricultural practices and food safety standards as part of its accession process to the European Union (EU). The intervention was not limited to promoting good agricultural practices and sharing knowledge about EU quality and food safety standards and requirements among farmers. It is complemented by strengthening local institutional capacity in support services. With IDASP support to fulfill EU food safety and environmental standards, Montenegro saw higher growth in processing capacities in all agrifood subsectors (such as dairy, meat, fruits, and wine). The other cases also provide examples on how sustainability standards offered opportunities to access larger domestic and export markets and reap price premiums for high-quality and traceable products that meet conditions of hygiene, biosecurity, and waste management (for example, NDSP in India, ASSP in Côte d'Ivoire, LIFSAP in Vietnam).

Complementary investments in service delivery and the nonfarm segment of the value chain helped reach high-value markets in an organized manner, transforming semisubsistence SHFs toward commercialization. Key complementary investments identified across successful cases included infrastructure for utilities and logistics (such as electricity, rural roads, and transport vehicles), market access (such as storage, collection, processing, and marketing), and public monitoring of food safety and sustainability standards. Investments in rural roads, marketing, storage, and collection were important for productivity and inclusion enhancement at the farm and cooperative levels in AGP (Ethiopia) and the Rural Alliances Project (RAP; Bolivia). Complementary investment in processing capacity was associated with an increase in inclusion for productive alliances in RAP (Bolivia) and the Sierra Rural Development Project (Peru). In Vietnam, LIFSAP supported the promotion of good animal husbandry practices with complementary on-farm investments through matching grants among SHFs and cooperatives. The project also arranged complementary training and financing to upgrade meat handling in slaughterhouses and meat markets to comply with food quality and food safety standards. The meat handling improvements were augmented by improved meat inspection services in the nonfarm segments of the livestock value chain. NDSP in India had a similar experience, with complementary investments in rural milk procurement and processing (for example, bulk milk chilling, automated milk collection, and routine testing equipment). In IDASP in Montenegro, complementary investment in local value chain infrastructure included matching grants to support storage and agrifood processing facilities, and EU-compliant upgrades in food safety for food processors. IDASP in Montenegro showed that project support for compliance with market standards can help beneficiaries meet the requirements for market access and participation.

Underinvestment in public extension systems and low capacity of local service providers reduce effectiveness of the integrated approach. This was particularly compelling in Kenya, where agricultural innovation and extension systems were almost entirely dependent on the public sector, and the extension system was dysfunctional. In an effort to revitalize agriculture, the Kenya Agric Productivity and Agribusiness Project aimed to diversify the delivery and improve the accessibility and quality of agricultural ad-

visory and extension services. However, after the devolution, the national and local government priority to reinvest in public extension systems faded away, and the engagement of private service providers in the agricultural extension did not continue after project closing. In addition, the contracted local service providers for delivering extension and business services were operating at low capacity and lacked interest in serving poor producers in less-favored areas (for example, those that have poor market access or are prone to drought). As a result, many of the emergent private service providers that seemed to function when project financing was available to pay for the contracted services gradually withdrew after project closing, leaving an important vacuum as the public extension system also declined.

Enabling Factors

Enabling factors magnify the effectiveness of primary factors. The enabling factors that can augment the benefits of primary success factors are (i) support to producer groups, (ii) behavioral changes to facilitate adoption of sustainable practices and develop business skills of the actors of agrifood systems, and (iii) support tailored to the needs of SMEs and SHFs. Other success factors specific to IFC activities are carefully selecting sponsors, conducting stress testing for investments in agribusiness, and balancing trade-offs between development effectiveness and profitability.

Support to Producer Groups

Producer organizations can help the actors of agrifood systems, especially smallholders and small firms, adopt new technologies and practices and access markets, in turn contributing to increased inclusion, productivity, and sustainability. Most projects that aimed to increase inclusion supported producer organizations to facilitate access to inputs, technologies, services, and markets. Producer organizations come in several forms, such as common interest groups and cooperatives in Ethiopia and Kenya, farmer groups in productive alliances in Bolivia and Peru, dairy and livestock cooperatives in India and Vietnam, and water user associations in Bangladesh and Rwanda. Fifteen of the 17 case studies (88 percent) showed that support for farms and SMEs provided by producer organizations improved inclusion by facilitating

farmer access to advisory services, inputs, irrigation and farm technologies, or enhanced links of farmers and SMEs with buyers. For example, in Vietnam, the LIFSAP project helped livestock producers build links with slaughterhouses and markets. The producer groups and cooperatives facilitated sharing of knowledge and improved collective bargaining (that is, purchasing power), increasing production efficiency through joint purchases from input providers that led to 3–5 percent cost savings in animal feed expenses. The project also facilitated partnerships between producer cooperatives and the private sector. These alliances ensured the availability of inputs, access to markets, and competitive prices.

Group-based approaches also strengthen farmer organizations and mobilize new group formation, facilitating the integration of small-scale producers into value chains. For example, dairy cooperative societies supported by the NDSP project in India helped integrate smallholder milk producers into organized markets based on a stable, transparent, merit-based approach. The project organized more than 853,000 milk producers into dairy cooperative societies across 40,000 villages, including in more than 14,000 new villages. Six new dairy producer companies were established under NDSP and supported more than 834,400 small-scale dairy producers. Dairy cooperative societies and dairy producer companies facilitated and expanded horizontal and vertical coordination of the dairy value chain (World Bank 2020b, 2021b). Similarly, the success of IAPP in Bangladesh was based on the strong cohesion and collective action of farmer groups and water user associations anchored and supported by a community facilitator. IAPP engaged with local communities and farmer groups (including crop, livestock, and fishery groups; seed growers' associations; and water user groups) to ensure their inclusion and participation in the planning, implementation, and subsequent management of the investments. The establishment of 7,246 livelihood field schools by IAPP in Bangladesh introduced improved production packages and provided training to more than 180,000 crop, livestock, and fish farmers. The project also undertook the initiative of registering more than 80 percent of IAPP-supported livelihood field school groups with the Department of Cooperatives to enhance their sustainability (World Bank 2016, 2020).

Engagement of the private sector, including producer organizations, contributed to market-led farm and agribusiness development. Several case studies also show that private sector involvement through group-based approaches was particularly relevant for the success in raising productivity by enhancing service delivery to farmers and cooperatives and introducing new service providers. The group-based approach further empowered smallholder producers, accelerated adoption, and improved economies of scale with enhanced competitiveness and access to organized markets and processing facilities, including product diversification and value addition. With greater bargaining power and market influence, organized producer groups were able to reinforce existing contractual arrangements and arrange new off-take contracts. This was particularly the case for the success of NDSP in India in increasing productivity. NDSP further enhanced bargaining power by establishing farmer-owned dairy producer companies, which raised competitiveness of the smallholder dairy sector by improving access to organized markets, processing, and product diversification to supply high-value urban markets.

Strengthening producer groups can help create and expand market links. SHFs, common interest group farmers, and productive alliances supported by AGP in Ethiopia and RAP in Bolivia were able to raise agrifood crop productivity and market participation by creating and expanding market links with reliable buyers. The small-scale dairy and meat sectors in India and Vietnam benefited from higher yield and product quality after the adoption of improved feeding and animal husbandry, sustainable processing practices, and empowerment of organized producer groups supported by AGP and LIFSAP.

By contrast, failing to support producer groups can interfere with success. The common interest groups in the Agric Productivity and Agribusiness Project in Kenya were not actively involved in the decision to transform the groups and establish more formalized cooperatives. Except for high-value products such as dairy and fresh produce, many of the cooperatives hastily established before project closing faced weak financial capacity to pay for contracted private service providers and could not increase farm productivity and incomes.

Behavioral Changes to Facilitate the Adoption of Sustainable Practices and Develop Business Skills among the Actors of Agrifood Systems

Cultivating behavior changes among farmers and agrifood SMEs enhanced the adoption of improved and more sustainable business models and the development of managerial skills. Key success factors included incentivizing behavior change among producers to facilitate uptake of better practices and sustainability standards and developing managerial skills among farmers and SMEs

Concerted attention to incentivizing behavior change among producers can lead to more sustainable business models and practices. Three of the four projects supporting World Bank high-value crop-livestock interventions successfully facilitated the uptake of improved food safety and sustainability standards. For example, the LIFSAP project in Vietnam required a shift in mind-set on the part of farmers and government agencies, reinforced by robust institutional strengthening and capacity building. Before the project, livestock production was scattered, and farmers sold poultry and pigs in wet markets without access to hygienic facilities meeting food safety and environmental standards. The project used multiple culturally relevant levers to influence farmers to adopt new livestock practices. The levers included peer-to-peer learning, peer pressure to strengthen compliance with practices and standards, and branding (for purposes of social recognition). The support to organize producers into associations made it feasible to pursue certification and accreditation, improving food safety and environmental practices. At project closing, 70 medium-to-large slaughterhouses and more than 300 small ones complied with national environmental standards (World Bank 2019a, 2019b).

Support for developing business plans and skills among farmers, cooperatives, and SMEs can also contribute to success. Providing IFC advisory services to develop the business skills of agrifood actors in the value chain helped them prepare for IFC investment. For example, IFC successfully supported cooperatives of a West African cocoa supply chain through training to enhance their capacity to operate in a commercial environment, which allowed them to use the IFC risk-sharing facility.

The productive alliance model has also been effective in strengthening business development skills of smallholders and small firms. Productive alliance models in Latin America supported producer groups with developing business plans through productive investments, and technical assistance for business development. In the RAP in Bolivia, this support resulted in a 73 percent average increase in the income per producer of the alliances, with increases ranging from 51 percent for cocoa to 136 percent for beef (World Bank 2018a).

Gradual introduction of new practices to value chain actors through demonstrated benefits contributed to behavioral change and reinforced the adoption of improved technologies and food safety and environmental standards. For example, value chain actors in India, Montenegro, and Vietnam were motivated to reinvest in productivity-enhancing and standards-compliant technologies because they see increased direct compensation from higher sale volume of good quality products. To become successful, these delivery models relied on gradual introduction of new practices to value chain actors, including institutional capacity building to enhance standard setting and inspection capacity, including value chain governance.

IFC support for the private sector cattle operation value chain in Southern Africa provided complementary technical and capacity building support to enhance business operations. It provided farm- and firm-level support in the form of technical investments for enhancing the productivity and capacity of the cattle and crop farms and ranches. This was paired with complementary capacity support through inclusive training on animal husbandry and health, cattle management, use and maintenance of farm equipment, income optimization, health care and nutrition, and genetic upgrading.

Tailoring Interventions to the Needs of Farmers and Agrifood Small and Medium Enterprises

A bottom-up, demand-driven delivery model contributed to success. Technical assistance works best when it is based on a flexible menu that accommodates the varied capacity-building needs of different beneficiary groups and actively engages local and regional governments and the private sector in the process of providing rural infrastructure, agrifinance, and services. This

tailored approach is essential to initiate adoption and garner ownership and commitment of stakeholders by giving them opportunities to select interventions that are relevant to their needs. Actively involving target beneficiaries in the design and providing them with supervision and monitoring responsibilities for the development and management of irrigation and water harvesting infrastructure and farm technology increased their ownership and confidence in the adoption. The effectiveness of attaining the desired results in successful cases was also based on training and capacity building for individual farmers, producer groups, processing firms, and public institutions. The key driver for success was the flexibility of such an integrated delivery model for a gradual or sequential introduction of interventions after the demand-driven selection of advantageous components by beneficiaries.

The success of IAPP in Bangladesh (FA1) relied heavily on tailored approaches that involved the local community through a variety of farmer groups and water user associations to empower them in technology adoption and sustainable land and water management. IAPP engaged with local communities and farmer groups (crop, livestock, and fishery groups; seed growers' associations; and water user groups) to ensure their inclusion and participation in the planning, implementation, and subsequent management of the investments. The IAPP's gradual introduction of new technologies and practices to expand their dissemination in phases was realistic to ensure adequate adoption.

AGP (Ethiopia), RAP (Bolivia), and the Sierra Rural Development Project (Peru; FA2) offered a menu of tailored technical assistance options to farmers and producer groups to enhance their agribusiness skills. These menus included, for example, accounting, procurement, input purchase, negotiation with buyers, storage, processing, and packaging. Gradual introduction of new technologies and institutional innovations was another key success factor for all three outcomes in RAP.

For the IFC dairy processing firm in East Africa, the combination of advisory services and investment played an important role in enhancing the development footprint of the project. A complementary investment in extension services to farmers in its supply chain consolidated the initial investment in food safety and led to success in reaching the productivity, inclusion, and

sustainability outcomes. Milk farmers received incentives to raise productivity and improve product quality in response to dairy firm's strict milk quality control and consistent off-take arrangement, which increased pricing transparency and purchase reliability and helped smooth income through seasonal fluctuations.

The IFC cocoa value chain project in West Africa combined support for a truck leasing arrangement through the risk-sharing facility with capacity building in business management skills. By leasing new trucks, more cooperatives were able to supply the company at a lower cost, making use of the supported infrastructure. At the same time, these cooperatives were able to acquire a credit history, enabling them to access local finance, and obtain crucial managerial training to become more reliable suppliers.

Specific Factors for Enabling Private Sector Investments

Several factors are specific to interventions enabling private sector investments. They are (i) careful sponsor selection, (ii) stress testing during due diligence, and (iii) balancing trade-offs between development effectiveness and profitability.

Careful Sponsor Selection

Targeting the right firms is important in IFC projects. In the dairy processing firm in East Africa (FA4), for example, the absence of a preexisting E&S monitoring and reporting system in the firm was a constraint on fully complying with E&S requirements and limited the impact on environmental sustainability within the project period. Although the firm demonstrated strong engagement with quality and food safety standards, putting adequate E&S systems and practices in place requires continuous commitment and resources over a longer period.

Stress Testing during Due Diligence

Positive government incentives played a common role the IFC and MIGA case studies, but such incentives may not last and expose firms to future risks. Several of IFC's investments operate in protected value chains (that is, under conditions that provide tax exceptions or benefit from reduced

competition because of trade restrictions). The dairy processing value chain in East Africa profited from the East African Community Free Trade Area that exempts import duties on its exports in target markets, and a 10-year exemption from corporate income taxes in the country on a condition that 80 percent of its production is exported. Likewise, the grain milling investment in East Africa enjoyed trade protection measures for wheat flour milling sector that limited the firm's competition. Similarly, the grain milling investment in Southern Africa benefited from government incentives destinated to facilitate companies located in a special economic zone. These included corporate tax exemption for the first three years, provision of permits to the employees to bring their families to the country, and provision of basic infrastructure, such as roads, electricity, and water. The cattle operation value chain investment in Southern Africa also received various incentives from the government, namely, import duties reduction, farm improvement allowance, cash allowance for farm occupied by farm workers, value-added tax deferment on imports of some equipment, zero import duties on irrigation equipment, zero rating export agricultural products, and full allowance for farm works that aim to enhance natural resource conservation.

Due diligence with conservative projections and stress testing can identify projects' vulnerabilities and enhance companies' business and economic sustainability. High-quality due diligence and deal preparation further allowed IFC to support experienced and reliable agrifood market players in the region. High-quality due diligence and deal preparation, supported by analytical work to identify investment opportunities and challenges, are particularly important in cases where IFC investments operate in protected value chains. Although protected value chains act as incentives for investments, they can also threaten the business success when they are abolished. IFC's due diligence needs to anticipate that trade restrictions could be lifted during the life span of a project, leading to enhanced market competition with the potential to hurt the project's revenues. Likewise, in volatile macroeconomic periods, countries may not have the fiscal space to maintain tax exceptions and, as a result, abolish them, with negative effects on the firm's financial bottom line. IFC's stress testing should include such factors and uncertainties.

Balancing Trade-offs between Development Effectiveness and Profitability

IFC can balance trade-offs between development effectiveness and profitability to reach frontier markets by using its portfolio approach and blended finance. IFC 3.0 calls for active portfolio management across sectors, geographic areas, and instruments to optimize the balance among development impact, financial sustainability, and risk (IFC 2020a). An active portfolio management approach can help IFC offset the negative risk-adjusted return on capital from investments in frontier markets, like those from agribusiness investments in LICs, through above-average risk-adjusted return on capital rates from other, more profitable investment areas. Blended finance is a factor of success in reaching frontier markets, at times setting in motion high-risk projects with positive development impacts, including in International Development Association countries and in fragile and conflict-affected situations, as found in the Independent Evaluation Group's evaluation on creating markets (World Bank 2019a). Yet even with the use of blended finance, such projects may have a low or negative risk-adjusted return on capital, making a portfolio approach key to managing these trade-offs.

Annex CA. Overview of Effectiveness by Focus Area, Outcome, and Level of Analysis

Table CA.1 Overview of Effectiveness

Focus Area and Case	Inst.	Level	Productivity	Inclusion	Sustainability
Focus area 1: technology-led supply-side investment					
Land Husband, Water Harvest, Hill Irrigation, Rwanda	World Bank	Farm	NE	+	+
		Cooperative	NE	+	+
Irrigation, Rural Livelihoods, and Agricultural Development, Malawi	World Bank	Farm	0	0	NE
		Cooperative	0	+	NE
Integrated Agricultural Productivity Project, Bangladesh	World Bank	Farm	+	+	+
		Cooperative	+	+	+
Focus area 2: market- and technology-led investments mainly for food staples					
Agric Productivity and Agribusiness, Kenya	World Bank	Farm	+	+	n.a.
		Cooperative	–	–	n.a.
Agricultural Growth Project, Ethiopia	World Bank	Farm	+	+	+
		Cooperative	+	–	
Rural Alliances, Bolivia	World Bank	Farm	+	+	+
		Cooperative	+	+	+
Sierra Rural Development Project, Peru	World Bank	Farm	NE	+	
		Cooperative	NE	+	

(continued)

Focus Area and Case	Inst.	Level	Productivity	Inclusion	Sustainability
Focus area 3: market- and technology-led high-value sectors with sustainability standards					
Agriculture Sector Support Project, Côte d'Ivoire	World Bank	Farm	NE	NE	NE
		Cooperative		+	
Institutional Development and Agriculture Strengthening Project, Montenegro	World Bank	Farm	+	+	+
		Firm	+	+	+
National Dairy Support Project, India	World Bank	Farm	+	+	+
		Cooperative	+	+	+
Livestock Competitiveness and Food Safety Project, Vietnam	World Bank	Farm	+	+	+
		Cooperative	+	+	+
Focus area 4: midstream private sector investments for processing and value addition					
Dairy processing, East Africa	IFC	Farm	+	+	0
	IFC	Firm	+	+	0
Grain milling, East Africa	IFC	Firm	+	+	+
Grain milling, Southern Africa	IFC	Firm	+	+	0
Cocoa value chain, West Africa	IFC	Cooperative	+	+	+

(continued)

Focus Area and Case	Inst.	Level	Productivity	Inclusion	Sustainability
Poultry operation, value chain, East Africa	MIGA	Farm	+	0	+
Cattle operation, value chain, Southern Africa	MIGA	Farm	+	+	+
		Farm	n.a.	n.a.	n.a.

Source: Independent Evaluation Group.

Note: In reporting the outcomes, farm- and cooperative-level effects are consolidated as part of the farm-level outcomes. Symbols used for effectiveness: + = increase; – = decrease; 0 = no change; n.a. = not applicable; NE = no evidence. IFC = International Finance Corporation; Inst. = World Bank Group institution; MIGA = Multilateral Investment Guarantee Agency.

Annex CB. Non–Sector Specific Internal Success Factors

Table CB.1 Non–Sector-Specific Internal Success Factors

Internal Factor	Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4
Scope and targeting of AFS interventions	Clear scope focusing on specific geographical area or targeting of beneficiaries with adequate selection	Clear scope focusing on specific geographical area or targeting of beneficiaries with adequate selection	Careful identification and targeting of specific geographic areas, markets or value chains, and beneficiaries	Clear focus on specific markets or value chains in which the firm was a leading player, and selection process to identify high-quality sponsors
Previous experience and analytical work	Previous experience and analytical work to identify challenges, adaptation of interventions to local context and capacity of implementing agency, clear development pathways, and rigorous M&E	Previous experience, analytical work, value chain studies, context-sensitive interventions	Previous experience, analytical work, value chain studies, clear logic and results orientation, and adaptation of interventions to local context	Robust analytical work and focus on value chain development in developing markets as a form of social inclusion (Pearl Dairy), market integration (Bakhresa), or financial inclusion (Cargill)
Quality of deals and market expertise	n.a.	n.a.	n.a.	High-quality due diligence and deal preparation; all case studies dealt primarily with a respected and reliable market player in the region.

(continued)

Internal Factor	Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4
Implementation, coordination, and supervision	Strong collaboration and coordination across implementing agencies, regular supervision and timely course correction	Local presence with good local knowledge, regular field supervision and feedback, effective use of M&E tools	Local presence with good technical knowledge, timely supervision, and implementation support to encourage government ownership and willingness to take corrective action	Technical knowledge of local staff, regular supervision, monitoring and implementation support, intensive client engagement, and their willingness to take corrective action
Continuous stakeholder engagement	Bottom-up engagement of stakeholders and demand-driven selection of support	Consistent stakeholder engagement during project preparation and implementation	Engagement of stakeholders and demand-driven selection of project support during design and implementation	Continuous, proactive, and harmonized engagement between IFC and MIGA, clients, and collaborating partners

Source: Independent Evaluation Group.

Note: AFS = agrifood system; IFC = International Finance Corporation; M&E = monitoring and evaluation; MIGA = Multilateral Investment Guarantee Agency; n.a. = not applicable.

Annex CC. Non–Sector Specific External Enabling or Constraining Factors

Table CC.1 Non–Sector- Specific External Enabling or Constraining Factors

External Factor	Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4
Government and client commitment	(++) Government commitment expressed through strategic vision, conducive policy environment, and budget support for AFS development	(++) Same as focus area 1	(++) Same as focus area 1	(++) Client and government commitment, alignment with sectoral development plan
Political stability, policy predictability, and public governance	(++) RW and BD: stable political and institutional environment, predictable fiscal management, policy and staff consistency (--) MW: frequent change in political regime, political crises, corruption froze relationships with donors and aid flows	(--) Political instability, policy unpredictability, and poor public governance (except for BO) (--) Corruption in KE; conflict of strategies across sectors in PE (//) Effective devolution and decentralization in BO, ineffective in KE	(++) Political stability, policy predictability, and harmonized strategies across sectors (except for CI) (++) ME: Policy alignment with EU requirements enhanced consistency and less ad hoc decisions in national agricultural subsidy allocations.	(--) Dairy in East Africa: Diplomatic feud and unstable interregional politics led to closure of Uganda-Rwanda border (//) Grain milling in East Africa: Stable political environment and policy predictability, except cancellation of tax exemption and value-added tax introduction on wheat flour products

(continued)

External Factor	Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4
Force majeure	(--) Weather-related shocks added a stress factor to rainfed farmers. (--) MW: political crises (--) BD: acute and recurrent seasonal deprivation and famine-like conditions in the northern region	(--) KE and ET: political crisis and civil unrest (--) ET: Nationwide heavy, unseasonal rains and the worst drought in 50 years	n.a.	(--) Grain milling in Southern Africa: Flooding and unusual heavy rains (--) Dairy in East Africa: Extended wet season created an oversupply of milk (--) Global coronavirus outbreak
Government incentives, trade protection, and state control	n.a.	n.a.	(++) IN: tax incentives, input subsidies, minimum price support, provision of cold chain infrastructure and power for dairy farmers and cooperatives (--) CI: taxation on export crops and processing companies, state control of key export sectors, resistance from Coffee and Cocoa Council	(//) Most IFC's and MIGA's investment operate in "protected" value chains with tax exemptions or beneficial trade barriers are vulnerable to regime shift (--) Cocoa value chain in West Africa: State control of cocoa value chain monitors the market and regulates the farm gate price

(continued)

External Factor	Focus Area 1	Focus Area 2	Focus Area 3	Focus Area 4
Leveraging additional funding and capacity	(++) RW: Coordination with other donors crowded-in additional financing and enabled a large scale-up; coordination with another Bank Group project enabled access to land and physical market support. (++) BD: engagement with FAO and DIME for M&E design and implementation (++) MW: IFAD project provided groundwork on irrigation development, and MDTF coordinated donors' efforts.	n.a.	(++) ME: cofinancing and collaboration from the EU, increased investments in the agrifood sector and enhanced compliance with EU regulations from other EU funds (++) ID: partnership with the South Asia Food and Nutrition Security Initiative for milk fortification (++) VN: World Bank experience and partnership with the government of Vietnam and strategic alliances in the livestock sector, particularly from the avian influenza crisis response	(++) Poultry value chain in East Africa: MIGA as a reinsurer for OPIC (fund cofinancing) and the primary insurer of poultry value chain firm, while OPIC and MIGA provided debt financing and PRI (++)Poultry and beef value chains in Eastern and Southern Africa: Engagement with civil society, local community, NGOs and other DFIs

Source: Independent Evaluation Group.

Note: AFS = agrifood system; DFI = development finance institution; DIME = Development Impact Evaluation; EU = European Union; FAO = Food and Agriculture Organization; IFAD = International Fund for Agricultural Development; IFC = International Finance Corporation; M&E = monitoring and evaluation; MDTF - multidonor trust fund; MIGA = Multilateral Investment Guarantee Agency; n.a. = not applicable; NGO = nongovernmental organization; OPIC = Overseas Private Investment Corporation; PRI = political risk insurance. Country abbreviations: BD = Bangladesh; BO = Bolivia; CI = Côte d'Ivoire; ET = Ethiopia; ID = India; KE = Kenya; ME = Montenegro; MW = Malawi; MZ = Mozambique; PE = Peru; RW = Rwanda; TZ = Tanzania; UG = Uganda; VN = Vietnam; ZM = Zambia. Symbols used for enabling and constraint factors: (++) = enabling factors; (--) = constraint factors; (//) = mixed effects.

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