



Inclusive Financial Ecosystem for Food Systems Transformation

Solution Design Report

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Acronyms and abbreviations

ADB	Asian Development Bank
ADB Ghana	Agricultural Development Bank Ghana
AEZ	Agro-Ecological Zone
AFLP	Agriculture Financial Literacy Program
AGRA	Alliance for a Green Revolution in Africa
AGRICULTURA	Secretariat of Agriculture and Rural Development (Mexico)
AI	Artificial Intelligence
ALIDE	Asociación Latinoamericana de Instituciones Financieras para el Desarrollo, Latin American Association of Development Financing Institutions
AML	Anti-Money Laundering
APR	Asia-Pacific Region
APRACA	Asia-Pacific Rural and Agricultural Credit Association
ASCEND	Access to Sustainable Credit and Enterprise Development (Philippines)
ASFI	Autoridad de Supervisión del Sistema Financiero, Financial System Supervisory Authority (Bolivia)
AYII	Area Yield Index Insurance
BDP	Banco de Desarrollo Productivo, Development Bank for Productivity (Bolivia)
BIRD	Bankers Institute of Rural Development (India)
BNDES	Banco Nacional de Desenvolvimento Econômico e Social, National Bank for Economic and Social Development (Brazil)
BNF	Banco Nacional de Fomento, National Development Bank (Ecuador)
BSP	Bangko Sentral ng Pilipinas, Central Bank of the Philippines
CAF	Corporación Andina de Fomento, Development Bank of Latin America and the Caribbean
CAPEX	Capital Expenditure
CAR	Capital Adequacy Ratio
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CRF	Covariant Risk Fund
DINAR	Dirección Nacional de Registros Públicos, National Authority of Public Registries (Ecuador)
EIB	European Investment Bank
ESG	Environmental, Social, Governance
EU	European Union
EVFTA	Eu-Vietnam Free Trade Agreement
FAG	Fondo Agropecuario de Garantías, Agricultural Fund of Guarantees (Colombia)
FAO	Food and Agriculture Organization

FEFA	Fideicomiso Especial de Financiamiento Agropecuario, Special Agricultural Financing Trust (Mexico)
FEGA	Fideicomiso de Garantía y Fomento, Trust for Guarantee and Development (Mexico)
FI	Financial Institution
FIGI	Financial Inclusion Global Initiative
FINAGRO	Fondo para el Financiamiento del Sector Agropecuario, Fund for the Financing of the Agricultural Sector (Colombia)
FIRA	Fideicomisos Instituidos en Relación con la Agricultura, Trust Funds for Agriculture (Mexico)
FMO	Financieringsmaatschappij voor Maatschappelijk Ondernemen, Entrepreneurial Development Bank (the Netherlands)
IDB	Inter-American Development Bank
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFE	Inclusive Financial Ecosystem
IFE-FST	Inclusive Financial Ecosystem for Food Systems Transformation
IFI	Intermediary Financial Institution
IT	Information Technology
KCC	Kisan Credit Card (India)
KYC	Know Your Customer
LAC	Latin America and the Caribbean
LBCDF	Land Bank Countryside Development Foundation
LBP	Land Bank of the Philippines
LIMS	Land Information Management System
LURC	Land User Rights Certificate
MAG	Ministerio de Agricultura, Ministry of Agriculture (Ecuador)
MDB	Multilateral Development Bank
MFI	Microfinance Institution
MIGA	Multilateral Investment Guarantee Agency
MXN	Mexican Peso
NABARD	National Bank for Agriculture and Rural Development (India)
NDB	National Development Bank
NPL	Non-Performing Loan
NSFSI	National Subsistence Farmers Support Initiative (Pakistan)
PACS	Official
PCIC	Philippines Crop Insurance Protection
PDCA	Plan-Do-Check-Act (a.k.a. Deming circle)
PKSF	Palli Karma-Sahayak Foundation (Bangladesh)

PO	Producer Organisation
PSM	Propensity Score Matching
QR	Quick Response (Code)
RCT	Randomised Control Trial
RDD	Regression Discontinuity Design
RP	Rabo Partnerships
RSBSA	Registry System for Basic Sectors in Agriculture
SBP	State Bank of Pakistan
SHCP	Secretaría de Hacienda y Crédito Público, Secretary of Finance and Public Credit (Mexico)
SME	Small Medium Enterprise
SMS	Short Message Service
TA	Technical Assistance
UNDP	United Nations Development Program
US	United States
USD	United States Dollar
VBSP	Vietnam Bank for Social Policies
VCF	Value Chain Finance
VND	Vietnamese Đồng

Executive summary

The Inclusive Financial Ecosystem for Food Systems Transformation (IFE-FST) initiative, funded by IFAD and implemented by Rabo Partnerships, seeks to close the persistent financing gap for small-scale farmers in emerging markets. Building on insights from the inception phase, this second report – the solution design report – maps available products and tools for National Development Banks (NDBs) to support and serve small-scale farmers, and outlines the potential contribution of other ecosystem actors such as commercial banks, Multilateral Development Banks (MDBs), and public institutions.

Small-scale farmers remain constrained by structural barriers. These can be categorised into 1) Social- and institutional hurdles, 2) Infrastructure- and market access imperfections, 3) Environmental- and climate change, and 4) Knowledge- and technology gaps. Altogether, these challenges lead to limited access to finance for farmers.

With their development mandate, NDBs can play a unique role in solving these challenges for small-scale farmers, by allocating capital, distribution capabilities as well as knowledge to farmers. To determine which solution contributes most effectively to a farmers’ challenge at hand, the report suggests a playbook with six steps to move from challenges to solutions. The report elaborates on the steps as presented in the below figure.

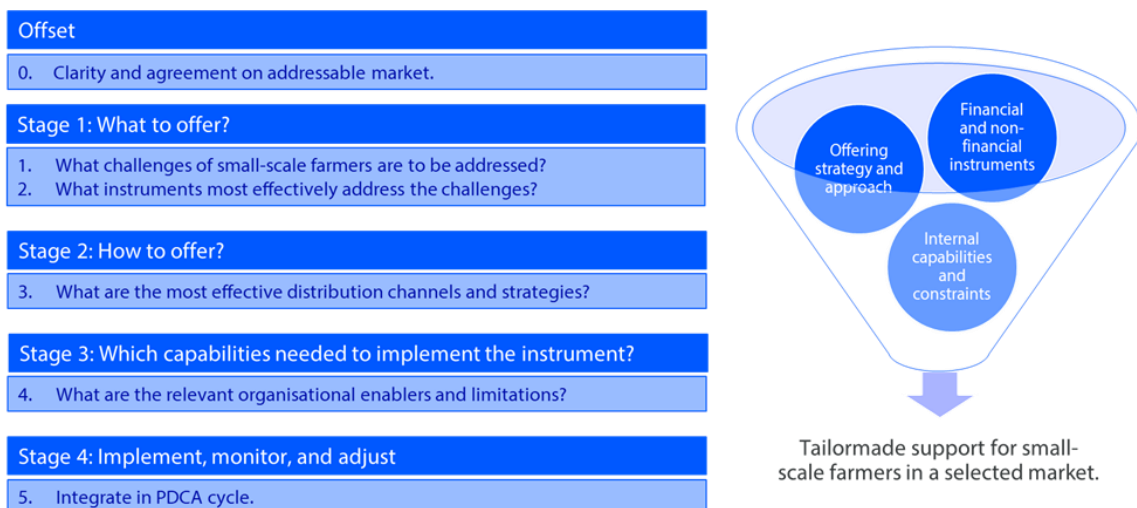


Figure 1: Six steps to move from challenges to solutions. Source: Rabo Partnerships, 2025.

The instruments that can be selected for offering to small-scale farmers are presented in the toolbox, including recommended distribution channels and strategies, as well as organisational enablers such as risk management and funding. The toolbox includes:

1. Financial instruments, including various types of concessional loans, credit guarantees for financial intermediaries, and insurance;
2. Non-financial instruments, including digital financial services and channels, and technical assistance.

The solutions toolkit further explores how these instruments can be effectively deployed to reach small-scale farmers. Rather than introducing new products, the focus is on leveraging existing solutions in innovative and impactful ways, drawing on lessons learned from successful initiatives around the world.

What becomes clear is that no single solution can address all the challenges faced by small-scale farmers. A combination of (a variety of) financial and non-financial interventions is essential and ideally, these should be offered in an integrated manner to maximize impact. Additionally, the transition from traditional to digital tools is a significant development. Whether through digital TA platforms, online loan applications, or end-to-end digital financial services, there are growing opportunities for NDBs to digitize parts of their operations. This shift not only enhances efficiency but also enables greater scale and outreach, allowing NDBs to better serve rural farming communities.

To make the playbook and described instruments applicable to the NDBs that are in scope for this program phase, the annex dedicates a chapter to each of the selected countries (Bolivia, Ecuador, Mexico, Pakistan, the Philippines, and Vietnam). Here, key farmer- and organisational challenges are addressed, followed by recommended instruments and implementation strategies.

In addition, the report also highlights opportunities for multilateral development institutions to strengthen and support NDBs in their endeavours to increase access to finance for small-scale farmers.

By equipping NDBs with practical tools and forward-looking strategies, this phase lays the foundation for the execution phase, where selected solutions will be piloted and refined in two selected countries. Ultimately, the initiative aims to catalyse inclusive, resilient, and sustainable food systems by unlocking finance for small-scale farmers.

1 Introduction

IFAD has developed the grant initiative titled "Inclusive Financial Ecosystem for Food Systems Transformation" (IFE-FST) to address a critical challenge in agricultural and rural development: the lack of adequate financing for small-scale farmers in developing regions. Access to finance remains a major barrier for smallholders, who require capital to address current challenges and increase resilience to adverse conditions and climate change. For securing sound future operations it is necessary to enhance productivity as well as quality, leapfrogged through a) the adaptation of sustainable practices, b) closing of knowledge and technology gaps, c) a more effective integration into agricultural value chains, and d) availability of reliable financial and operational data.

National Development Banks (NDBs), with their development-oriented mandates, are uniquely positioned to mobilize resources and engage public and private actors in creating a financial ecosystem that supports small-scale farmers. NDBs operate within a broader Inclusive Financial Ecosystem (IFE), which includes, among others, government bodies, private sector entities, farmer organizations and international organizations like, for example, IFAD, World Bank and Green Climate Fund. These actors contribute to creating an enabling environment for inclusive rural financing through resource and knowledge mobilization, policy alignment, innovation, and risk mitigation.

Rabo Partnerships has been entrusted with the implementation of IFAD's grant. Its primary objective is to enhance the capacity of NDBs to deliver tailored and effective financial services that address the specific needs of small-scale farmers. This will be achieved by systematizing best practices in rural finance, fostering strategic partnerships within the IFE, and piloting innovative and effective financial solutions in selected countries.

The program will be executed over a two-year period and is structured into four sequential phases: 1) Inception phase, 2) Solution design phase, 3) Execution phase, and 4) Dissemination phase.

This report is the second deliverable of the program, following the inception report that included an analysis of nine NDBs across Latin America and the Caribbean (LAC) and Asia Pacific Region (APR). This analysis spans insights on the overall status of agricultural finance in all nine countries, and the current and potential role of NDBs on this aspect. The report analyses strengths and weaknesses of the NDBs' key offerings; describes best practices from around the world; and maps key stakeholders for each NDB. The best practices outlined in the inception report were examined in greater detail during the solution design phase. Based on the insights of the inception phase and alignment with IFAD, six countries were selected for the solution design phase. Key factors in the selection process were financial ecosystem readiness, impact potential, institutional engagement, innovation potential, risk and stability, and opportunities for future engagements of IFAD in the country. After a careful selection process, the selected countries for solution design include Bolivia, Ecuador, Mexico, Pakistan, the Philippines, and Vietnam. The selected countries were visited¹ and in-depth analyses of their best-practices were conducted to identify the enabling factors behind their success. During these visits, the countries were also presented with the inception report's best practices and asked to reflect on which solutions would be most relevant to their context. The insights gathered from these discussions have been incorporated into the country toolkits that form part of the annexes of this report. The solution design phase aims to develop a toolkit to help NDBs and other IFE actors advance their projects and partnerships, focusing on innovative financial structures. As described in the Grant Design Document, the toolkit aims to offer guidance on developing partnerships, accessing co-financing, and building solutions that combine public and private resources. It is forward-looking, addressing prevailing challenges faced by NDBs when financing small-scale farmers, such as risk mitigation and capital mobilization.

¹ Please note that for Pakistan, the team worked with a local consultant and engaged in the visit remotely, due to security-related travel restrictions.

1.1 Methodology

To fulfil the objectives of the solution design phase, the project team applied a combination of desk research and on-site country visits, building on insights gathered during the inception phase as the foundation for this phase.

We (the RP team) organized country visits to all six countries during the solution design phase, where the main part of the visit was spent with NDBs, meeting various departments at their head office, visiting branches if applicable, and interviewing clients and stakeholders. The visits helped to deepen our understanding of the NDBs: their strategies going forward, key challenges at hand, details and conditions of best practices, and local stakeholder dynamics. Additionally, by engaging with key stakeholders such as financial intermediaries, ministries, and farmer organizations in each country, we can ensure that the proposed solutions are practically relevant and feasible.

To complement insights from the country visits, we conducted desk research for a theoretical underpinning of the report. This helped us to leverage on existing knowledge regarding existing best practices of NDBs; impact measurement of financial instruments; and existing partnerships to enhance agricultural finance.

As a result of the above activities, this report starts by listing the challenges of small-scale farmers, or in other words the demand that NDBs should consider when designing their products and services. This is followed by a description of NDBs' roles and tools to support small-scale farmers in solving their challenges. Subsequently, we introduce the methodology that we developed for moving from challenges to solutions: the NDB playbook, including illustrating examples. This is followed by the toolkit, including key products and services NDBs can offer, and under which conditions. In the Annex, a dedicated chapter for each country describes which products and services we deem most relevant to solve the challenges at hand. In these chapters, we also describe local context to consider, including eventual modifications to the general toolkit.

1.2 From inception to solution

The inception report focused on challenges faced by NDBs in LAC and APR. Common challenges identified in both regions include: maintaining cost-effective rural outreach, managing credit risk for smallholders and balancing political pressures with sound lending practices. Institutional inefficiencies and inadequate digital infrastructure further constrain NDBs to effectively deliver financial services to smallholder farmers. Additionally, second-tier institutions specifically are challenged with limited visibility into end-use of funds, which makes it difficult to ensure alignment with development goals and monitor impact effectively. The challenges identified will be addressed through the solutions described in this report. Building on the directions outlined during the inception phase, this report explores three key areas in greater depth:

1. Risk-sharing mechanisms, to reduce the perceived and actual risks of lending to smallholder farmers through instruments such as credit guarantees, insurance schemes, and portfolio de-risking.
2. Blended finance solutions, to mobilise public and private capital by combining concessional finance with commercial funding, enabling scale and sustainability.
3. Digital financial services, to lower transaction costs, improve service delivery and outreach, and enhance data-driven decision-making through digital platforms, e-KYC, mobile banking, and agri-fintech solutions.

In addition, global best practices highlighted in the inception report show that integrating financial and non-financial services can strengthen rural finance.

Variations in professionalism and institutional maturity among NDBs make it challenging to standardize solutions. There is no universal approach; therefore, we recommend that NDBs first assess which archetype (Chapter 4) best reflects the nature and maturity of their institution, and then follow the steps outlined in the playbook (Chapter 5) to identify the specific challenges they aim to address and determine which solutions are most appropriate within their local context.

2 Challenges of small-scale farmers

Before considering solutions that NDBs can provide to smallholder farmers, it is important to first specify the most pertinent challenges small-scale farmers face in their farming business. There are many types of small-scale farmers performing different activities, operating in different markets in a multitude of countries, making it difficult, if not impossible, to come up with a universally applicable farmer profile. Nevertheless, to strengthen NDBs' product propositions, it is critically important to establish a global list of factors that must be assessed when identifying effective – and scalable – solutions for smallholder farmers. Here, five categories of challenging factors have been identified. They apply in a varying extent to all countries and markets and should constitute the incentive and driving force for NDBs to create and choose the appropriate solutions. Each of these factors have in common that they all result in one overarching challenge to smallholder farmers: access to financial services.

2.1 Key challenges for small-scale farmers

2.1.1 Social- and institutional hurdles

A key challenge for farmers in the light of creating access to finance is land tenure insecurity. Unclear or informal land ownership discourages long-term investment and makes traditional finance based on collateral nearly unattainable, with the effect further exacerbated when the ability to vest collateral or its foreclosure is restricted due to legal, institutional or social hurdles. Despite efforts in many countries to regulate land ownership, still many farmers face continuing insecurity.²

Small-scale farming is often dominated by female farmers.³ These may encounter restricted access to land, credit or training. This gender inequality should be considered when designing solutions.

Limited organization among farmers reduces their ability to pool resources, expedite knowledge exchange, improve their bargaining power vis-a-vis suppliers and off-takers, or advocate for policy support. Despite numerous efforts worldwide to create farmer cooperatives, these may not always lead to organizations that are strong enough to represent the needs of farmers.

2.1.2 Infrastructure- and market access imperfections

Many smallholder farmers experience problems in reaching out to markets. Poor transportation networks in rural areas, inadequate roads and logistics limit access to markets and increase post-harvest losses. Additionally, smallholder farmers often lack storage facilities. Without proper storage, crops can deteriorate quickly, especially perishable goods. Furthermore, farmers also often lack proper market information. They may not know current market prices or demand trends, reducing their ability to make informed decisions.⁴

Lastly, smallholder farmers, because of their limited size, mostly have little bargaining power. Farmers typically buy and sell through middlemen, impacting on both input (increased) and output (reduced) prices. Due to farmers' weak positions at the start of the value chain, it is rather challenging to make a business case for them.

² Source: ILC, FAO & GLTN, 2021. Land Tenure and Sustainable Agri-Food Systems.

³ Source: FAO, 2023, The Status of Women in Agrifood Systems.

⁴ Source: J-PAL & CEGA, 2024. Increasing small-scale farmers' access to agricultural markets.

2.1.3 Environmental- and climate change

Understanding growing conditions is of significant relevance to farming. Increasingly, these conditions are impacted by weather events and climate change trends: dry edges are expanding in tropical zones, rainfall is reducing in traditional wet areas, drought duration is increasing, excessive rainfall more frequently results in (flash) floodings. Clearly, weather events and climate change are impacting agriculture and farmers need to be increasingly focused on improving farm operation resilience.⁵

To protect yields, soil degradation and poor land management needs to be circumvented. Additionally, limited access to clean water affects productivity, turning water into a critical resource next to a healthy soil. Optimizing soil and water management may lead to additional demand for irrigation, water and crop storage capacity, more climate resilient farm inputs, different crop types, et cetera. Above all, it requires transfer of knowledge on how to optimize farm operations through the application of more sustainable farming practices, likely requiring new and/or different crop selections and farming techniques, and thus equipment.⁶

2.1.4 Knowledge- and technology gaps

Many farmers not only lack adequate buildings, storage capacity and irrigation systems, but also – latest technology – equipment as well as mobile apps for farm management, including those for soil and water management. Additionally, even when they have access to modern technology, they may be wary to adopt farming methods new to them before having seen it successfully being applied elsewhere, or may not know how to apply it effectively. Digital literacy tends to be low among small-scale farmers. Overall, many small-scale farmers have had insufficient agricultural training: the lack of extension services and education hinders adoption of best practices.⁷

2.2 *The relevance of access to finance*

The hurdles as mentioned in section 2.1 lead to Financial Institutions (FIs) having a limited appetite to finance farming operations and small-scale farmers specifically. This is due to the perceived high risk of agricultural business on the one hand and the relatively high cost of service delivery in rural areas on the other. The perceived high risk stems from limited availability of operational and financial performance information, operating in and reliance on informal markets, high climate risks, low financial literacy, lacking availability of collateral (different from inability to vest and foreclose on collateral), high dependency on and (in absolute and relative terms) high cost of inputs and price as well as yield output volatility. Consequently, formal banking relationships have only been established for the minority of smallholder farmers.

⁵ Source: Gates Foundation, 2021. Smallholder farming is a proven path out of poverty, but climate change is changing the rules.

⁶ Source: Strandt, 2025. The intersection of climate change adaptation and smallholder farmer food security: a review of strategies and barriers.

⁷ Source: Dhillon & Moncur, 2023. Small-scale farming: A review of challenges and potential opportunities offered by technological advancements.

3 *NDBs' role in supporting small-scale farmers*

Since agriculture is often pivotal for national development, many countries have created NDBs with a public mandate to further develop this sector and to also specifically concentrate on the needs of the myriads of small-scale farmers whose households form the backbone of the rural economy. This is rooted in public policy and national priorities.

Here, it is important to make a clear distinction between commercial farmers, i.e. those farmers that produce to sell, and subsistence farmers, i.e. those farmers that produce to feed themselves. The first category deals with productive farming practices that generate an income stream, which aligns with the business rationale of financing. The second category is often better helped with social support by governments rather than financing from financial institutions. As a stable income generation is often lacking at subsistence farming, providing them with credits can worsen their challenges by adding over-indebtedness to the equation. This distinction between commercial and social activities should be clearly made, especially by NDBs. Where NDBs' support on increasing access to finance by (non-)financial instruments is clearly adding value, social support measures should preferably remain the mandate of governments and/or NGOs. In the remainder of this report we will use the term 'small-scale farmers' as farmers who can grow a marketable surplus, typically on a small piece of land, thereby falling in the category of commercial farmers.

While needing to make financially sound decisions, NDBs are not mainly profit-driven like private sector banks. This allows them to provide patient long-term capital for agricultural projects that do not directly meet the risk-return profile needed for private investments. NDBs also often benefit from a public guarantee and favourable risk rating, which not only underwrites this approach to risk, but also allows them to raise money from capital markets to fund projects and significantly increases the size of their lending portfolios. Crucially, all NDBs work in local currency, which eliminates exchange rate risk, helping to bring down the overall risk of projects and make them more viable.

As mentioned in the Inception Report, one can distinguish between two operating models for NDBs: first-tier and second-tier. First-tier NDBs can reach out to primary markets, serving both large and small farmers directly. Second-tier NDBs mainly work through other players in the financial sector, leveraging on the networks, distribution and retail capabilities of these institutions. Despite these different operating models both types of NDBs aim for similar objectives. In addition to distinguishing between first-tier and second-tier models, a third approach can be considered: a mixed operating model in which the NDB engages in both first- and second-tier lending activities. Beyond operating models, NDBs can also be classified based on factors like: funding sources, risk management practices, level of digitization, and other key dimensions. To make these differences more tangible, this report includes a matrix that illustrates these variations. By using this overview, NDBs can identify their current archetype within the matrix and, based on that assessment, determine which solutions outlined in the toolkit are most relevant to their needs.

Next to the role of NDBs being a bank, a financial institution providing finance to customers, NDBs transfer knowledge and vision as part of their public mandate. The below visual gives insight into the various roles that NDBs can perform.



Figure 2: Proposed role for NDBs. Source: Rabo Partnerships, 2025.

3.1 Capital allocation and leverage through de-risking

NDBs play a key role in allocating capital to small-scale farmers, through direct or indirect financing and guarantees as well as by catalysing public private partnerships, the latter especially in relation to sustainable agriculture.

Small-scale farmers are supported by NDBs through various financial instruments such as a variety of concessional loans (warehouse receipt financing and group lending, for example) and credit guarantees. These instruments often come with concessional features like low interest rates, grace periods, and flexible repayment terms to make financing more accessible and affordable for small-scale farmers.

First-tier NDBs provide financial instruments directly to retail markets. They serve small-scale farmers, farmer groups, farmer cooperatives and agro-dealers directly as well as their off-takers, small processors, traders or middlemen. They can only do so effectively if they have the key internal capabilities and distribution channels in place. This includes well-managed credit risk processes, insights in client and sector needs, and extensive branch networks, agents or digital networks to contact these retail clients directly. This puts them in a comfortable position of control.

The second-tier NDBs do not have this direct outreach to retail markets, but instead provide their financial services through third parties, intermediary financial institutions (IFIs), mostly local banks or microfinance institutions. This allows them among others to channel credit lines to IFIs, and provide credit guarantees on a portfolio level to local financial institutions, for these entities to bring finance to smallholder farmers. In doing so, the second-tier banks can create significant leverage on their capital. A strong example of leverage was found in Africa. The Alliance for a Green Revolution in Africa (AGRA), although a credit guarantee fund and not an NDB, reported using US\$17 million in loan guarantee funds to leverage USD 160 million through four major lending programmes. This included a US\$10 million line of credit that the National Microfinance Bank in Tanzania agreed to lend to agro-dealers at an interest rate of 18 per

cent, compared with the typical market rate of 46 per cent charged by microfinance institutions in Tanzania.⁸ This can only work when the local financial institutions have sufficient liquidity. If not, the second-tier NDBs can provide credit lines to the same effect, although in such cases the leverage on capital will be lower.

NDBs can play an important role in catalysing public-private partnerships (PPPs) for sustainable agriculture, acting as financial architects and strategic conveners to unlock investment, innovation, and impact across the agricultural value chain. NDBs can use blended finance instruments such as concessional loans, guarantees, and equity stakes, to de-risk private sector investments in sustainable agriculture. Private sector participation can thus be encouraged in areas like agroecology and regenerative farming, climate-resilient crops and irrigation systems or organic certification and sustainable supply chains. This is another, more bespoke, option for NDBs to attract additional capital and create leverage. This option is also open for first-tier NDBs.

In addition to financing and guarantees, insurance is a critical risk management tool that NDBs can help make accessible to small-scale farmers. Agricultural insurance products – such as weather-index insurance, crop insurance, and livestock insurance – can protect farmers against climate-related shocks, pest outbreaks, and other unforeseen events that threaten their livelihoods. NDBs can support the development and distribution of these insurance products either directly or through partnerships with insurance providers, leveraging their network and financial infrastructure. By subsidizing premiums or bundling insurance with credit products, NDBs can enhance the resilience of small-scale farmers and reduce the risk exposure of lending institutions, thereby encouraging greater investment in agriculture. Subsidizing premiums can best be done in an indirect way by lowering the risk of farming activities (e.g. by providing subsidized veterinary services for livestock to reduce mortality rates) and subsequently negotiating lower premiums with insurance companies (as an effect of the reduced risk), rather than directly subsidizing part of the insurance premium for farmers. In this way, an NDB can contribute to structural and long-term strengthening of the sector, rather than ongoing price support.

3.2 Allocation of knowledge

Since NDBs aim for the development of agriculture in a broader sense, capital allocation is practically always accompanied by some sort of knowledge transfer, or in other words Technical Assistance (TA). Ideally, this TA is offered to (potential) clients and helps to de-risk allocated capital, either directly or indirectly. There are various categories of knowledge transfers which NDBs can either provide themselves or facilitate.

A first category of knowledge transfer when serving smallholder farmers concerns capacity building and training. Agronomic training can be used to share best practices in crop management, soil health, and climate-smart agriculture. Financial literacy can help educate farmers on budgeting, savings, and accessing credit. And business skills can help farmers better understand market dynamics, pricing strategies, and entrepreneurship. This can also apply to strengthening of governance structures of farmer cooperatives/associations.

NDBs can promote technology transfers. For instance, they can promote the use of digital tools, like mobile apps for weather forecasting, pest alerts, and market prices. They can also introduce tools for mechanization, such as affordable and scalable farming equipment, e.g. rice planting machines or irrigation systems. Another form of technology transfer would be the adoption of blockchain technology, supporting systems that improve transparency in value chains and meet global standards, which could be beneficial to smallholder farming as it increases their opportunities to meet export criteria and thereby access markets that pay higher prices for their produce.

⁸ Source: IFAD, 2014. How to do Loan Guarantees.

NDBs are well positioned to create institutional linkages. Public-private partnerships can not only be created to source additional capital, but also to connect farmers with research institutions, NGOs, and private sector actors, to exchange knowledge. Farmer cooperatives can be encouraged to take collective action for bargaining power and shared resources and extension services to strengthen local agricultural advisory networks.

The insights NDBs have on climate resilience and sustainability allows them to promote agroecology, regenerative farming, and water conservation which may help in increasing farmers' resilience and reducing farmers' challenges on crop insurance, diversification, and climate adaptation strategies.

Finally, NDBs would be perfectly positioned to enhance digital inclusion. They can help in reducing the digital divide by investing in or supporting rural connectivity and digital literacy programs. And they can support digitized value chain finance to improve liquidity and reduce risk. To make their own offering more efficient and scalable to remote areas, NDBs can offer digital financial services to their end beneficiaries.

3.2.1 Organizing and managing sector knowledge

There are many considerations that NDBs should recognize when developing solutions for small-scale farmers. To effectively address the needs of small-scale farmers, each NDB is advised to establish or partner with its own (public) agricultural research and knowledge centre. Such centres can serve as repositories for gathering, sharing, and regularly updating relevant knowledge—both at a macro level, at the level of specific agricultural value chains, different geographic regions and at the level of the smallholder farmers.

Organizing sector knowledge within an NDB is crucial for informed policy making, opportunity identification, risk management, support of strategic objectives, and ultimately, the development of viable propositions. The optimal framework combines structured organization, ease of access and adaptability. Consequently, a centralized knowledge hub is recommended for capturing, maintaining and dissemination of market intelligence. This does not require the NDB to conduct all research internally; collaborative efforts with national bodies such as the Ministry of Agriculture, multilateral institutions, as well as interactions with locally active farmer unions and anchor companies can provide valuable information, knowledge and expertise. To capture and manage the knowledge on agriculture it is advisable to employ agronomists at NDBs. As the adage suggests, while farmers can adapt to banking roles, it is far more challenging for bankers to fully grasp the complexities of farming. Therefore, having professionals with an agricultural background is essential for creating effective and relevant solutions for the agricultural sector.

A thorough understanding of agriculture will be helpful in identifying the markets the NDB wants to operate in and to quantify the “additionality” that they create through their lending and business operations (e.g., providing financial services to firms and individuals for the first time, enabling other financial intermediaries to serve clients, making new deals possible, and encouraging their governments to adopt new policy actions in their market niches).⁹ The ability of NDBs to reach customers in sectors that private financial institutions do not serve sufficiently makes them a relevant actor in the global development agenda.

3.2.2 Connecting value chain actors

Rather than viewing farmers in isolation, it is worthwhile for NDBs to consider the entire flow of goods and money – from input suppliers to processors and retailers- and identify opportunities to embed financial services within these relationships. Such a value chain approach leverages the interconnectedness of actors within agricultural value chains to improve access to finance for small-scale farmers.

NDBs can play an important role in enabling value chain finance by identifying and partnering with anchor firms that have strong relationships with other value chain actors, including exporters, retailers, traders, and processors. These

⁹ Source: World Bank Group, 2017. Survey of National Development Banks.

firms often have the capacity to offer off-take agreements, provide inputs, or co-invest in infrastructure such as storage or irrigation. By connecting farmers as well as upstream actors to these anchor firms, NDBs have the potential to contribute to stronger, more integrated value chains. A higher efficiency of the value chain should ultimately lead to better prices for farmers and lower consumer prices.

3.3 The importance of sound governance

Sound governance is crucial for NDBs to fulfil their development mandates effectively and sustainably. Excessive political interference can undermine NDBs' operational integrity, distort financial decision-making, and erode trust among stakeholders.

Therefore, clear governance structures at arms' length from the government and Ministries should be established that safeguard a certain level of independence and technocracy. To do so, NDBs should be governed by clear legal mandates that define their roles, responsibilities, and decision-making autonomy. While the NDBs' strategic priorities may change along with political cycles, their mandates should be protected from frequent political changes. Additionally, boards composed of technocrats, sector experts, and representatives from various ministries – rather than political appointees – can help ensure strategic alignment without compromising financial- and operational soundness. A good example in this perspective is FIRA from Mexico. This NDB is organized under supervision from the Central Bank of Mexico, thereby safeguarding more independence from politics and sound banking practices. Moreover, FIRA's Technical Committee that evaluates and approves new instruments/programs consists of representatives from the Central Bank, Ministry of Finance, Ministry of Agriculture, agricultural producer organizations and the banking sector.

Moreover, NDBs should adopt robust internal controls, audit mechanisms, and performance monitoring frameworks. These systems should be designed to detect and prevent politically motivated lending, politically motivated repayment waivers, misallocation of resources, or preferential treatment.

3.4 Conclusions

This chapter aimed to summarize NDBs' role in solving small-scale farmers' challenges, and the available instruments in doing so. The below table provides an overview of the key categories of instruments as described. In the toolkits (chapters 5 and 6), these instruments are described in further detail, including the context of when it should be applied, enablers for success, and the potential role of public- and multilateral parties in enhancing effectiveness.

Instruments	Description
1. Concessional loans	Loans that are extended on terms substantially more generous than market loans.
2. Credit guarantees	Reducing the risk for commercial lenders, encouraging them to extend loans to underserved sectors
3. Insurances	Protecting farmers against risks such as crop failure, extreme weather, or livestock loss.
4. Digital financial services and channels	Leveraging mobile banking, digital wallets, and fintech platforms to increase access to financial services for farmers and rural communities.
5. Technical assistance and capacity building	Strengthening the capacity of farmers, financial institutions, and value chain actors, therewith de-risking capital allocation.

Table 1: Brief summary of available instruments to solve small-scale farmers' challenges. Source: Rabo Partnerships, 2025.

4 NDB Archetypes

Before exploring the playbook in the next chapter - which provides NDBs with a structured approach to identifying challenges and selecting the most suitable solutions - it is important to first understand their current position. The matrix in Figure 3 illustrates the positioning of NDBs across two dimensions: their operating model and their maturity level. Horizontally, it distinguishes between three operating models - first-tier, mixed-tier, and second-tier - reflecting whether an NDB lends directly to clients, combines direct and intermediary lending, or primarily operates through intermediary financial institutions. Vertically, it categorizes NDBs into three maturity levels: foundational, intermediate, and advanced. Foundational NDBs typically exhibit elementary risk management, manual operations, rely mainly on traditional financial instruments, and could be financially vulnerable or even unstable. Intermediate NDBs show emerging risk management practices, partial digitization of processes and services, a mix of traditional and progressive financial instruments, and moderate financial stability. Advanced NDBs demonstrate strong risk management, robust digital infrastructure, sophisticated financial instruments, strategic non-financial activities, and financial strength.

The matrix serves as an auto-diagnostic tool, enabling NDBs to identify their current position and use that insight to determine which solutions in the toolkit are most relevant to their needs and capabilities. It is not a linear progression, nor prescriptive - an NDB may exhibit characteristics from foundational, intermediate and advanced categories. The matrix should be viewed as an indicative guide rather than a strict classification.

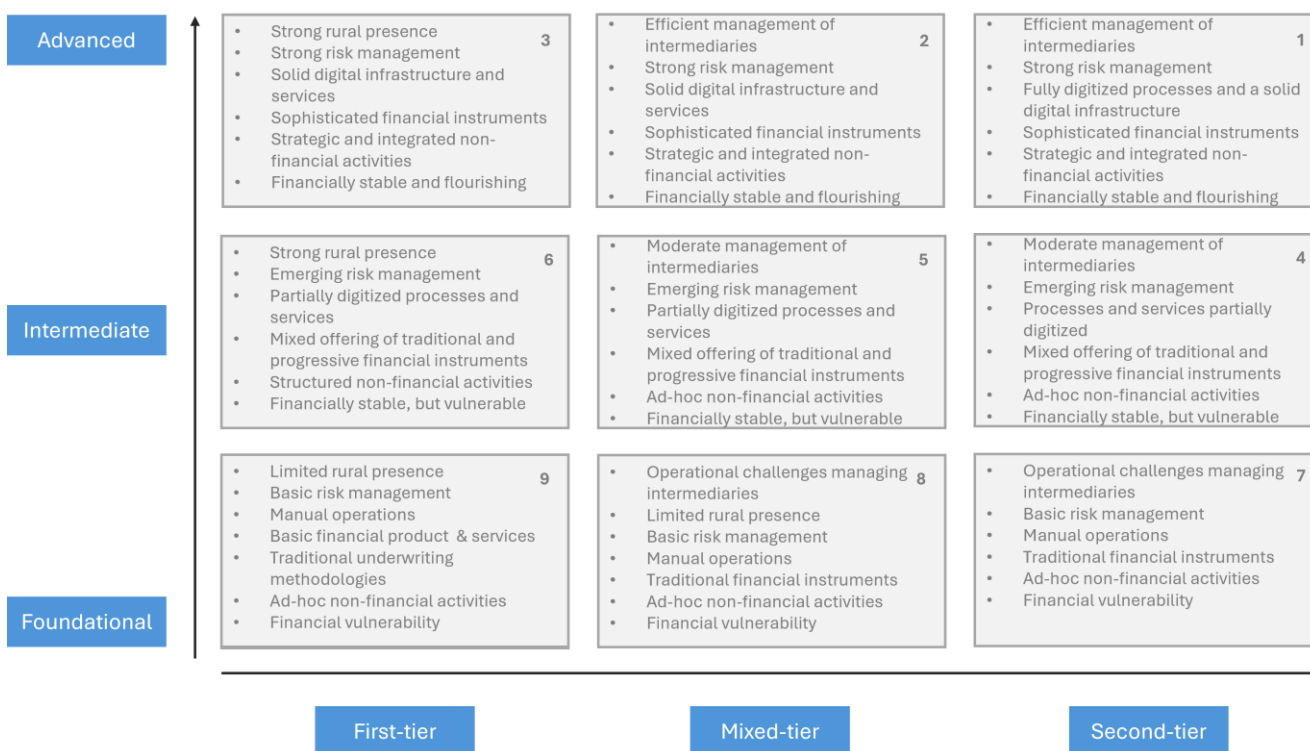


Figure 3. NDB Archetypes

For more detail on the NDB archetypes and for more context on indicators such as risk management practices, please refer to Annex A.

5 Playbook for moving from challenges to solutions

For an NDB to fulfil its development mandate, it is to follow a structured process for setting concrete objectives regarding small-scale farmers in selected target markets. For instance boosting dairy production and farmer income in the southern province by 30% in the next 3 years, or reducing post-harvest losses for rice production by 40% in the next 4 years, addressing these objectives requires formulating solutions comprising the development, coordination and use of effective financial and non-financial instruments as well as KPIs. The playbook as mapped out in this chapter aims to serve as a tool for NDBs when assessing and enhancing their offering, taking the challenges of the end beneficiary as a starting point. The playbook contains 4 stages and 6 essential steps to assure that NDBs’ solutions are well aligned to the challenges that are to be addressed.

These 4 stages will be explained in more detail in the next sections and should lead to an outcome of tailor-made support for small-scale farmers in a selected market. This market can be either based on an agricultural sector, such as poultry or horticulture, or refer to a certain geographical area, like a province or a district. For each market it is essential to identify the most pressing challenges small-scale farmers encounter and then find a solution that effectively addresses these issues, enabling farmers to thrive.

Offset
0. Clarity and agreement on addressable market.
Stage 1: What to offer?
1. What challenges of small-scale farmers are to be addressed? 2. What instruments most effectively address the challenges?
Stage 2: How to offer?
3. What are the most effective distribution channels and strategies?
Stage 3: Which capabilities needed to implement the instrument?
4. What are the relevant organisational enablers and limitations?
Stage 4: Implement, monitor, and adjust
5. Integrate in PDCA cycle.

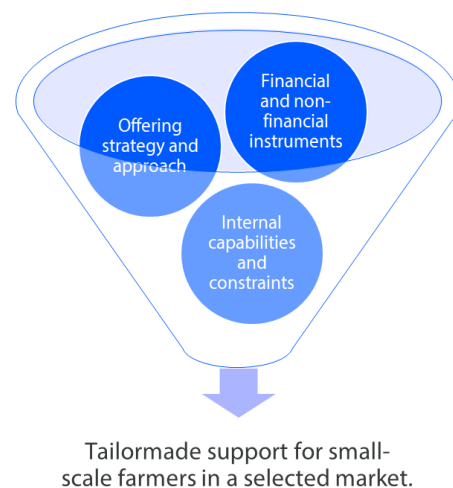


Figure 4: Overview of all stages in the playbook. Source: Rabo Partnerships, 2025.

5.1 Step 1: Which farmer challenges are identified in the market?

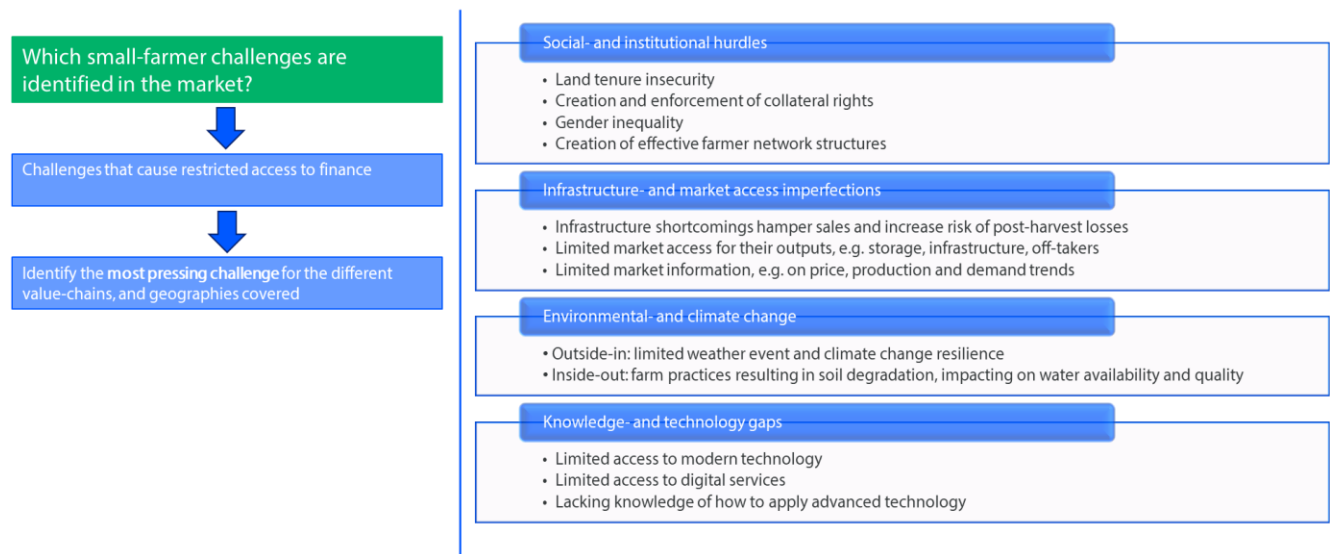


Figure 5: Step 1 of the playbook. Source: Rabo Partnerships, 2025.

5.1.1 Social and institutional hurdles

Typically, social and institutional barriers call for a variety of solutions to establish a more favourable enabling environment for small-scale farmers. An important enabling factor is the legal framework and registration of land titles in a country. This is often part of governmental scope and mandate. Nevertheless, NDBs can apply their influence to lobby and support in the establishment of these national legal frameworks. Another factor is the implementation of wide-spread financial literacy trainings that lay the foundation for formalisation of many financially excluded people, mostly in rural areas. These financial literacy programs can be promoted by NDBs and often implemented and scaled through NGOs that have granular outreach to rural areas.

To overcome the main social-economic hurdles for small-scale farmers (reliance on informal markets, high dependency on middlemen, limited bargaining power, etc.), there is a mix of conventional and digital initiatives found across the world. First, small-scale farmers joining forces through cooperatives or associations has proven a very effective solution to increase their bargaining power and economies of scale. Professionalism of these organizations remains a challenging factor though. In this perspective, NDBs can consider supporting the development of these organizations through non-financial instruments like TA through partners (NGOs, governmental organisations, anchor clients in the value chains, etc.). On the other hand, to increase access to formal markets for small-scale farmers, several (AgTech) initiatives have seen the light over the past years. For example DeHaat, AgroStar (India), Twiga Foods (Kenya), AgroLend (Brazil) and Frubana (Colombia) are interesting examples that shorten the value chains by leaving out middlemen, either focusing on input supplies and/or sales of produce by farmers. Some NDBs have -only recently- started to explore their role in these developments. Sometimes by investing in some of these AgTech initiatives (e.g. ambition of Agribank, Vietnam) or by actively promoting these digital tools and services to small-scale farmers (e.g. FIRA, Mexico).

5.1.2 Infrastructure and market access imperfections

Financial instruments that have been considered by NDBs to tackle infrastructure and market access challenges can be related to development of digital marketplaces for farmers and thereby shortening the value chains by leaving out middlemen, as described in section 2.1.2. Other examples are financial support (de-risking) by NDBs of national infrastructural projects that are focused on agriculture (e.g. irrigation projects, road access to rural areas, warehousing, cold storage, etc.).

Non-financial instruments to contribute to improved market access to farmers focus on improving agricultural practices (to match better quality or certification requirements of markets), improving digital connectivity in rural areas, information about demand trends and prices of certain crops and the facilitation of stronger (formal) linkages in productive value chains between farmers and off-takers/processors.

5.1.3 Environmental- and climate change

NDBs can contribute to mitigating environmental and climate change hurdles for small-scale farmers through a variety of financial and non-financial solutions. Non-financial solutions that focus on deepening and disseminating knowledge about increasing resilience of small-scale farmers against environmental and climate changes. For example, crop suitability plans for different soil types and regions in a country, agroforestry models, regenerative agronomic practices, substitution of synthetic fertilizers by bio-fertilizers and other sustainable agricultural practices. When looking at financial instruments that can be deployed by NDBs, we have encountered climate and/or crop insurance products, guarantee structures, special funds/programs (e.g. Sustenta+ by FIRA, Mexico) to support farmers in their transition towards more sustainable agricultural practices, etc.

5.1.4 Knowledge- and technology gaps

In this context NDBs can play a pivotal role through collecting, validating and distributing relevant know-how to small-scale farmers throughout the country. Digital channels allow NDBs to increase their outreach, provided that digital connectivity in rural areas is sufficiently available. An interesting example stems from FIRA in Mexico, where its regional Technological Development Centres focus on validating innovative and sustainable agricultural practices together with farmers that are open to adopt new practices and test them on their own lands. Their learnings are distributed through videos on social media to other farmers (training of farmers by farmers), which significantly increases the adoption rate of new and improved practices or technologies.

5.2 Step 2: What instruments most effectively address the challenge?

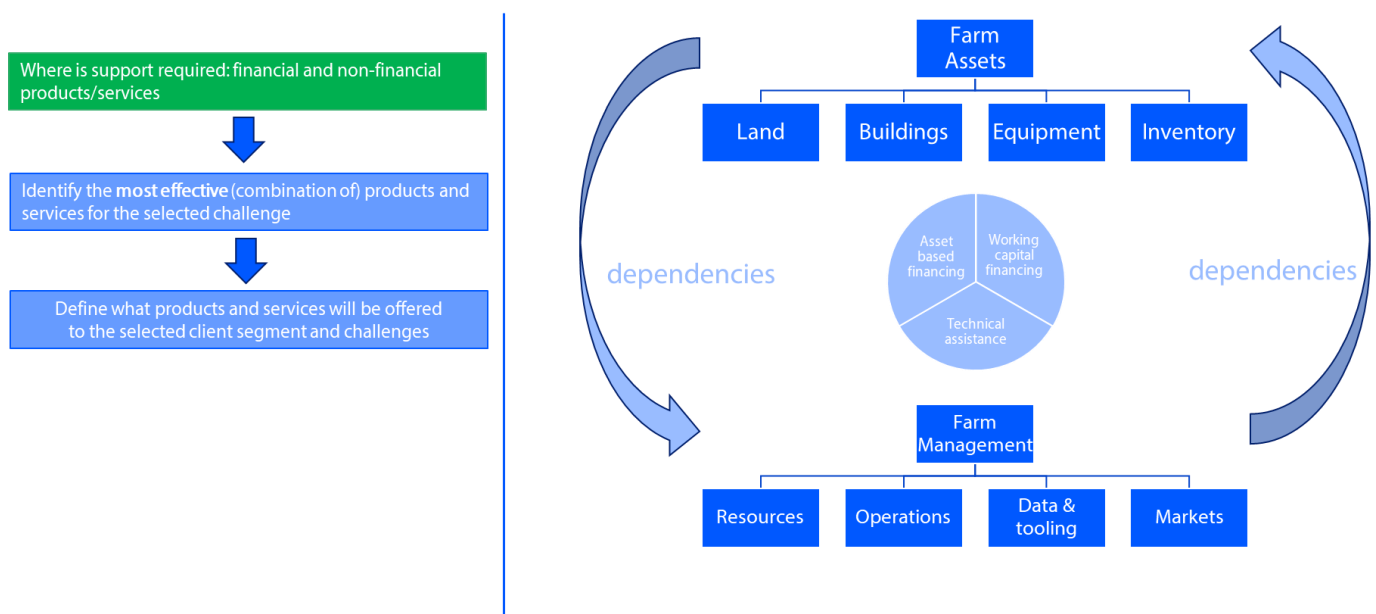


Figure 6: Step 2 of the playbook. Source: Rabo Partnerships, 2025.

Based on the identified challenges, an understanding can be created of what financial and non-financial instruments are best suited to address the issues of small-scale farmers. Financial instruments can mostly be linked to farm assets, such as farmland, real estate, equipment and inventories. Finance and insurance is needed to make this work. Non-financial instruments are primarily linked to farm management, such as the application of new farming methods, enjoying better market access, or obtaining more market power through cooperation with other farmers.

Solutions should be scaled to a level that fits the actual requirements of the farmers and matches the ability of the NDB to offer these solutions themselves or avail these through third parties, depending on cost and available resources. It defines the final product mix.

5.3 Step 3: How to offer the identified solution?

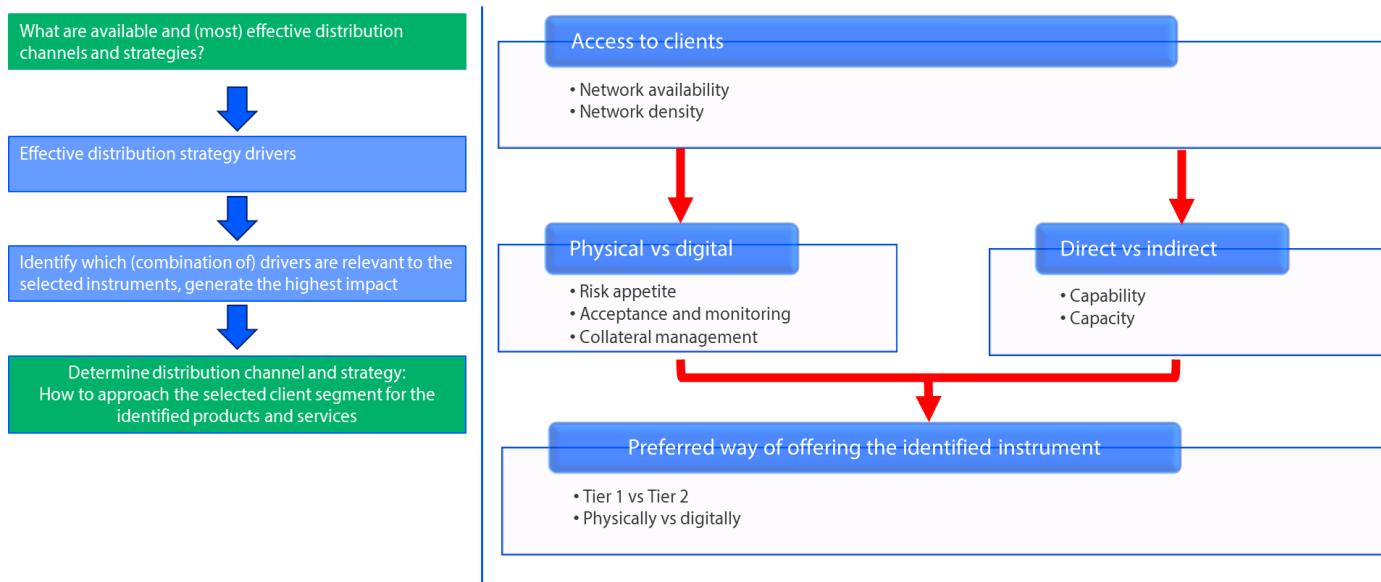


Figure 7: Step 4 of the playbook. Source: Rabo Partnerships, 2025.

Now that the NDB has developed a preferred product mix in stage 1, in stage 2 the question needs to be answered what would be the best way of bringing this to the market. Distribution of products and services in rural areas has its challenges and the outcome will largely depend on local circumstances. For example, Agribank in Vietnam can access large parts of the country, owing to its extensive branch network. And since it’s a Tier-1 bank, it can swiftly make a credit product accessible for its clients across multiple regions in Vietnam and many remote regions. However, with limited digitization integrated into rural lending operations, it is unable to build a strong credit profile of its clients through data and hence can only offer limited products for rural regions such as group-based lending. For other higher ticket sizes, it is highly dependent on collateral.

5.4 Step 4: Which capabilities are needed to implement the solution?

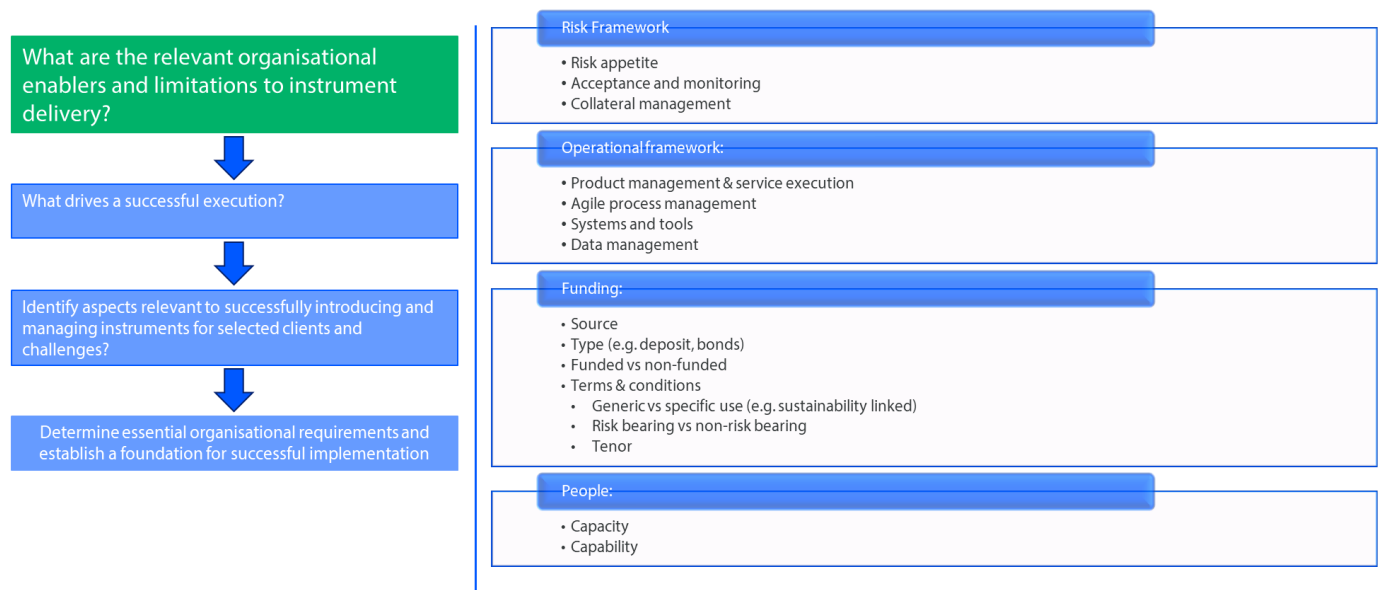


Figure 8: Step 5 of the playbook. Source: Rabo Partnerships, 2025.

When the solution is sorted and a distribution method has been chosen, everything must be set for implementation. The NDB needs to be well geared to put the entire proposition in motion, in terms of risks, operational capacity, funding and human resources. Things can easily get complex, especially when coordinating work with other parties which can range from government institutions to multilateral development banks to microfinance institutions or farmer cooperatives. Careful planning and organisation is key. As also described in Chapter 4, NDBs can be roughly categorized into 9 archetypes, based on their operating model and maturity level. Choosing the appropriate solution for the challenge at hand in the previous step of the playbook is directly impacted by the type of operating model of an NDB (1st-, 2nd-tier or mixed). However, in this step of the playbook, the maturity level of the NDB is a determining factor in organizing accordingly to implement the chosen solution successfully.

For example, in Mexico, to finance CAPEX for farmers – where longer-term credit is essential – banks and financial cooperative institutions turn to FIRA for funding. FIRA can offer such credit to these institutions since it has leveraged long-term capital from domestic and international investors through issuing bonds. It has established a Sustainable Bond Framework to issue green, social, and sustainability bonds through its trust funds (FONDO and FEFA) and the proceeds are earmarked for projects that contribute to climate resilience, financial inclusion, and socio-economic advancement in rural Mexico. Additionally, FIRA also leverages its digital platform to multiply FIRA’s TA outreach to more farmers in the country. The application is widely used to identify crop diseases and possible solutions for the diseases.

5.5 Step 5: Implement, monitor, and adjust

Actual implementation takes place in stage 4. It never ends with implementation, as the NDB’s intervention deserves a proper follow-up with careful monitoring and adjustment where needed. From a management perspective, these interventions into markets regarding small-scale farmers can be viewed as projects with a pre-set timeframe, which can vary in length to multiple years. After launching a new instrument, the NDB should embed a Plan-Do-Check-Act cycle to ensure continuous improvement. Primarily, it should define clear goals and success metrics aligned with farmer needs and internal capabilities. Then, roll out the instrument in pilot regions, ensuring proper training and data collection. It can use the pilot to regularly monitor performance through field feedback and digital tools, comparing actual outcomes with expectations. And based on insights, further refine product features, partnerships, and outreach strategies. This iterative approach helps the bank adapt quickly, enhance impact, and scale responsibly while staying aligned with national development goals.

5.6 Examples of moving from challenges to solutions

While most NDBs show to have a thorough understanding of their end beneficiaries' challenges, the solutions being offered for a particular challenge are not always solving it in the most optimal way, often because one or more steps of the suggested playbook were not considered. To concretise this, we outline – both effective and ineffective – examples in this section. Please note that the examples in this section are focused on the overall design (process) of solutions. The next two chapters describe the instruments, including their enabling factors, in more detail.

5.6.1 Concessional loans

BanEcuador's "Crédito 1x30" program aimed to solve economic and social and institutional hurdles for small-scale farmers. The program offered loans of up to 5,000 USD at a 1% annual interest rate with a 30-year repayment term. While the program saw rapid uptake, the repayment discipline was weak. One year after introducing the product, BanEcuador's NPLs had soared to 25%, up from 13% in 2019 and far above the 3-4% typical for private banks in Ecuador. This shows a design flaw in the product: the generous terms likely encouraged a perception among end-beneficiaries that repayment was optional. The outcome of this program shows an additional challenge that needed to be solved: knowledge gaps of small-scale farmers, on financial literacy specifically. Financial literacy training accompanying the product could have positively contributed. Additionally, the program raised concerns about financial sustainability. The concessional terms meant the real value of the loans was far below their nominal value, while BanEcuador received no direct government funding to cover this subsidy. This strained the bank's financial health, and showing that step 5 of the playbook (funding specifically) has not been addressed carefully enough in the design.

Moreover, by not including a minimum, but only a maximum amount of USD 5,000, it remains to be seen how many of the targeted farmers can classify as commercial farmers instead of subsistent farmers. As indicated in chapter 3, farmers are often best helped through social support from government or NGOs, whereas commercial farmers generate an income stream that aligns with the business rationale of financing. This separation should always be considered when designing solutions by NDBs, as it might directly (negatively) impact the financial sustainability of these institutions. Next to that, it should be noted that institutions like BanEcuador often administer government debt-relief programs, which can create mixed incentives for borrowers and affect repayment culture.

5.6.2 Guarantees

An effective example comes from FIRA's (Mexico) guarantee product, that aims to solve the key challenge of the high perceived risk of small-scale farmers by IFIs. The specific financing needs can differ greatly among small-scale farmers throughout the country and across different sectors. That is why FIRA offers twelve different modalities within the same guarantee product. The modalities range from programs for priority segments to rural SMEs and sustainable productive territories. All modalities follow the same principles and process for application and disbursement, but have varying percentages and coverage. Moreover, FIRA has applied a minimum amount to the credit guarantee, to assure that the instrument is geared towards commercial farmers instead of subsistence farmers.

Targeting the same challenge, FINAGRO's (Colombia) guarantee product is structured differently from that of FIRA. One important difference is the fact that the guarantee premium is passed on by the financial intermediary to the farmer by adding the percentage to the overall interest rate. While this makes the product more attractive for financial intermediaries, it is not designed with the challenge of the farmer as the main priority.

Therefore, following the reasoning of our framework, FIRA's guarantee product would be most effective, as it takes the challenges of the farmer as a starting point, and solving farmers' challenges is reflected throughout the design of the product.

5.6.3 Insurance

Agricultural insurance products can provide a buffer to climate shocks for most farmers, especially small-scale farmers who are most vulnerable to climate shocks. However, according to UNDP less than 20% of all farmers globally are insured and for smallholder farmers in low-income countries that percentage drops below 5%. There is much room for

improvement here, as less than 10% of NDBs with an agricultural focus include insurance in their portfolios.¹⁰ In the Philippines, agricultural insurance uptake was extremely low; only 4.5% of rice farmers and 0.9% of corn farmers were covered as of 2013. However, through targeted efforts by the Philippine Crop Insurance Corporation (PCIC), coverage increased significantly, reaching between 36% and 45% of all farmers by 2021.¹¹ In Colombia, FINAGRO administers the Incentivo al Seguro Agropecuario (ISA), which subsidizes up to 90-95% of insurance premiums for small producers, aiming to decrease the burden for them to apply for these products. Still, the uptake remains limited, reportedly because of a limited understanding of the products and their benefits.

Agricultural index insurance products are innovative examples that can bring down the costs of these insurance products for farmers using data and technology. Pula (Kenya) and MiCRO/SBS Seguros (Colombia) have shown promising examples of embedding index-based insurance product in lending products and/or agricultural inputs for farmers in emerging countries.

Experience from the International Fund for Agricultural Development (IFAD) INSURED program across 13 countries offers another strong example – bundling crop insurance with input subsidies, access to digital banking and farmer training. Over five seasons, the programme reached more than 100,000 farmers – 58 percent of them women or youth – with nearly 90 percent reporting increased resilience.

However, despite some promising examples, agricultural insurance still has very limited uptake among small-scale farmers, largely due to high premiums and lack of financial education among this target group.

5.6.4 Technical assistance

As we argue in chapter 3, allocation of knowledge is ideally organised in such a way that it accompanies capital allocation, making the financial solutions of an NDB more effective and embedding the foreseen improvements among small-scale farmers.

BDP's (Bolivia) climate risk system is partially adding value to their financial services. The system has two key functionalities, being an agroclimatic vulnerability model for internal use, and climate alerts to warn farmers through WhatsApp messages. Farmers indicated that the latter helps them to better plan their farming and harvesting practices, therewith decreasing crop loss and increasing repayment capacity. As such, the climate alerts positively contribute to the performance of BDP's financial solutions. However, the vulnerability probability model could be deployed more effectively. While it provides valuable insights in risk levels of regions and crops, these insights do not influence credit decisions. Even at the highest risk level, indicators from the system have no impact on the credit decision of BDP. The credit will be offered to the client, with additional TA being suggested.

FIRA's Technical Development Centers ("Centros de Desarrollo Tecnológico") recognize farmers' knowledge and technology gaps. As such, they offer farmers agronomic advice, with in-house laboratories to perform soil tests, and demonstration plots to showcase (sustainable) agronomic practices. Here, it is acknowledged that farmers' preferred way of learning is by seeing proof of how new practices can work, rather than hearing about it in a workshop. By offering this advice to clients specifically – and not to non-clients – FIRA offers this TA in a dedicated way to de-risk capital allocation.

Looking at the low financial literacy levels in rural Pakistan, the State Bank of Pakistan launched an Agriculture Finance Literacy Program (AFLP) aimed at integrating 500,000 farmers into the financial ecosystem through workshops and outreach delivered with provincial agriculture and livestock departments.

¹⁰ Source: UNDP, 2025. How public development banks can use insurance to de-risk agricultural lending.

¹¹ Source: World Bank Group, 2023. Reforming Agricultural Insurance in the Philippines.

Lastly, apart from capacitating farmers, it can also be an NDB's role to strengthen their financial intermediaries. This is what FINAGRO has done, in combination with an agricultural finance methodology and digital credit application tool that they developed. To increase the usage of these tools by FIs, FINAGRO visits their intermediaries physically for two-three days and performs an extensive training on their available tools and proposed methodology. This enables FIs to channel more finance to the agricultural sector, while using FINAGRO's funding lines to further scale.

6 Toolkit of financial instruments

Depending on the challenge that the NDBs aims to solve for selected client segments, a palette of solutions is available. As described in chapter 3, the role of NDBs is to allocate capital as well as knowledge, which can be done through the various instruments as described. This chapter further elaborates on the specific way these instruments can be channelled to small-scale farmers. While we do not invent new solutions here, we rather describe how to offer existing products and services in an effective and innovative way, building on lessons learned from countries around the world.

As becomes clear throughout this chapter, a crucial enabler for the solution to be offered is appropriate funding. A relatively new phenomenon for NDBs is to use capital market instruments to raise funding beyond its government budget allocations. Already, NDBs in various countries work together with NGOs, multilateral development banks, multilateral agencies and a variety of donors to set-up impactful development projects aiming at the improvement of access to finance for smallholder farmers. Most of this takes place on a project basis. Through blended finance mechanisms, NDBs can make strategic use of public or philanthropic capital to attract private investment into projects that deliver social, environmental, and economic benefits, especially in emerging markets or underserved sectors.

Innovative is the issuance of impact focused bonds. In this way NDBs can broaden their investor-base and mobilise private funds for agriculture for longer-term, in some markets even up to 15 years. When linked to a specific sector or theme, such as agroforestry or gender, they can attract specific new private sector investors, also from abroad. This is not done in a traditional sense on a project basis, but more on a basis for multi-year programs.

6.1 Concessional loans

Challenge	Social- and institutional hurdles	Infrastructure- and market access imperfections	Environmental- and climate change	Knowledge- and technology gaps	Limited access to finance
Can the challenge be solved by this solution?					

6.1.1 Context

NDBs typically offer loans at terms more favourable than those available commercially. They feature lower interest rates, longer repayment periods, or grace periods before repayment begins in their strive to provide additionality. They do this because private sector parties fail to provide suitable finance to small-scale farmers and because they pursue specific developmental objectives. Various types of lending are offered.

6.1.1.1 Seasonal loans

Seasonal loans are a vital financial tool for smallholder farmers, especially in regions where agriculture is the primary livelihood and income is tied to crop cycles. These loans are designed to align with the rhythms of farming, and they come with specific characteristics tailored to the unique needs of smallholder farmers. The following characteristics can be noted:

Timing and disbursement is linked to the agricultural season. At the start of the season farmers need funds for farm inputs and planting. After these significant expenses, revenues will only become available when sales are made after harvesting. So, any financing should be aligned with the crop cycle. Funds are then typically disbursed before the start of the agricultural season to cover input costs. Most seasonal loans have a short-term duration lasting one crop cycle (e.g. 3–12 months), though some may extend slightly depending on the crop.

Although the concept of seasonal loans sounds straightforward, it requires some flexibility and know-how from the lender. After all, seasons largely depend on soil and weather conditions, which on their part become increasingly dependent on climate change. Many microfinance organisations for instance lack the proper agri know-how and flexibility, leading to delayed disbursement or repayment schemes that are not in sync with crop cycles and thus farmer income. Typically all of the NDB-archetypes (1-9, see Chapter 4) offer seasonal loans. However, the finetuning and digitalization of these products will be more seen at NDB archetypes 1, 2 and 3 than at NDBs with a foundational maturity level.

The purpose-specific use of seasonal loans is restricted to input financing, such as for seeds, fertilizers, pesticides, labour and irrigation or for some specific post-harvest needs, such as for storage or transport if repayment is expected after sale. This purpose-specific use can justify the application of disbursement controls by the lender. So, for instance the NDBs can directly pay the invoice of the seeds supplier when granting the seasonal loan, rather than disbursing cash to the farmer who then intends to pay the seeds supplier. This system is for instance now being applied in Pakistan, where the disbursement of a loan can partially be done in cash and partially by the emission of QR-codes, which can be converted into farm inputs at selected agro-dealers. This is also described in more detail under the paragraph on value chain finance below.

The repayment structure of seasonal loans typically is a bullet repayment, often repaid in a lump sum after harvest, when farmers have cashflow available. Terms can be flexible: some lenders offer grace periods or adjust repayment schedules depending on weather or market conditions. To encourage timely loan repayments, the Indian government has introduced a Prompt Repayment Incentive, which offers farmers a 3% interest subvention when loans are repaid on time.

Seasonal loans can also become part of value chain finance, where offtake contracts for farmers can provide comfort to lenders, or where NDBs can provide loans to off-takers for on-lending to small-scale farmers. Typically, this add-on to seasonal lending instruments is more seen at NDBs with intermediate and Advanced maturity levels (archetypes 4-9). The largest source of smallholder finance is provided by off-takers sourcing from farmers e.g., traders, processors and input suppliers. This short-term and agriculture-specific finance is typically delivered via advances, input credits, or contract farming. These forms of value chain finance also come with some considerations, like the interest levels applied by value chain partners and the risk of locking in small-scale farmers through these lending practices, which can limit their ability to get the best market price for their produce.

Looking at the risk profile of small-scale farming, lack of collateral and the administrative cost for relatively small loans, the interest rates for seasonal loans could become prohibitively high, at levels that farmers just cannot afford. Therefore, certain concessional terms are often needed for farmers to step in. In some markets, governments prescribe interest rate ceilings or interest rates can be subsidized by the lending institution following policy mandates.

6.1.1.2 Value chain finance

NDBs can enhance small-scale farmers' access to finance through value chain finance (VCF) instruments by leveraging relationships and cash flows within agricultural value chains. By aligning financial products with the production, processing, and marketing stages, NDBs can reduce risks and improve creditworthiness. There is a wide array of value chain finance solutions available. Without claiming to be exhaustive, a couple of key mechanisms are worth mentioning in this context.

- Tripartite agreements or anchor-based lending: financing is extended based on contracts with buyers or processors who act as anchors in the value chain, sometimes with closed loops where payment from anchor client to farmers passes through an escrow account, where the bank can deduct interest and principal repayment before disbursing it to farmers. These instruments are quite foundational and can typically be offered by all NDB-archetypes.
- Warehouse receipt financing: farmers use stored produce as collateral to access short-term credit. See for a more elaborate description below.
- Input financing: loans are provided for seeds, fertilizers, and equipment, often facilitated through input providers or cooperatives.

- In the more integrated value chains (e.g. milk, coffee, cacao, sugarcane, etc.) farmers deliver their produce to an off-taker or processor and receive an invoice for an amount payable within approximately 30-90 days. As most small-scale farmers don't have high liquidity buffers, they prefer to receive the pay-out immediately. This often leads to an increased risk of side-selling, where farmers sell their produce to middlemen that come to their farms and offer immediate cash payments for their produce, often against lower prices. Side-selling significantly weakens the strength of value chains. In order to meet farmers' need of immediate liquidity and to strengthen trust between farmers and buyers in the value chains, NDBs can offer factoring schemes. Through factoring schemes the FI buys the invoice from the farmer at a discount (this often ranges between 1-10% of the invoiced amount) and pays out to the farmer immediately. The FI then collects the full invoice amount from the processor/off-taker when due. Important to mention is that in a factoring scheme, the FI assumes the credit risk of the off-taker/processor and not of the farmer. As factoring requires a solid administrative system, this instrument is typically offered by intermediate or advanced NDBs (archetypes 4-9).
- Another way for NDBs or FIs to install trust between farmers and their off-takers in value chains is through confirming schemes, where the FI can guarantee payment by the off-taker to farmers on the agreed date. This reduces uncertainty for farmers and installs trust between the value chain players. In addition, the NDB can also offer early payment options to the farmer, instead of waiting for the buyer's payment cycle. Early payments can be done at a small discount to the invoiced amount, similar to factoring schemes. In this case the invoice acts as security and no additional collateral is required from the farmer. As confirming requires a solid administrative system, this instrument is typically offered by intermediate or advanced NDBs (archetypes 4-9).
- Risk-sharing instruments: guarantees and insurance schemes mitigate risks for financial institutions and/or anchor clients lending to smallholders in their value chains with some of the instruments mentioned above.
- Most of the above mentioned value chain finance solutions can also be extended with closed-loop payment schemes through input credit cards. Payments (typically by banks or off-takers to farmers) to these credit cards can be earmarked for buying farm inputs (e.g. seeds, crop protection, fertilizers and small equipment) at pre-selected agro dealers. This way NDBs can exercise control over the way credit is spend by farmers, thereby mitigating risks. An example of this input credit card is NABARD's Kisan Credit Card (KCC) scheme in India. These closed-loop payment systems vary from very basic to highly tech-savvy and can therefore be customized according to the maturity level of the NDB (all archetypes).

These instruments (among many others) help integrate farmers into formal agricultural value chains, improve productivity, and foster inclusive rural development.

6.1.1.3 *Warehouse receipt finance*

A special form of seasonal loans, and a strong example of value chain finance, is warehouse receipt finance. Many farmers are under pressure to sell their produce directly after harvesting because of a lack of storage capacity and a dire need for cash. Since for most farmers harvest similar produce, this often takes place at the same time/season, prices become under pressure as supply of the same produce increases significantly. To avoid a fire-sale and take matters under control, it will be helpful for farmers to store their harvest in a warehouse and use this as collateral for finance until sales can occur when prices go up again. So, warehouse receipt finance is a form of collateral-based lending that enables businesses, especially in agriculture and commodities, to access working capital by using stored goods as security.

When loans are issued against warehouse receipts, which serve as proof that goods are stored in a certified warehouse, there must of course be warehouses and operators available that meet certain quality standards. All goods must be well inspected and validated before entering the warehouse. Therefore, an infrastructure of trusted warehouse operators plays a key role in the loan approval process. Financing is short-term, aligned with the commodity's storage life and market cycles. Since the value of the collateral is subject to market price fluctuations, loan terms or margin calls may be triggered.

Warehouse receipt finance requires a robust legal and regulatory system to enforce claims on the collateral in case of default. This, and the lack of qualified warehouses, has hindered the successful introduction of this type of finance in various markets. Finally, this product requires a bit of scale, for instance on a regional or cooperative level (especially for small-scale farmers), to make things work financially. Because of the required scale, level of risk management,

administrative systems and more innovative underwriting methodologies, this instrument is typically seen with intermediate and advanced NDBs (archetypes 4-9).

6.1.1.4 *Group lending*

Another special category of seasonal loans are group loans to smallholder farmers. They are a widely used financial mechanism, especially in developing regions, to overcome barriers to credit access. Most group lending schemes apply a collective guarantee model. It means that farmers form groups (often 5–20 members) and jointly guarantee each other's loans, i.e. joint liability. It reduces the need for traditional collateral, which many smallholders lack, and it encourages peer accountability and repayment discipline. To increase social cohesion, group members preferably already have mutual ties, such as membership of a farmers' union, a cooperative or an association.

Group lending is specifically targeted at resource-constrained farmers, considered unbankable by formal financial institutions due to their low income or lack of assets/collateral. It is often perceived as a tool for poverty alleviation and financial inclusion. Group lending is characterised by smaller loan tickets. Loan amounts are typically modest due to perceived risk of default. While this limits investment potential, it also reduces exposure for lenders such as NDBs or microfinance institutions. Group members monitor each other's farming activities and repayment behaviour through social pressure and peer monitoring. Social cohesion and trust within the group are critical for success. Depending on culture and specific circumstances, the inability to repay their loan may lead to farmers experiencing serious social consequences such as out casting. Repayment schedules may align with crop cycles (e.g. post-harvest) and therefore allow for flexible lending terms. Some models deduct loan repayments directly from crop sales via aggregators or processors. Group lending instruments can be expected at all types of NDB archetypes, where the level of digitalization may vary in the design and implementation of the product.

Participation tends to be higher among poorer farmers with fewer assets and lower household expenses. Another socioeconomic implication regarding group loans is that they can foster collective action, improve bargaining power, and enhance access to markets and inputs.

6.1.1.5 *Association-based lending*

A special form of group lending is association-based lending or cooperative credit. For these instruments, the farmers are formally organized into a legal entity, often an association or cooperative. The legal entity then acts as an intermediary between its members and financial institutions and redistributes the loan among its members. This requires the association/cooperative to have a proper loan administration in place.

Similar to Group lending, association-based lending uses the intimacy between an association/cooperative and its members to reduce risk of default. Since the association knows its members much better than the FI, this improves the assessment of credit worthiness and strengthens repayment behaviour. The key to success of this instrument is the level of professionalism of a cooperative/association. If the organisation is not mature or professional enough, it can come with a risk of lacking administration or even cronyism or nepotism between management and certain members.

Following the membership of an agricultural association or cooperative, lending can be bundled with integrated support services such as agricultural training, input supply (seeds, fertilizer) and market access. This will help improve productivity and repayment capacity. Sometimes additional risk-sharing mechanisms come into play, for instance when value chain actors (e.g., buyers or input suppliers) partly share the financial risk through a guarantee that they provide. This encourages broader participation and sustainability of the lending system.

Both group lending and association-based lending can significantly reduce distribution costs for FIs, while at the same time increasing their outreach into rural areas, leveraging on the networks and strengths of these rural organisations. This instrument can be suitable for all types of NDB archetypes.

6.1.1.6 *Investment loans*

Investment loans for smallholder farmers differ from seasonal loans in that they are designed to support long-term improvements in agricultural productivity and sustainability. These loans help farmers move beyond subsistence farming and invest in assets that can transform their operations.

The purpose and use of investment loans is the acquisition of assets. Durable goods can be purchased like tractors, irrigation systems, greenhouses, or livestock. Or investments can be made in infrastructure or land such as the build of storage facilities, fencing, acquisition of land or farm buildings. More innovation-driven investments can be made, e.g. precision agriculture tools, solar-powered equipment or mobile-based farm management systems.

The loan duration tends to be medium to long-term. They will typically range from 1 to 7 years, depending on the asset's lifespan and expected return. A structured repayment scheme often includes instalment payments spread over several seasons. The repayment terms are instalment-based: monthly, quarterly, or seasonal payments depending on cash flow of the end-beneficiary. It is not uncommon to incorporate grace periods. A delay before repayment begins, allows time for the investment to generate returns.

Collateral and guarantees are typically asset-backed. The purchased assets may serve as collateral. Alternatively, group guarantees, co-signers, or future income projections may be used when formal collateral is unavailable. Interest rates tend to be lower than for seasonal loans, due to more security and potential for income generation. Rates can be both variable or fixed depending on the lender and economic conditions. Risk management is very much based on business planning and cashflow projections. Farmers may need to submit a basic investment plan or feasibility study. The appraisal of loan applications can therefore be tiresome, lengthy and costly. Eventually, loans may be bundled with insurance on the collateral to protect against loss.

Capacity building will normally be a key issue when providing investment loans to smallholder farmers since the take-up of an investment loan can mean that these farmers are about to outgrow their status to mid-sized farmers. To familiarize them on this journey, training and advisory services, often paired with financial literacy, technical training, or mentorship to ensure successful implementation will come to good use. Lenders may track progress to ensure the investment is yielding the expected benefit with an adequate monitoring and evaluation system in place. Since integration with non-financial services is key to the effectiveness of investment loans, most effective implementation is typically expected at NDBs with intermediate to advanced maturity levels (archetypes 4-9).

6.1.1.7 Financial lease or hire-purchase schemes

Financial lease can be considered an alternate way to finance asset investments. In many agricultural markets there's a great and growing need to invest in agricultural equipment like two-wheel tractors (power tillers), manual and motorized planter, smart irrigation systems, mini tractors for tilling and hauling, solar-powered cold storage units et cetera. Yet, without a proper track record, full land ownership or collateral, it becomes difficult for farmers to purchase this equipment.

Financial lease, or hire-purchase schemes, may bring a solution to this problem, especially with the involvement of nearby agro-dealers operating in the value chain. NDBs or commercial banks could consider financing solid agro-dealers, taking the equipment into account as collateral. The agro-dealers on their part operate as a lessor of this equipment to smallholder farmers. The farmers would have to make regular payments for using the equipment, sometimes after making a small initial deposit, and would obtain full ownerships of this equipment after a pre-agreed period.

Effectiveness of financial leasing structures is heavily dependent on fiscal regulation in a country. In some countries' fiscal regulation, interest payments for loans are considered tax-deductible, whereas leasing payments are not. In addition, the maturity level of the NDB also determines the effectiveness of this product. Whereby typically intermediate to advanced NDBs (archetypes 4-9) can be successful in offering these instruments to the market.

6.1.2 Enabling factors

6.1.2.1 Product characteristics

NDBs can offer loans either directly or indirectly towards their end beneficiary. As mentioned in our inception report, both come with advantages and disadvantages. Direct lending allows NDBs to target the most vulnerable segments that other types of FIs would not target, but comes with high operational costs and risks. Indirect lending allows NDBs to reach a broad and diverse range of end-beneficiaries without high operational costs. At the same time, this requires the onboarding of a wide range of financial intermediaries, varying in terms of size and professionalism, and therewith needed approach. Depending on the type of lending, we suggest the product characteristics as described below.

6.1.2.1.1 *Direct lending*

If an NDB provides a direct lending product, it provides banking services to end-beneficiaries in the country. We recommend that an NDB should therefore also position itself as such. We cannot make concrete recommendations for interest rates, as these depend on the market and differ from country to country and can come with certain restrictions. In Ecuador and Bolivia for example, the government has placed maximum interest rate caps for lending to underserved segments such as agriculture and small businesses. Even though these measures are often taken with the right intentions, interest rate caps lead to reduced margins on lending, which can result in credit rationing by FIs, limit lending to higher-risk small-scale farmers and restrict proper risk-based pricing mechanisms of FIs.

As a general advice, we recommend NDBs to follow general banking principles in their pricing strategy, rather than acting as a non-profit institution. The pricing strategy should be based on risk-based pricing models that differentiate interest rates by borrower segment. Proxy indicators such as repayment history, sector volatility, and size can assess risk- and return levels and suggest appropriate interest rates accordingly.

In their pricing strategy, we encourage NDBs to avoid market distortion. While concessional loans are crucial to enhance financial inclusion for underserved segments, the pricing for larger, less-risky segments should be aligned with market benchmarks. Moreover, it should always be checked whether concessional lending is well matched with the challenges to be solved. Crowding out private lenders should not be a consequence of an NDB's presence.

An interesting example of a performance-based pricing model comes from NABARD in India. Through its linked incentive schemes, farmer groups or cooperatives receive an interest rebate (up to 3%) if their loans are repaid in a timely manner. These pricing models are often targeted at the least included market segments to stimulate good repayment behaviour as a form of financial education.

Additionally, we recommend refraining from extremely low interest rates, such as the 1% rate offered by BanEcuador, or the 0.5% by BDP. In the case of BDP, this rate is within the framework of an independent trust called FIREFIN, with BDP acting as a trustee. BDP's operating costs associated with the administration of FIREFIN are covered by a trust fee charged directly to this independent trust. For BanEcuador, this gap (15%) was filled by additional funding from the Ministry of Agriculture, but the product has led to high NPLs as many end beneficiaries perceived it as a grant rather than a loan, therewith decreasing their motivation to repay. Such low interest rates in our opinion do not contribute to financial inclusion on the longer term, as it does not prepare end beneficiaries to develop and become part of the broader financial system. End beneficiaries that were interviewed as part of this phase were not keen to move from their 0.5% or 1% credit product to other products with higher (market based) interest rates, as this would disturb their revenue model.

6.1.2.1.2 *Indirect lending*

For indirect lending through financial intermediaries, we recommend adopting a flexible pricing approach similar to that of FIRA (Mexico). Rather than imposing a cap on interest rates, FIRA allows financial intermediaries to set rates based on market dynamics and borrower segment characteristics. This market-driven strategy has proven effective: FIRA is widely regarded as a preferred funding source among FIs in Mexico, particularly non-bank financial institutions that lack access to low-cost funding due to their inability to attract savings.

Banks and financial cooperatives, while able to mobilize savings, often do so at shorter tenors than those offered by FIRA. As a result, when financing CAPEX for farmers – where longer-term credit is essential – these institutions turn to FIRA for funding. This approach not only supports financial inclusion but also ensures that pricing reflects actual market conditions, thereby promoting sustainability and reducing the risk of misaligned incentives.

6.1.2.2 *Process*

During the country visits, we noted that in most countries, commercial banks' credit processes are much faster than those of NDBs. In direct lending to SMEs for example, in Ecuador we noticed a difference of 24-hour approval at commercial banks, and a minimum of 10 business days at BanEcuador. To optimize the process and serve end beneficiaries in an effective manner, we recommend the processes as described below, based on a combination of lessons learned seen in Colombia, Mexico, and Pakistan.

6.1.2.2.1 *Direct lending*

The below steps show the recommended process for direct lending of NDBs, while considering the capacities of NDBs we visited as part of the program to determine what is realistic and prudent.

1. The clients can find all available credit products, including terms and conditions, online on the NDB's website. Here is also mentioned which required information should be submitted by the client for a credit application.
2. In an application from the NDB, clients can do a pre-screening or eligibility check to self-assess whether they meet basic criteria before submitting full documentation. As a complementary element, a brief onboarding session or digital module is offered on loan management, repayment schedules, and financial literacy.
3. The client has the opportunity to provide required information virtually through a digital application from the NDB. If preferred, another option is to bring the documents to the branch or agency in person. The required documentation includes photos of the clients' activities.
4. The NDB visits the client to verify whether submitted documentation is in line with the reality.
5. A preliminary credit score or risk rating is generated based on the information that is entered into the system by the client.
6. The documentation and preliminary credit recommendation is validated and analysed by the branch staff.
7. Depending on the amount and corresponding decision threshold, the authorized level approves or disapproves the credit.
8. The client is informed through the application and/or SMS about the final decision.
9. If the credit is approved, the client is requested to sign the loan agreement.
10. The loan gets disbursed to the client's account.
11. For large clients, a semi-annual review should be conducted. For micro clients, a random assessment of the portfolio should be carried out. Additionally, a data-driven early warning system flags potential repayment risks, allowing the branch to proactively engage before defaults occur.

6.1.2.2.2 *Indirect lending*

The below steps show the recommended process for direct lending of NDBs, while considering the capacities of NDBs we visited as part of the program to determine what is realistic and prudent. The process is largely based on best practices of FIRA, combined with insights from BDP and FINAGRO.

1. If a financial intermediary wishes to access resources from the NDB, a legal and financial analysis is conducted by the NDB. Limitations/restrictions for authorization may include:
 - a. A limit for NPLs in the portfolio of FIs
 - b. A requirement that the intermediary does not have negative cumulative profitability in the last three months, amongst other financial ratios.
 - c. Regulations, bylaws, powers of attorney are required.
2. Once the information collection is complete, the legal- and risk departments of the NDB present the applying FI to an internal committee including a recommendation regarding approval.
3. Once approved, a framework agreement is signed, which determines the limit on the resources to be granted to the FI, and the purpose (sector, segments, ticket sizes) for which it should be used.¹²
4. The loan is disbursed all at once to the FI.
5. FIs are given a deadline (depending on the amount and scope) to place the amount coming from the NDB. For on-lending the credit to end- beneficiaries, FIs follow their internal credit process.
6. FIs must submit a portfolio report, including where they are investing, at what interest rate, and the performance of the loans.

¹² Specific example from BDP: The limit that can be granted is 1x the regulatory capital of the NDB or 2x the regulatory capital of the FI (whichever is less). Of the total amount requested by the FI, the FI must provide 20% of its own contribution.

6.1.2.3 *Distribution channels and -strategies*

With indirect lending, the effectiveness of concessional loans depends heavily on the distribution capacity and outreach of intermediaries. NDBs should prioritize partnerships with a diverse range of intermediaries, including commercial banks, financial cooperatives, and non-bank financial institutions. The NDB should ensure broad geographic and demographic coverage throughout the country. The NDB can focus on delivering economies of scale for intermediaries through (agricultural) sector knowledge, taxonomy (e.g., sustainable finance), climate risk information, money laundering monitoring capabilities, and innovation.

In direct lending, NDBs should focus on filling the gap by being present in areas where other types of financial institutions are not present. So it is recommended to focus less on (semi-)urban areas, and more on remote rural areas. To decrease the operational pressure, NDBs can work together with agents who interact with clients on the NDBs' behalf. These agents can consist of one-stop-shops, post offices, and input suppliers.

6.1.2.4 *Policy and regulation*

NDBs must operate within a clearly defined legal mandate that allows them to offer concessional loans. This includes the authority to set below-market interest rates, and the permission to operate as first-tier and/or second-tier lenders.

Looking at interest rates, in some countries governments impose interest rate ceilings for priority sectors such as agriculture. While these can support inclusion, they may also limit financial sustainability if not set realistically or accompanied by subsidies or cost-recovery mechanisms. We suggest that NDBs should advocate for flexible pricing frameworks that allow risk-based pricing and avoid crowding out private lenders.

When NDBs lend through financial intermediaries, regulations must ensure eligibility criteria, clear rules for on-lending terms and target segments, and mechanisms for monitoring and reporting loan replacement and performance.

6.1.3 **Potential role for MDBs and public institutions**

When it comes to concessional loans, NDBs often face challenges related to capital adequacy, operational capacity, and impact measurement. MDBs and public institutions can support in various ways as listed below.

- **Concessional funding:** provide low-interest or grant-based capital to NDBs, enabling them to offer affordable loans to underserved segments. A concrete example comes from IFAD who provided concessional funding to the Agricultural Development Bank of Ghana (ADB Ghana), under the rural enterprises program. The concessional capital enabled ADB Ghana to offer low-interest loans tailored to agricultural cycles and rural needs.¹³ An example from LAC was showcased in Bolivia, where CAF approved a USD 10 million concessional line of credit to strengthen BDP's development portfolio. The credit line was revolving and offered on preferential terms, enabling BDP to provide loans to its clients at preferential rates. CAF also owns 20% of BDP, reinforcing its role as a strategic partner in promoting inclusive and sustainable finance.¹⁴
- **Support on building strong value chain financing (VCF) structures** can be a very effective way for MDBs (Multilateral Development Banks) to support NDBs. This can be done through financial instruments like concessional funding as part of blended finance structures in the value chain and/or through grants for TA to structure value chain finance solutions and/or build required infrastructure to make VCF effective (e.g. warehouses).
- **Technical assistance:** support the design and implementation of bundled products that combine loans with agronomic advice and/or digital literacy. For indirect lending, training can be offered that focuses on advisory services to intermediaries regarding agricultural lending and risk assessment.

¹³ Source: FERDI, 2025. Mapping financial support from major multilateral development banks to public development banks.

¹⁴ Source: CAF, 2019. [CAF Approves \\$10 Million Line of Credit to Strengthen the Productive Development Bank of Bolivia.](#)

- Digital infrastructure: help NDBs (and their intermediaries) develop digital loan origination platforms, credit scoring tools, and farmer registries to improve efficiency and outreach. For example, the Inter-American Development Bank (IDB) supported Banco do Nordeste in Brazil in developing a digital loan origination platform and credit scoring tools for rural clients. The digital infrastructure reduced processing time and improved access to finance for small-scale farmers.¹⁵
- Policy alignment: work with governments to embed concessional loan programs into national agricultural strategies, ensuring long-term support. In Kenya and Rwanda, Climate Policy Initiative and the ClimateShot Investor Coalition worked with governments and NDBs to embed concessional loan programs into national agricultural strategies, particularly for climate-smart agriculture. This ensured long-term support and policy coherence.¹⁶

6.2 Credit guarantees for financial intermediaries

Challenge	Social- and institutional hurdles	Infrastructure- and market access imperfections	Environmental- and climate change	Knowledge- and technology gaps	Limited access to finance
Can the challenge be solved by this solution?					

6.2.1 Context

Credit guarantees are financial instruments where a third party such as an NDB promises to cover a portion of a loan if the borrower defaults. Credit guarantees are a cornerstone financial instrument for national development banks (NDBs) aiming to unlock access to finance for smallholder farmers. Credit guarantees are only issued by second-tier NDBs to their financial intermediaries. When it comes to first-tier NDBs, these can only be a user of credit guarantees issued by e.g. multilateral development banks.

Credit guarantees reduce the perceived credit risk by assuring lenders that a portion of the loan will be repaid even if the borrower defaults. This risk-sharing mechanism makes financial institutions more willing to lend to farmers they would otherwise reject. Since NDBs typically have limited resources, this is an interesting instrument because by using guarantees, they leverage private sector funds rather than directly lending themselves. This multiplies their impact. One dollar of guarantee can unlock several dollars of commercial lending, and it encourages banks and microfinance institutions to enter agricultural lending markets. Moreover, when financial intermediaries are also charged a cost for the use of the guarantee by the NDB (e.g. a percentage of loan amount guaranteed), a revolving characteristic is added to the instrument. This allows for a structural increase of the funds that underpin the guarantee product which should at least offset the incurred losses, thereby further increasing the leverage for the NDB. An important condition to take in mind is that there has to be sufficient liquidity in the market for credit guarantees to be impactful. When there is a lack of liquidity, private sector banks will have low appetite to provide credit to lower income segments, regardless of the availability of credit guarantees.

Another important condition regarding the effectiveness of credit guarantees is the coverage. Overall, it can be stated that guarantee coverage should not exceed 50% of the total outstanding loan principal amount of the portfolio of a

¹⁵ Source: Momentus, IFAD & IDB, 2023. Food Systems Finance for Resilient Futures: An MDB and NDB Collaboration Roadmap.

¹⁶ Source: Climate Policy Initiative & ISF Advisors, 2025. Blended Finance for Climate-Smart Agrifood Systems: A playbook for concessional capital providers.

local financial institution. The remainder, borne by the local financial institution, ensures commitment and reduces the chances of moral hazard.

Credit guarantees help overcome structural barriers that exclude smallholders from formal finance. They allow banks to experiment with new borrower segments and they incentivize banks to develop tailored products for agriculture. This may include the promotion of services to women, youth, and marginalized groups. As a result, farmers who were previously invisible to the financial system become active participants in the economy. In short: credit guarantees can catalyse financial inclusion. Various structures of guarantees exist, all solving different types of challenges. Because of this variety in guarantee structures, they can always be designed to match the maturity level and archetype of an NDB.

6.2.1.1 *First loss guarantee*

First Loss Guarantees are structures where the guarantor absorbs the initial portion of losses (e.g. first 10–30%) in a loan portfolio. This reduces the lender's risk exposure, making them more willing to lend to riskier segments. They enable loans to smallholders who lack collateral or formal credit history and are often used in blended finance models where donors or development agencies provide the first-loss cushion. Considering the challenges as mentioned in chapter 2, this structure works best to solve economic and financial barriers, as well as social and institutional hurdles for early-stage inclusion.

6.2.1.2 *Pari passu guarantee*

A Pari Passu Guarantee is where the guarantor shares losses proportionally with the lender (e.g., 50/50). Here, lenders are encouraged to maintain skin in the game while still reducing their exposure. Considering the distinction between commercial and subsistence farmers as mentioned in chapter 2, these structures seem to be more suitable for more mature agricultural SMEs or farmer cooperatives and are mostly used to scale up lending once lenders are comfortable with the sector.

6.2.1.3 *Progressive guarantee*

Progressive guarantees are risk-sharing mechanisms that are designed to evolve over time, based on the borrower's performance, project milestones or market conditions. The coverage of the progressive guarantee instruments is adjusted dynamically to incentivize good behaviour and reduce moral hazard. When applied to the reality of small-scale farmer finance, it could be translated into a decrease of the guarantee coverage as the farmer builds repayment history or as collateral improves, or when the lender gains better insights in the actual risks. These instruments support in the graduation of financially excluded groups to the formal financial ecosystem, i.e. financial inclusion. FIRA (Mexico) uses these progressive guarantees in combination with technical assistance and climate-smart investments.

6.2.1.4 *Dynamic guarantee*

As the agricultural sector is characterized by volatility, it makes sense to also consider dynamic guarantees. As the name implies, the coverage and/or the premium of these type of guarantees can vary, based on risk factors such as crop cycle, climate risk or price volatility. They can also be linked to performance indicators (e.g. adoption of Good Agricultural Practices or climate-smart practices that increase resilience of farmers or implementation of a credit scoring tool by IFIs) of either end-beneficiaries or intermediaries and are often combined with digital monitoring for real-time adjustments of the guarantee. These instruments are often used to bridge a period of higher risks at the start of a project, that will gradually decline once new measures or systems have been implemented by the end-beneficiary. BNDES (Brazil) has piloted similar schemes for coffee and cacao cooperatives, leveraging dynamic guarantees to crowd-in private FIs.

6.2.1.5 *Portfolio guarantee*

Another guarantee instrument that is often used to stimulate small-scale farmer lending at a larger scale, is a portfolio guarantee. This is a risk-sharing mechanism where an NDB or MDB guarantees a percentage (e.g. 30-50%) of a lender's portfolio of loans to small-scale farmers. The main differentiator is that this instrument covers a portion of losses across the entire loan portfolio, not just individual loans. This significantly reduces the operating costs for both parties, as compared to individual guarantees. Therefore it is often applied to encourage lenders to scale up their (rural) lending

programs, since it reduces their exposure while the risks are shared between the guarantor and the FI across the entire portfolio. An example of this instrument is the Portfolio Guarantee for Agricultural Finance that is offered by IDB across Latin America to NDBs and local FIs.

6.2.1.6 *Risk-sharing facility*

Risk-Sharing Facilities offer a broader structure where multiple parties (donors, DFIs, banks) share credit risk. They diversify risk and attract commercial capital. And as such they're often used in regional or national agricultural finance programs. Like the other structures, they can include TA to improve farmer productivity and repayment capacity. Looking at the various categories of challenges, risk-sharing facilities are often applied to target environmental and climate challenges, infrastructure and market access, and social and institutional hurdles for systemic change.

Throughout the solution design phase, we have reviewed credit guarantees offered by FIRA, FINAGRO, FMO, SBP, amongst others. In this toolkit, we combine all lessons learned.

6.2.2 **Enabling factors**

6.2.2.1 *Product characteristics*

We suggest coverage of guarantees should always be partial, ranging 10%-90% of the loan amount, therewith also granting a sense of ownership to the IFI. A guarantee product should be flexible to cater to different borrower profiles. This can be done by offering various modalities of which the IFI can choose during the application. Modalities can focus on financial inclusion of priority populations; medium-sized agri enterprises; agriculture modernization; sustainable productive territories; large companies with a low probability of default.

To fund guarantees, NDBs typically charge a premium of 1-3% to the IFI, depending on the risk of the borrower. A borrower with a higher risk profile usually results in a higher premium. Keeping the end objective of financial inclusion and serving small-scale farmers in mind, we argue that this premium should not be channelled through to the end beneficiary, but rather paid by the IFI.

NDBs may allocate a portion of their annual profits or reserves to their guarantee fund. An example of this is FINAGRO, who assigns 25% of its annual profits to capitalize its guarantee instrument FAG.

6.2.2.2 *Process*

We suggest the application process for a credit guarantee to be as follows.

1. Interested IFIs are screened in a selection process by the NDB, which results in a risk profile of the IFI. Minimum requirements for IFI should be made clear upfront.
2. A producer is applying for credit at an intermediary financial institution (IFI).
3. The IFI assesses the client's risk following its own processes, and if needed, requests a guarantee from the NDB. The IFI selects the appropriate guarantee product, based on loan size, borrower profile, and sub-sector.
4. The IFI submits a digital application for the guarantee via an integrated digital platform. Ideally, the application software for the guarantee is integrated with the loan origination system of the IFI.
5. The NDB conducts an assessment on 1) project feasibility, 2) repayment capacity, 3) whether the project is in line with eligibility criteria, internal policies, and ESG regulations.
6. If approved, the NDB issues a guarantee certificate to the IFI, in which the guarantee terms are clearly stated. These include the % coverage, duration, premium.
7. The guarantee is registered in a centralized system accessible to both parties.
8. The IFI disburses the loan to the producer.

For the claiming and disbursement process, we suggest the below process.

1. If the borrower defaults, the IFI has a limited timeframe to request payment from the guarantee fund. This encourages timely action, ensures that the guarantee fund is not exposed to indefinite liabilities, and helps the NDB to manage its risk and cash flow more effectively. For short-term loans, a time window of 120 calendar

days is suggested. For long-term loans, we suggest 180 calendar days. If the IFI does not submit the claim within these timeframes, it loses the right to receive the guarantee payment.

2. The amount of the guarantee payable will be the balance of the loan as of the date default is deemed imminent (before maturity), or the balance of the loan as of the maturity date.
3. The guarantee is paid immediately, without any analysis done by the NDB. We have seen that one-day guarantee payment processing builds trust with IFIs, encouraging more IFIs to participate in the guarantee scheme. At the same time, it reduces the administrative burden for the NDB.
4. Once the guarantee has been paid, the IFI is obligated to recover the paid guarantee, as well as to report any late payments to the credit reporting agencies, and, where applicable, the corresponding observation and prevention codes.
5. The NDB can conduct ex-post sample checks on guarantee claims to monitor quality. The frequency of these checks can be determined by the risk profile of the IFI, as determined in the selection process (higher risk, higher frequency of checks).

While loan-by-loan review as described in this section is appropriate during the initial stages of a partnership or for high-risk intermediaries, this approach is not scalable for mature relationships. International best practices and regional experience suggest transitioning to portfolio-level trust mechanisms (as mentioned in section 5.1.2.5) once intermediaries demonstrate a proven track record. Under these arrangements, guarantees are applied to a defined portfolio rather than individual loans, reducing procedural delays. The portfolio guarantee as offered by IDB follows the process as elaborated below.¹⁷

1. The NDB or FI signs a framework agreement with IDB defining portfolio eligibility criteria (loan size, borrower type, sector focus); guarantee coverage percentage and maximum exposure; and reporting and compliance obligations.
2. Initial due diligence assesses the intermediary's financial health, governance, and risk management systems.
3. Once performance and compliance are established, guarantees apply automatically to a pre-agreed portfolio segment.
4. Claims are processed digitally through IDB's guarantee platform.
5. IDB reimburses the guaranteed share of losses upon default, typically within 30-60 days of claim submission.

6.2.2.3 *Distribution channels and -strategies*

Since second-tier NDBs are dependent on IFIs for their distribution channels, using digital means to interact with IFIs is the most preferred channel. However, low uptake of guarantees by IFIs can be a challenge due to their limited understanding of the options and/or conditions. An example can be taken from FIRA here, who publishes transparent criteria on their website.

Additionally, practice has shown that schemes that only provide guarantees often fail. Strong guarantee products are part of broader packages, where guarantees are coupled with financial literacy training, business planning support, agricultural extension services, and insurance.

6.2.2.4 *Policy and regulation*

The legal framework of credit guarantees is essential to ensure their enforceability, transparency, and alignment with national financial regulations. Guarantee instruments of both FIRA and FINAGRO were initiated under a dedicated law, which was subsequently amended to provide direction on the end beneficiaries that could be served under the product.

¹⁷ Source: IADB, 2025. [Guarantees | IDB](#).

For example, FAG was created in 1985, but only in 2000 a new legislation allowed FAG to guarantee agricultural projects, formalising its role in project-based financing.

While the law ensures the overall legality, guarantee agreements are fully formalized through:

- Service contracts between the NDB and financial intermediaries;
- Guarantee certificates specifying coverage, terms, and obligations;
- Credit line contracts if guarantees are linked to NDB funding.

6.2.3 Potential role for MDBs and public institutions

Multilateral institutions can enhance the effectiveness of credit guarantee schemes offered by NDBs. They do so by providing concessional funding to capitalize guarantee funds and offering first-loss coverage to de-risk lending to underserved segments. World Bank Group's guarantee platform, launched in 2024, consolidates guarantee products across the World Bank, IFC, and MIGA into a single system. This platform enables NDBs to access tailored credit guarantees, including partial credit and political risk guarantees.¹⁸

Additionally, MDBs can support the development of agile processes and digital platforms for guarantee administration and monitoring. While we could not find a specific example of this support towards NDBs, World Bank's AgriFin program has helped financial institutions automate rural banking operations and integrate credit bureaus, improving the reach and efficiency of guarantee schemes in remote areas.¹⁹

Next to that, MDBs contribute TA to help NDBs design guarantee products tailored to the needs of small-scale farmers. This includes support for gender-sensitive and climate-resilient financing solutions.

Moreover, the convening power of these MDBs enables NDBs to foster multi-stakeholder partnerships, bringing together NDBs, financial intermediaries, and government agencies to align efforts and scale impact. Other public actors, such as ministries of agriculture and finance can play a complementary role by embedding guarantee schemes into national agricultural strategies, providing regulatory support, and ensuring policy coherence. They can also contribute to data infrastructure, such as farmer registries and credit reporting systems, which are key for risk assessment and impact measurement.

6.2.4 Special note on moral hazard risks

As mentioned in the previous paragraphs, guarantees -in various shapes and forms- can reduce risks for Financial Institutions, lower lending costs, and can promote credit distribution towards (perceived) higher risk segments and sectors. While this instrument can be highly effective, it is worthwhile to highlight that moral hazard risks may be triggered with these instruments.

- In relation to the end **borrower**: being aware of the fact that a guarantee is in place, the borrower may be incentivised not repay the loan (in full).
 - Possible mitigation of this risk can be achieved by not disclosing the guarantee to the borrower (provided that this legally allowed within the country of operation).
- In relation to the **lender**: The financial institution may be inclined to draw on the credit guarantee, rather than pursuing full repayment by the borrower, as it might be easier and cheaper to draw on the guarantee. In addition, this option it doesn't harm the customer relationship of the FI in the short term.

¹⁸ Source: World Bank Group, 2024. [World Bank Group Guarantees Platform](#).

¹⁹ Source: World Bank Group, 2017. Credit Guarantee Schemes for Agricultural Development.

- Possible mitigation of this risk can be achieved by only guaranteeing part of unrecoverable amount of the loan. The pay-out mechanism can be instant (as per section 5.2.2.2), but final settlement will be based on an ex-post calculation.

6.3 Insurance

Challenge	Social- and institutional hurdles	Infrastructure- and market access imperfections	Environmental- and climate change	Knowledge- and technology gaps	Limited access to finance
Can the challenge be solved by this solution?					

6.3.1 Context

Risk and insurance integration can take place by incorporating weather-indexed insurance. Bundling seasonal loans with crop insurance mitigates climate risks. On the other hand, risk-sharing models such as partnerships with agribusinesses or cooperatives can reduce lender exposure.

As stated in chapter 2, small-scale farmers face a complex web of risk, erratic weather, pests, price volatility and limited access to capital, that undermine their productivity and incomes. Without reliable risk-management tools, many farmers remain excluded from formal finance, trapping them in subsistence cycles. Insurance products, when offered through National Development Banks, can break this cycle by providing a safety net that both protects farmers and makes lending to them more attractive.

NDBs play a vital role in agricultural finance, channelling nearly two-thirds of global agricultural funding and deploying an estimated USD 160 billion into rural economies in 2022. Yet fewer than 20 percent of smallholder farmers benefit from any form of agricultural insurance, and less than 10 percent of these banks currently integrate insurance into their portfolios.²⁰ By expanding insurance offerings, development banks can shield farmers from climate shocks—droughts, floods or irregular rainfall—and reduce the credit risk associated with lending in volatile environments.

One of the most promising products is weather index insurance, which pays out automatically when a predefined weather index—such as cumulative rainfall or temperature thresholds—is breached.²¹ This approach eliminates time-consuming loss assessments, lowers administrative costs and speeds up payouts. For farmers, it means timely compensation after a bad season; for banks, it means a lower probability of loan defaults because insurance proceeds can be channelled directly toward outstanding debts or reinvestment in the next planting cycle.

Beyond weather-based covers, NDBs can offer area-yield and multi-peril crop insurance. Area-yield schemes pool risk across a region: if overall production dips below a trigger, all insured farmers receive a payout, regardless of individual losses. Multi-peril policies combine protection against a range of hazards (e.g. pests, plant disease and extreme weather) into a single premium. Together, these products boost farmers’ liquidity when they need it most, allowing them to purchase quality seeds, fertilizers and equipment, thereby enhancing productivity and resilience.

²⁰ Source: UNDP, 2025. How public development banks can use insurance to de-risk agricultural lending.

²¹ Source: GSMA, 2024. De-risking smallholder farmers lending: How weather index insurance can improve access to credit.

To successfully deploy insurance at scale, banks must align their internal strategies and build capacity. Leadership commitment, staff training in actuarial methods and streamlined claims processes are essential. Bundling insurance with existing credit or input-supply schemes simplifies delivery and improves uptake, while partnerships with private insurers and technology providers can defray costs and foster innovation. Lastly, subsidies or premium support—targeted at the most vulnerable—can kick-start participation until risk pooling mechanisms mature.

By embedding well-designed insurance products into their lending models, NDBs can transform the financing landscape for small-scale farmers. They not only safeguard rural livelihoods against the growing threat of climate change but also cultivate a more creditworthy client base, unlocking greater agricultural investment and fostering sustainable rural development.

6.3.2 Enabling factors

6.3.2.1 *Product characteristics*

There are many types of insurance available, but in this section, we focus on a) Insurance in combination with preventive measures, and b) Parametric or index insurance.

6.3.2.1.1 *Embedded insurance*

To safeguard the livelihoods of marginal farmers engaged in animal husbandry, PKSF, in partnership with the Asian Development Bank (ADB), launched a Livestock Insurance Scheme in Bangladesh. This initiative aims to reduce farmers' vulnerability to risks such as disease outbreaks and natural disasters, which often lead to significant financial losses.

Initially piloted in 2010, the scheme involved 40 MFIs and nearly 3,000 branches. It was structured around four key components:

1. Market assessment and product development
2. Strengthening the policy, legal, and regulatory framework
3. Awareness creation and capacity building
4. Implementation of the microinsurance pilot

Having moved beyond the pilot phase, the scheme is now a regular part of PKSF's operations.

Farmers access the insurance by paying a premium when they take out a loan through one of the participating MFIs. What sets this model apart is its integration of preventive services alongside insurance coverage. In addition to financial protection, farmers receive access to vaccination programs, veterinary care, and feed advisory services. Each insured animal is issued a health card, documenting vaccinations, check-ups, and insurance details. These services are delivered in collaboration with government agencies and research institutions affiliated with PKSF, helping to reduce both pre- and post-event risks.

6.3.2.1.2 *Parametric insurance*

Pula is a pioneering Insurtech company operating at the intersection of agriculture, technology, and insurance. Central to its innovative approach is the Area Yield Index Insurance (AYII), which protects farmers against low yields by using historical yield data and weather indices to trigger timely payouts at the end of the season. This model enables farmers to invest confidently in their farms, adopt improved practices, and build long-term resilience to climate risks. Operating in 22 countries across four continents, Pula has insured over 20 million smallholder farmers. Its extensive network includes partnerships with farmer organizations, insurers, governments, and development agencies.²²

²² Source: Pula, 2025. [ABOUT | PULA](#).

A key example of Pula's private sector collaboration is its partnership with the Bayer Foundation, which provided a €10 million grant to support insurance premiums. This initiative aims to unlock up to USD 127 million in insurance coverage for 10 million farmers across countries such as Bangladesh, Pakistan, Malawi, Ghana, Nigeria, Kenya, and Mali, in coordination with national governments.²³ Pula also works closely with agri-tech companies like Apollo Agriculture to bundle insurance with essential farming inputs, such as high-quality seeds and fertilizers, often provided on credit. This integrated approach reduces the financial risks of input investments and empowers farmers to adopt more productive and sustainable farming methods.²⁴

Another example of parametric or index insurance is offered by the Philippine Crop Insurance Corporation (PCIC). The government-owned PCIC is the primary provider of agricultural insurance in the Philippines, with a major focus on rice and corn farmers. PCIC recently launched a parametric insurance product that uses satellite data and weather indices (e.g., typhoon paths, wind speeds) to quickly assess damage and release payouts within 3–5 days after a disaster. While still in its early stages, this initiative shows promising potential to enhance the speed and efficiency of insurance support for farmers.²⁵

It's important to note that parametric insurance typically complements traditional insurance²⁶, as each serves a distinct purpose. Traditional insurance compensates farmers for verified, localized losses - such as pest damage or small-scale flooding - while parametric insurance targets systemic risks that affect entire regions, like widespread drought or prolonged adverse weather. For smallholder farmers, who often face severe liquidity constraints when disasters strike, parametric insurance offers rapid payouts that help them recover quickly and avoid loan defaults. At the same time, traditional coverage ensures fairness by addressing localized losses that parametric triggers might overlook. Because complex insurance products can be difficult to understand in low-literacy environments, hybrid models that bundle both approaches simplify the experience, giving farmers confidence that they are protected against both widespread disasters and localized events without navigating multiple policies.

6.3.2.2 Process

The application and payout process for PKSF's Livestock Insurance Scheme is structured as presented below.

Policy enrolment:

- Farmers participating in the beef fattening program are required to purchase livestock insurance.
- The insurance premium is 0.7% of the loan amount per cattle, paid at the start of the loan cycle.
- Additionally, borrowers could opt for a life insurance against an additional payment of 0.3% of loan as premium.

Coverage period:

- The insurance covers a six-month period, aligning with the typical beef fattening cycle.
- It protects against conventional mortality and natural catastrophes or epidemics.

Claim trigger:

- If the insured cattle dies during the coverage period due to covered risks, the insurance is triggered.
- The farmer must report the incident to the partner MFI.

²³ Source: Bayer Foundation, 2025. [Partnership with Pula Foundation: Insuring 10 Million smallholder farmers across Africa & Asia | Bayer Foundation](#).

²⁴ Source: UNSGA, 2023. [Empowering Kenyan Smallholder Farmers: Pula's Game-Changing Digital Insurance | United Nations | UNSGSA Queen Máxima](#).

²⁵ Source: Department of Agriculture, 2025. [PCIC launches parametric insurance to expedite claims payouts | Official Portal of the Department of Agriculture](#).

²⁶ Source: FAO, 2024. [5.2 Innovative financing approaches and tools to bridge the financing gap for SDG Targets 2.1 and 2.2](#).

Claim verification:

- The MFI verifies the claim, often with support from veterinary professionals and health card records (which track vaccinations, check-ups, and health status).
- Proper documentation and adherence to cattle care protocols (e.g., vaccinations, feeding, housing) are essential for claim approval.

Payout mechanism:

- Upon verification, 100% of the outstanding loan amount is waived by the MFI.
- The payout is made directly to the farmer through the MFI.

Covariant Risk Fund (CRF):

- In the event of catastrophic losses (e.g., widespread disease or disaster), MFIs can claim from the CRF established by PKSf.
- This fund acts as a substitute for reinsurance, ensuring MFIs can still compensate farmers even during large-scale events.

For Pula the application and to some extent the payout process may differ depending on the implementing partners, but in general, the following steps are as presented below.

Application process:

- **Bundled with inputs:** Pula's AYII is often bundled with agricultural inputs such as seeds and fertilizers. Farmers receive insurance coverage automatically when they purchase these inputs, often through partner organizations like agri-input suppliers, microfinance institutions, or government subsidy programs.
- **Farmer registration:** farmers are registered into the insurance scheme through Pula's partners. During registration, key data is collected, including farmer identity and contact details, farm location (geo-tagged), crop type and area planted.
- **Premium payment:** the insurance premium is typically embedded in the cost of the input package or subsidized by governments or development partners.

Payout process:

- Throughout the growing season Pula monitors the yield through satellite imagery, agro-ecological zone (AEZ) data and ground-truthing surveys.
- At the end of the growing season, actuals yields in an AEZ are compared to a historical benchmark yield. If the yield falls below a set threshold, a payout is triggered.
- Payouts are made automatically to eligible farmers and can happen in cash or in-kind (agri inputs for the next season).

6.3.2.3 *Distribution channels and strategies*

NDBs often have deep reach into rural and underserved areas through their lending programs, making them ideal partners for distributing insurance products, particularly to smallholder farmers and agri-MSMEs. Also, in the case of PKSf, insurance can be bundled with loans, de-risking both the financial institution and the borrower. Traditionally, however, the claims process in such models can be time-consuming and burdensome for both parties. However, parametric insurance is gaining ground due to technological advancements and a higher demand for tailored insurance products due to the increasing frequency of climate-related events. Parametric insurance offers fast, transparent payouts without the need for lengthy assessments. Given these advantages, NDBs could play a strategic role in scaling such innovations by partnering with insurers to deliver more efficient insurance solutions.

6.3.2.4 *Risk management*

Agricultural insurance can play a transformative role as a credit-enhancement tool by reducing the risks associated with lending to farmers.²⁷ When crops fail due to drought, floods, or other shocks, insurance payouts help farmers meet their loan obligations, which significantly lowers the likelihood of default. This reduction in credit risk allows financial institutions to ease provisioning requirements and free up capital for additional lending. Moreover, insurance can serve as a substitute for traditional collateral, making it possible for smallholders - who often lack land titles or physical assets - to access credit. For this to be effective, the insurance must cover the risks most likely to cause loan defaults.²⁸

6.3.2.5 *Policy and regulation*

At national government level, a clearly defined institutional framework is essential to design and translate agricultural insurance policies into effective action. Market reforms backed by strong regulations and legal frameworks are key to enabling effective collaboration between governments and insurers across the agricultural value chain. These reforms should support innovation, improve access to data for product design, and ensure transparency and consumer protection. Aligning national regulations with global best practices can help scale sustainable insurance solutions.

6.3.3 **Potential role for MDBs and public institutions**

MDBs like the World Bank, IFAD, ADB, and UNDP often fund pilot programs and support the development of innovative insurance products such as index-based or parametric insurance. Additionally, they can help support governments with designing insurance frameworks that align with national priorities. A notable example is the Financial Resilience in Agriculture initiative by UNDP's Insurance and Risk Finance Facility, in collaboration with the Gates Foundation, which provides a structured framework and action plan to help governments institutionalize agricultural insurance.

As high premiums are one of the main hurdles to a wide uptake of agricultural insurance among small-scale farmers, potential support from MDBs and public institutions could focus on ways to lower those premiums over time. In the short run this can be done through insurance premium subsidies, until the uptake of insurances is collectively accepted and thereby leads to reduced (or distributed) risks for the insurance company, which in turn offers opportunities to negotiate lower the insurance premiums. On the other hand, as became clear from the example from Bangladesh, MDBs can also focus on grants for TA that directly reduces risks (e.g. lower mortality rate of livestock through veterinary services) and can thereby offer opportunities to negotiate lower insurance premiums with insurance companies.

6.4 *Risk management for financial instruments*

As mentioned throughout this chapter, it is important for NDBs to ensure their processes for financial instruments are agile and at par with industry standards. When it comes to credit guarantees for example, it is suggested that the guarantee is paid out immediately after a claim. And for credits to smaller segments – both directly and indirectly – the total approval process should not take more than five business days, preferably even real-time.

A way to achieve this is by following FIRA's example, who has established "intermediary faculties" based on risk rating and size of IFIs. Depending on the faculty the IFI is categorised into, the mandate of the IFI is determined, as well as the % of sample checks to be conducted by FIRA.

Sample checks are carried out only after paying the guarantee for a defaulted loan. If the result of a sample check is negative, i.e. the IFI has not correctly carried out its credit process, the payment will need to be recovered by the NDB, with an additional penalty and potential negative consequences for FIRA's internal credit rating of the IFI.

²⁷ Source: UNDP, 2025. [How public development banks can use insurance to de-risk agricultural lending | UNDP IRFF](#)

²⁸ Source: World Bank, 2017. [Does Credit-Linked Agricultural Insurance Work?](#)

The below figure shows how intermediary faculties are categorised at FIRA. Based on credit worthiness, risk rating, and size, IFIs are classified. The figure shows the limits per category. Depending on the average size of IFIs in a country, and the average size of loans and guarantees, a tailored version can be made.

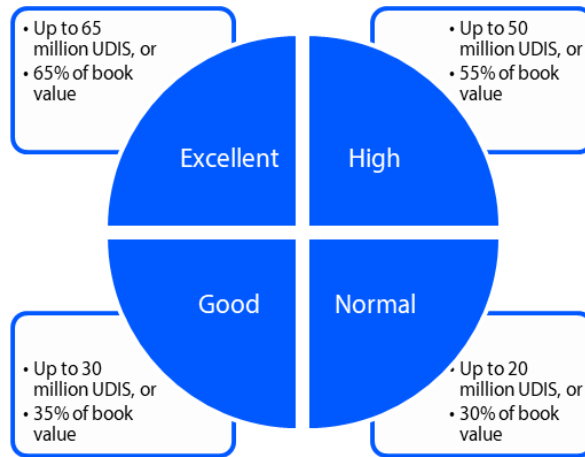


Figure 9: Limits for IFI categories. Source: FIRA, 2025.

Note: UDIS is not a fixed peso amount, but a value that fluctuates with inflation. As of recent data, 1 UDI = 7.9 MXN, though this changes regularly.

6.5 Funding needs and options

To sustain concessional loans, credit guarantees, and insurance offering, NDBs must secure reliable and diversified funding options. The funding structure should be aligned with the tenor and pricing of the credit lines offered. For example, long-tenor concessional loans for CAPEX should be backed by long-term funding sources to avoid asset-liability mismatches. Funding options may include the below.

- Government budget allocations, earmarked for priority sectors such as agriculture or MSMEs.
- Multilateral concessional loans, e.g., from IFAD, IDB, ADB, or World Bank, often linked to specific development outcomes.
- Blended finance structures, where donor grants or first-loss capital are combined with NDB funds to de-risk lending.
- Bond issuance, including green or social bonds, to raise long-term capital for concessional programs.

Since blended finance and bonds are usually more complex to develop, this section further outlines the details and points to consider from an NDB's perspective.

6.5.1 Blended finance

Blended finance is increasingly recognized as a powerful solution for NDBs to support small-scale farmers. By strategically combining concessional public or philanthropic capital with commercial investment, blended finance enables NDBs to extend tailored financial services to smallholders, fostering inclusive growth, sustainable food production, and improved livelihoods. Blended finance helps to contribute to these objectives by de-risking investments and incentivizing private sector participation in agricultural finance.

NDBs are uniquely positioned to deploy blended finance effectively. With their public mandate and local knowledge, NDBs can structure financial instruments that align with smallholders' needs such as seasonal repayment schedules, low-interest loans, and crop insurance. By using concessional capital to absorb first losses or provide guarantees, NDBs reduce the risk for commercial investors, making smallholder lending more attractive and scalable.

Moreover, blended finance allows NDBs to integrate non-financial support into their offerings. TA, capacity building, and digital tools can be bundled with financial instruments to enhance farmers' productivity and financial literacy. For example, a blended finance facility might fund mobile platforms that deliver agronomic advice or market information, helping farmers make informed decisions and access better prices.

Sustainability is another critical dimension. As climate change intensifies, small-scale farmers must adopt resilient and regenerative practices. Blended finance can support this transition by funding climate-smart technologies such as drip irrigation, drought-resistant seeds, and agroforestry systems, which may be unaffordable without concessional support. By linking finance to environmental outcomes, NDBs can promote sustainable food systems while mitigating climate risks.

Importantly, blended finance fosters ecosystem development. It encourages collaboration among donors, investors, agribusinesses, and civil society, creating holistic solutions that address both financial and structural barriers. For instance, blended finance can catalyse investment in rural infrastructure, storage facilities, and value chains that connect smallholders to markets.

In sum, blended finance empowers national development banks in emerging markets to unlock the potential of smallholder farmers. It enables the delivery of customized, affordable, and impactful financial services that drive business growth, enhance food security, and improve incomes. By leveraging this approach, NDBs can transform agriculture from a subsistence activity into a sustainable engine of development.

There's a growing interest of international impact investors to allocate funds towards food security and sustainable food production worldwide. New funds are being established and financially committed to on a weekly basis. Raising funds for these causes however seems to be less of a trouble than identifying viable investment projects. Although some of these funds will have a clear philanthropic nature, the majority is next to impact looking for a minimum of capital preservation. For these foreign investors one of the main obstacles in project identification and assessment is currency risk. Investment projects reaching out to smallholder farmers are always likely to be more risk prone than other projects, so a clear outlook on a positive financial yield is a big plus. But when financial yields need to be converted to hard currencies, the outlook for a fund manager may become negative.

NDBs, for instance through the instruments of multilateral development banks or specialized institutions, would be able to hedge local currency-denominated instruments. This makes projects more attractive and bankable. Some NDBs already collaborate with multilateral development banks or donors to provide guarantees or first-loss capital, which can include currency risk protection.

6.5.2 Bonds

Bonds are increasingly recognized as a strategic funding instrument for NDBs. By issuing bonds – especially thematic ones such as green, social, or gender bonds – NDBs can mobilize long-term capital from domestic and international investors. Usually domestic bonds have shorter tenors between 1.5-5 years, and international bonds have longer tenors of 7-10 years. Unlike donor grants or budget allocations, bonds offer NDBs a market-based mechanism to raise funds at scale, often with longer tenors and more flexible terms.

A strong example comes from FIRA, which has established a Sustainable Bond Framework to issue green, social, and sustainability bonds through its trust funds (FONDO and FEFA). The proceeds are earmarked for projects that contribute to climate resilience, financial inclusion, and socio-economic advancement in rural Mexico. Eligible categories include sustainable agriculture, renewable energy, water management, and access to financial services for smallholder farmers and women-led enterprises. FIRA's framework aligns with international standards such as the Green Bond Principles, Social Bond Principles, and Sustainability Bond Guidelines, and includes mechanisms for project selection, environmental and social risk management, and impact reporting. For example, FIRA commits to annual allocation and impact reports, tracking metrics such as reduced emissions, increased adaptive capacity to climate events, and the number of women receiving credit for the first time.

When structured effectively, bonds can align with national development priorities and SDGs, making them attractive to impact investors and institutional buyers. For example, FIRA has issued green bonds to finance climate-resilient

agriculture, while BDP has explored social bonds to support inclusive rural finance. In such a case, an important prerequisite is that the NDB's law and statutes allow the possibility to attract own funding.

6.5.3 Potential role for MDBs and public institutions

MDBs and public institutions are increasingly partnering with NDBs to scale up blended finance and thematic bond issuance for climate and development goals. In Indonesia and the Philippines, for example, the Asian Development Bank has worked with NDBs to structure blended finance facilities for clean energy and climate resilience. These facilities include first-loss guarantees, concessional debt, and support for project preparation, enabling NDBs to attract private capital for long-tenor infrastructure investments.²⁹

The European Investment Bank (EIB) has supported NDBs in Latin America through initiatives like the Latin American Green Bond Fund, which provides TA and co-financing to help NDBs develop local currency green bonds. This fund has mobilized over USD 2 billion in green investments.³⁰

6.6 Determining effectiveness

To ensure optimal impact of financial instruments, it is important to regularly evaluate the effectiveness and adjust the structure if needed. Based on inputs from the World Bank³¹ and our own additional insights, we suggest the following process to determine effectiveness of a financial instrument.

6.6.1 Define clear objectives and theory of change for the instrument

Here, the target group should be defined in terms of (sub-)sector, ultimate financing objective, size (either of the loan or the income of the end beneficiary), geographical location, and any other special development objectives that this instrument aims to address. In other words: which challenge of the end beneficiary is being addressed?

6.6.2 Financial- and impact indicators

During the design process of the financial instrument, indicators should be determined to measure success on both financial- and impact aspects.

Financial metrics can include:

- Leverage ratio: amount of private capital mobilized per unit of guarantee;
- Default rate: percentage of (guaranteed) loans that default;
- Utilization rate: share of guarantee- or on-lending facility actually used;
- Cost-effectiveness: cost per unit of development impact (e.g. per farmer reached).

Impact metrics include:

- Number of small-scale farmers reached;
- Increase in loan volume and frequency;
- Improvement in loan terms (e.g., interest rate and collateral);
- Changes in farm productivity or income;
- Gender or youth inclusion.

²⁹ Source: GDPC, 2025. Blending from the Ground Up: Multilateral and National Development Bank Collaboration to Scale Climate Finance.

³⁰ Source: La Green, 2025. <https://lagreen.lu>

³¹ Source: World Bank, 2014. Toolkit for Impact Evaluation of Public Credit Guarantee Schemes for SMEs.

Depending on the available capital and objectives of the guarantee, for all indicators clear targets should be set, at least on a yearly basis. This supports the NDB to evaluate the success and adjust certain aspects of the guarantee if needed.

6.6.3 Evaluation methods

To collect data and insights for all indicators, various evaluation methods can be applied. Randomized Control Trials (RCTs) are considered the most reliable method for evaluating impact, as they use random assignment to create statistically identical treatment and control groups, allowing for credible comparisons. However, RCTs require specific conditions such as large participant pools, feasibility of randomization, and compliance, and they can be costly and complex to implement. Encouragement Design is a variation of RCT suitable for programs with voluntary participation or universal coverage, where randomly selected units receive incentives to join the program. Despite their potential, to our knowledge neither RCTs or EDs have been used to evaluate the impact of credit guarantee schemes or concessional loans.

When randomized experiments are not feasible, quasi-experimental methods offer robust alternatives for evaluation the impact of the credit guarantee schemes. These include Regression Discontinuity Design (RDD), Propensity Score Matching (PSM), and Difference-in-Difference (DiD) approaches. RDD exploits eligibility thresholds (e.g. firm size or turnover) to compare firms just above and below the cut-off, assuming they are otherwise similar. PSM constructs a statistically equivalent control group by matching firms on observable characteristics, while DiD compares changes in outcomes over time between treated and untreated groups. These methods rely on strong data and assumptions but can yield credible estimates of impact when implemented carefully.

6.6.4 Data collection

Data should be collected for both end beneficiaries of the financial instrument as well as non-beneficiaries, covering financial and economic indicators. Sources can include monitoring data from credit guarantee operations, administrative data from credit registries, central banks, and lenders, and survey data to complement. Administrative data can be particularly cost-effective and rich in detail, while surveys offer flexibility but are more expensive. Qualitative data from interviews and focus groups can complement quantitative findings by providing context and insights into beneficiary experiences.

6.6.5 Potential role for MDBs and public institutions

During our country visits, we noted that impact measurement remains a large gap for most NDBs. Various NDBs measure the impact for selected products. For example FIRA measures the impact that is required for the green bond certification, and BanEcuador measures indicators required by the Ministry of Agriculture for their concessional funding. However, for all selected NDBs an all-encompassing impact framework to measure success from a development perspective is lacking.

MDBs and public institutions can play an important role in supporting NDBs to evaluate and improve the effectiveness of financial instruments. More concretely, they can assist in developing monitoring frameworks to track loan performance, repayment behaviour, and development outcomes. The World Bank introduced a corporate scorecard with 22 indicators focused on outcomes. This framework is being shared with other development banks to harmonize impact measurement and improve accountability. It enables NDBs to track loan performance, repayment behaviour, and development outcomes like growth and resilience.³²

³² Source: World Bank Group, 2024. World Bank Group Announces New Approach to Measuring Impact.

7 Toolkit of non-financial instruments

7.1 Digital financial services and channels

Challenge	Social- and institutional hurdles	Infrastructure- and market access imperfections	Environmental- and climate change	Knowledge- and technology gaps	Limited access to finance
Can the challenge be solved by this solution?					

7.1.1 Context

Most of the recent innovation does not come from radically different thinking about finance, but originate from the potential of digitization. Not only the lenders now have the option to go digital and work on process driven retail solutions at scale, digitization has also reached out to the lives of small-scale farmers. Having access to a mobile phone opens a new world for them, which may also include access to financial products and services. Digital tools are transforming payments, saving and lending for smallholder farmers in profound ways, making it more efficient, inclusive and scalable.

A digital identity through biometric verification or digital IDs help lenders to onboard farmers who lack formal documentation. It enhances transparency and reduces the risk of fraud, which is omnipresent in informal markets. Strong Know-Your-Customer (KYC) tools will help both lenders and farmers to prevent fraud.

Digitization can be a great tool for streamlining loan origination and approval. Mobile apps and digital platforms can help automate credit checks and reduce paperwork. It may also speed up loan approval and disbursement, which is crucial for time-sensitive agricultural cycles. Mobile and digital platforms are increasingly used to reach remote farmers. This reduces transaction costs and enables to go further down-market, serving farmers that otherwise wouldn't be eligible. And these systems can be made with gender-sensitive design in the sense that they can be tailored to include women farmers, who often face greater barriers to access credit.

Digitization enables the adoption of data-driven credit scoring models. By leveraging alternative data sources, such as mobile phone usage, agricultural records, and satellite imagery, financial institutions can better assess the creditworthiness of farmers, including those without a formal credit history. However, while promising, implementing such models is more complex than it may initially appear. Many financial institutions lack experience in handling non-financial customer data, and making effective use of these data sources often requires significant investment in robust data infrastructure and analytics capabilities.

More comfort can be created by linking the lending activities with digital payment systems or mobile wallets. This may for instance enable the direct disbursement and repayment of loans. It reduces transaction costs and improves accessibility, especially in remote areas.

For group lending, group coordination and monitoring can be enhanced by messaging apps and digital dashboards help groups stay connected and track repayment. It facilitates peer monitoring and accountability.

Digitization also allows for training and extension services. Digital platforms offer e.g. agricultural advice, weather updates, and market prices. This may lead to productivity improvements and larger loan repayment capacity. A concrete example for this is FIRA's platform called AgriTech Nexus. With this platform, FIRA aims to connect supply and demand of innovative technology services. In other words, it is a marketplace for technology services. The platform offers other innovative solutions that can strengthen the agricultural sector, such as remote sensing data, weather- and climate data, market information, and TA for producers. The solutions are accessible for financial intermediaries as well as end beneficiaries.

And as said earlier, transparency between lenders and borrowers, but also between second-tier NDBs and their beneficiaries can be improved. Digitization allows for real-time tracking of loan performance and trust between lenders, farmers, and other stakeholders.

In the end, digital lending is not just about speed, it's about creating personalized, inclusive financial journeys for underserved communities. For smallholder farmers, it means better access to capital, improved productivity, and stronger resilience against shocks.

7.1.2 Enabling factors

7.1.2.1 Product characteristics

Digital financial services can take many forms. To keep things concrete, we'll focus on one specific product (working capital loans for small-scale farmers) that is currently offered primarily in a non-digital way and therefore has high potential for improved impact. We'll explore examples of institutions that have successfully digitized this product. The emphasis is not on the recommended loan amount, which varies by country and crop, but rather on how the product is delivered to its beneficiaries.

7.1.2.2 Process

To build on the introduction section, the process of digitizing credit for smallholder farmers involves several key components. Ideally, these elements should be in place before launching a digital financial service to customers.

1. **Reliable internet connectivity:** to complete the loan application, the applicant- or in an assisted model, the field officer- must have access to a reliable internet connection. While some platforms allow data to be saved offline and synchronized once connectivity is restored, a stable connection becomes essential when real-time customer verification is required during onboarding. In such cases, uninterrupted internet access is a critical prerequisite.
2. **Availability of relevant data:** to digitize the loan application process effectively, it is essential to assess both the required and the nice-to-have data, and compare these with what is currently available. This includes farmer profiles, crop cycles, transaction histories, and potentially alternative data sources. In most cases, there will be gaps between the ideal and the available data, and sometimes even between the required and the minimum data needed to proceed.
 - a. A useful approach is to define a current state, an improved state, and a target state for data availability and quality. This framework allows FIs to begin their digitization journey today, while also setting a clear path for enhancing data availability and quality over time.
3. **Digitization of core processes:** to enable a seamless and efficient user experience, processes such as loan origination, credit assessment, and disbursement must be digitized. A good starting point is conducting a gap analysis to understand which systems are currently in place and what additional tools and integrations are needed to deliver a truly end-to-end digital financial service. Key components that support this digitization include:
 - Digital loan application forms;
 - Loan origination and management systems;
 - Credit scoring models and engines;
 - Core banking systems;
 - Integration with digital wallets.

Identifying gaps and mapping out the required infrastructure supports FIs in priority setting and planning for future improvements in system capabilities and interoperability.

A notable example of a bank investing heavily in the digitization of financial services for smallholder farmers across the country is SBP in Pakistan. In partnership with the Government of Pakistan, SBP launched a nationwide financial inclusion initiative in July 2025 aimed at enabling end-to-end digital lending for farmers. The initiative seeks to significantly reduce loan application turnaround times by leveraging digital tools and alternative data sources for credit assessment.

SBP has outlined the following process for digital lending as below.

1. Application Submission: farmers submit loan applications via a dedicated digital portal and select their preferred bank.
2. Data Screening: the system integrates data from credit bureaus, agro-based ratings, personal and land information.
3. Land Information Management System (LIMS): farmers geotag their land by dropping a pin. LIMS uses satellite imagery to provide insights into crop patterns, cultivation history, and fertilizer usage.
4. Psychometric Testing: a test (BIGINI) assesses the farmer's digital and financial literacy.
5. Scoring & Approval: two scores are generated and shared with the bank. Based on these, banks approve loans.
6. Disbursement: approved loan amounts are transferred to the farmer's digital wallet. Funds are disbursed in a hybrid model-75% in a closed loop (restricted to selected vendors) and 25% in an open loop.

Another example of an NDB heavily investing in digitization is NABARD in India. Farmers in selected states can apply for working capital via the e-KCC portal, which is integrated with the Unique Identification Authority of India, enabling secure identity verification. A Unified Lending Interface allows for access to digitized land records to validate land ownership. Finally loans are automatically approved or rejected, and disbursement happens digitally. Currently being piloted in six states, the program is expected to scale nationwide, ultimately benefiting millions of farmers mainly through cooperative banks, Primary Agricultural Credit Societies, and Regional Rural Banks.

7.1.2.3 *Distribution channels and strategies*

Working capital loans for smallholder farmers are typically provided by first-tier institutions, often with funding and support from second-tier institutions and government programs. The way these loans are delivered changes significantly when digitization is introduced.

Successfully digitizing this product requires more than just technology; it often depends on strong support from second-tier institutions, governments, and even multilateral organizations. Their involvement is crucial to implement digital solutions cost-effectively and at scale, especially since first-tier institutions frequently face limitations in resources, capacity, and technical expertise. As outlined earlier, the digitization of financial services in Pakistan is being spearheaded by SBP in collaboration with the Government of Pakistan. In India, the national government is making substantial investments in digital public infrastructure through the AgriStack initiative, which aims to consolidate and streamline agricultural data nationwide. Moreover, the Reserve Bank Innovation Hub and NABARD are leading the design and rollout of the e-KCC platform. To support widespread adoption of e-KCC, but also other digital services, NABARD has recently established a Common Service Center to assist first-tier institutions, such as cooperative banks, in utilizing digital technologies effectively.

7.1.2.4 *Risk management*

Digitizing the working capital facility application and disbursement process for farmers requires substantial risk management changes at the FI level, both in systems and behaviour. Currently, risk assessments typically involves the steps as outlined below.

- Field inspections by loan officers to verify a farmer's landholding during the loan application process, and follow-up visits during the crop cycle to confirm that the crops being cultivated match those declared in the application.
- Verification through digitized land registries, where available, to confirm land ownership details and check whether the land is already pledged against another loan.
- Retrieval of the farmer's credit score from a credit bureau.
- Multi-layered loan evaluation, often involving several loan officers, legal teams, and - depending on the loan amount - multiple credit committees.

Digitizing risk management practices for a working capital facility can be achieved through the below approaches.

- Remote sensing technologies can be used to monitor crop growth, replacing the need for physical field inspections and enabling more efficient verification of crop types and health.

- Advanced credit models and engines can incorporate transaction histories and alternative data sources—often excluded from traditional credit bureau scores—to assess creditworthiness of farmers based on cash flow, rather than relying solely on land as collateral.
- Automated decision-making systems can apply predefined business rules alongside the credit model, such as setting threshold scores for automatic rejection or approval. This significantly reduces turnaround time and minimizes the need for manual intervention by loan officers.

As digitization transforms processes, it's essential to also reassess the risk appetite statement and risk management policies. Traditional credit bureau scores are often low or unavailable for farmers, making it crucial to design policies that go beyond conventional metrics. By incorporating alternative data sources and moving away from reliance on land as collateral, institutions can create more inclusive and effective risk frameworks.

7.1.2.5 Policy and regulation

This chapter highlights the critical role of government and central bank involvement in enabling digital financial services for agriculture, not only through investments in public digital infrastructure, but also by shaping enabling policies and regulatory frameworks that foster innovation, inclusion, and scalability. Some countries have adopted dedicated digital lending frameworks. For example, India's Digital Lending Guidelines, issued by the Reserve Bank of India, aim to regulate digital lending practices while ensuring consumer protection, transparency, and responsible innovation. Other countries have chosen to integrate digital financial services within broader financial inclusion strategies. In the Philippines, the National Strategy for Financial Inclusion serves as a comprehensive roadmap to promote inclusive growth and financial resilience. Coordinated by the Financial Inclusion Steering Committee and chaired by the Bangko Sentral ng Pilipinas (BSP), the strategy places strong emphasis on leveraging digital financial services as a key instrument to reach underserved populations, including those in rural and agricultural communities.

7.1.3 Potential role for multilaterals and public institutions

The transition to digital lending requires coordinated investments from governments, central banks, and second-tier NDBs. Multilateral institutions also have a critical role to play in this shift. They can provide TA to both first- and second-tier NDBs, support the development of a robust digital ecosystem involving FinTechs and other stakeholders, and facilitate the sharing of best practices across regions. The following list outlines key instruments that multilateral organizations can leverage to support NDBs and the broader IFE in enhancing digital service delivery.

- TA grants: in 2023 ADB launched the Fintech for Inclusion Transformation Program in the Philippines to encourage local financial institutions to invest in digitalization of their operations. ADB offers matching grants to digitally strengthen small and mid-size FIs that focus on agri-finance, agri-value chains, women empowerment and/ or climate change mitigation.³³
- Loans: the IDB Lab has provided a USD 150 million sovereign guaranteed loan in partnership with BNDES, who will contribute USD 30 million to implement PRODIGITAL, a program that supports digital transformation and aims to expand the use of digital public services in Brazil.³⁴
- Research Initiatives: ADB has published the *Harnessing Digital Transformation for Good: Asian Development Policy Report 2025*, which outlines key challenges and emphasizes how national digital strategies can enhance policy coordination. The report also explores how tailored digital policy tools can address market inefficiencies and equity gaps.³⁵ Another notable publication, *Digital Transformation for the SDGs*, showcases best practices

³³ Source: ADB-SGV, 2023. [FIT Program | Fintech Inclusion for Rural Banks and Microfinance Institutions | Philippines](#).

³⁴ Source: IDB, 2025. [IDB | IDB and BNDES to Accelerate Digital Transformation in Brazilian States and Municipalities with \\$180 Million in Financing](#).

³⁵ Source: Asian Development Bank, 2025. *Harnessing Digital Transformation for Good: Asian Development Policy Report 2025*.

from countries such as Bangladesh, India, and Vietnam, highlighting successful approaches to leveraging digital technologies for sustainable development.³⁶

- Training: IFC, for example, through its DigiLab initiative supports FIs in their digital transformation through a 12-week training program.³⁷
- Digital infrastructure & regulatory development: another example is the Financial Inclusion Global Initiative (FIGI) which was executed between 2017 and 2021. The program was funded by the Gates Foundation and implemented by the World Bank Group, Committee on Payments and Market Infrastructure and the International Telecommunications Union. FIGI concentrated on enhancing electronic payment acceptance, digital identity for financial services, and security, with a geographic focus on China, Egypt, and Mexico. Its approach included diagnostic assessments, TA, capacity building, and piloting innovative solutions to advance digital financial inclusion.³⁸ Crucially, FIGI-stakeholders collaborated closely with national authorities to support the development of enabling legal and regulatory frameworks - for instance for FinTech - helping to create a more inclusive and supportive environment for digital financial services.³⁹

Moreover, MDBs can help encourage the adoption of digital lending and encouraging a shift from collateral-based lending to cashflow-based credit assessments, by offering de-risking instruments, such as guarantees, thereby expanding financial access to underserved segments.

7.2 Technical assistance and capacity building

Challenge	Social- and institutional hurdles	Infrastructure- and market access imperfections	Environmental- and climate change	Knowledge- and technology gaps	Limited access to finance
Can the challenge be solved by this solution?					

7.2.1 Context

7.2.1.1 TA for small-scale farmers

NDBs play a role in supporting smallholder farmers, not just through financing, but also via a suite of non-financial services that build capacity, reduce risk, and improve market access. A breakdown of the most impactful types of non-financial services NDBs include the below.

- Agricultural extension services: e.g. on-the-ground training and TA in farming practices, pest control, soil management, and crop diversification.
- Market linkages and value chain support: connecting farmers to buyers, processors, and exporters; facilitating contracts and aggregation.
- Capacity Building and training: workshops and education on financial literacy, business planning, cooperative management, and digital tools.

³⁶ Source: Asian Development Bank, 2024. Digital Transformation for the Sustainable Development Goals.

³⁷ Source: IFC, 2024. [Digital Strategy Program for Financial Institutions | About DigiLab](#)

³⁸ Source: World Bank Group, n.d. [Financial Inclusion Global Initiative \(FIGI\)](#)

³⁹ Source: FIGI, 2024. [Country implementations – FIGI](#)

- Access to inputs and technology: facilitating access to seeds, fertilizers, irrigation systems, and mechanization through partnerships or subsidies.
- Post-harvest infrastructure support: support for storage facilities, cold chains, and transport logistics.
- Climate Resilience and Risk Management Advisory: guidance on climate-smart agriculture, crop insurance education, and disaster preparedness.
- Digital Inclusion and Mobile Services: promoting mobile banking, digital extension platforms, and SMS-based market updates.
- Policy Advocacy and Institutional Support: helping farmer groups engage with policymakers or navigate regulatory systems, e.g. on land titles.

There is abundant literature supporting the effectiveness of packaging TA to financial services. It means that there is a major role to play for NDBs to avail and coordinate both into one package for specific target groups of small-scale farmers. NDBs can leverage the expertise of external parties, such as NGOs, MDBs or even research institutes to provide TA. For example, in the case of livestock insurance offered by PKSF, complementary services such as access to vaccination programs, feed advisory services, and veterinary care, are delivered in partnership with government agencies and research institutions.

7.2.1.2 TA for financial intermediaries⁴⁰

TA and capacity building should not be limited to small-scale farmers only. Especially intermediary financial institutions (IFIs) working together with second tier NDBs, such as with credit guarantees, might take benefit from additional knowledge and insights related to the agricultural sector. Since they have to reach out to customers in remote rural areas, and lack elaborate experience in agriculture, they may need assistance.

Especially financial institutions receiving credit guarantees often require targeted TA to maximize the effectiveness of these instruments and ensure sound lending practices. Below the key types of support typically facilitated by NDBs are listed.

- Risk assessment and management; training on evaluating borrower creditworthiness, especially in sectors with limited track records (e.g., climate adaptation projects) and tools for modelling default probabilities and stress testing portfolios.
- Loan structuring and documentation; guidance on designing loan products that align with guarantee terms and support in drafting contracts and legal documentation that incorporate guarantee provisions.
- Monitoring and reporting systems; development of systems to track loan performance and compliance with guarantee conditions and assistance in setting up reporting frameworks for guarantors and regulators.
- Impact measurement; beyond system development, TA should also support the measurement of impact, helping stakeholders assess both financial outcomes and broader development goals. As highlighted in section 5.6, it is essential to define success indicators, covering financial performance and impact metrics, during the design phase of any financial instrument.
- Capacity building and staff training; workshops and courses to educate bank staff on guarantee mechanisms and their benefits, and sector-specific training (e.g., agriculture, renewable energy, SMEs) to improve lending decisions.
- Digital tools and infrastructure; implementation of digital platforms for loan origination, monitoring, and guarantee claims and the integration of guarantee schemes into existing banking systems.
- Market and sector intelligence; insights into emerging sectors supported by guarantees (e.g., climate resilience, green infrastructure) and data sharing on borrower behaviour and repayment trends.

⁴⁰ On behalf of multilateral development banks, throughout many years Rabo Partnerships has gained extensive experience in capacitating financial institutions in emerging markets to better serve rural markets, including an effective use of credit guarantees, which has often been instrumental in managing the risk profile of their loan portfolio within acceptable boundaries. TA has addressed basically all the points mentioned in this section.

- Regulatory and compliance support; help navigating local and international regulations related to credit guarantees and ensuring alignment with anti-money laundering (AML) and know-your-customer (KYC) standards.

These forms of assistance are often provided through multilateral development banks, government agencies, or specialized financial institutions alongside the guarantees themselves, and can be availed by NDBs.

7.2.2 Enabling factors

7.2.2.1 Program characteristics

7.2.2.1.1 TA for small-scale farmers

As highlighted in section 6.2.1, linking TA to financial services enhances their overall effectiveness. In this regard, we would like to share an example of a TA program that is a prerequisite for accessing a loan. The ASCEND program by LBP in the Philippines must be successfully completed before applying for a working capital loan through the AgriSenso Plus program. The focus of ASCEND are smallholder farmers, MSMEs, and cooperatives. The ASCEND program has multiple components, but three are especially worth mentioning here.

- Digital Financial Literacy Training: Focuses on enhancing financial management skills at the farm level, such as how to record their income and managing their expenses, savings and credit. A key element of the training has been teaching farmers how to separate household from production. Additionally, participants are introduced to LBP's digital banking services, including mobile banking and digital deposit platforms.
- Agri-Advisory and Market Linkage Training: This training guides farmers on optimal crop planning-when and how to plant-while also introducing strategies for establishing market linkages. It encourages farmers to join associations or cooperatives to improve access to markets and increase profitability through collective bargaining and shared resources.
- AgriSenso Plus Training: Provides an overview of the program, outlining its objectives, eligibility criteria, and the application process to help farmers understand how they can participate.

The Land Bank Countryside Development Foundation (LBCDF) serves as the main partner of LBP in delivering capacity-building initiatives aimed at strengthening cooperatives and supporting the development of farmers and fisherfolk. LBCDF is responsible for determining the timing and location of training sessions.

To ensure that participants have completed the ASCEND program-a prerequisite for loan applications-the following verification process is in place.

- The Registry System for Basic Sectors in Agriculture (RSBSA) is a government-managed database that is used to identify eligible beneficiaries for agriculture-related programs and services, including insurance and financial assistance.
- Training attendance is recorded in the RSBSA system. Upon successful completion, participants receive a certificate, which is required when applying for loans.

Another example of providing TA is through the "Centros de Desarrollo Tecnológico" (CDTs), Technical Development Centres of FIRA. FIRA has five CDTs across the country that focus on increasing efficiency of water use in agriculture, energy efficiency, input efficiency and productivity increase. They do so through four key functions:

1. Validation of new technologies and methodologies (that are flexible and scalable);
2. Demonstration of new technologies and methodologies;
3. Training (both in-person and virtual) on financial and agronomic matters;
4. Facilitation of peer-to-peer trainings through videos and field/classroom trainings. This function is focused on multiplying FIRA's outreach to more farmers in the country.

The change strategy of the CDTs is to focus on early innovators and early adopters among farmers to initiate the spreading of improvements in agriculture. According to the interviewed CDTs, culture in rural areas is usually change-averse and innovators are often not respected until positive effects can be demonstrated.

Since the CDTs operate break-even, they are not a big cost center for FIRA, while they do have a significant impact on farmers' productivity and repayment capacity. For example, the soil diagnostics that FIRA offers, leads sometimes to a 43% increase in yields for farmers.

Considering the large spread and remoteness of many of NDBs' end beneficiaries, examples of TA through digital channels can be increasingly noted. FIRA's digital TA platform "Plataforma de Asesoría Técnica" functions as a gateway to a large knowledge base for farmers. The application is widely used to identify crop diseases and possible solutions. Additionally, BDP has implemented weather alerts on WhatsApp that are being sent to clients according to the latest data.

7.2.2.1.2 TA for financial intermediaries

As mentioned in 6.2.1.2., there are many types of support that second-tier institutions can provide to their financial intermediaries. The approach to organizing TA varies across second-tier NDBs. In some cases, NDBs collaborate with governments, NGOs or multilateral institutions to provide and even fund TA. FINAGRO for example, organizes agricultural finance trainings for intermediaries, applying their in-house methodology for digital onboarding of farmers and using a wide range of parameters for credit decisions. In other cases, NDBs have their own dedicated training centres. For example, NABARD delivers TA through its dedicated institution: the Bankers Institute of Rural Development (BIRD). BIRD specializes in training and capacity building for bankers, NGOs, and other development organizations across India and the Asia-Pacific region. With three centres located throughout India, BIRD offers programs focused on rural finance, risk management, and policy implementation. While some programs are specifically designed for financial institutions that receive funding from NABARD, many training opportunities are also available to professionals from other banks, microfinance institutions (MFIs), and government agencies.

7.2.2.2 Risk management

While TA is not a financial instrument in itself, it can be considered a risk management tool that strengthens individual borrowers, first-tier institutions and even the second-tier NDBs.

- Strengthening individual borrowers: when integrated with a specific financial instrument, TA can contribute to lowering the NPL-ratio associated with that product. A good example of this is PKSF, which has a livestock insurance scheme, where ADB provides finance and PKSF provides technical support-such as veterinary services, vaccinations, and feed advice-to reduce risks and decrease livestock mortality through education and knowledge-sharing. In addition to paying the insurance premium, the borrower's ability to repay the loan used for purchasing livestock significantly improves when technical support is provided. Since the support has proven to significantly reduce livestock mortality, the overall risk associated with the loan is reduced.
- Strengthening first-tier institutions: TA can enhance the capacity of first-tier institutions by providing training on assessing borrower creditworthiness and equipping them with tools to model probabilities of default. This leads to more robust and sustainable loan portfolios over time. A strong example is SBP's investment in digital infrastructure and the provision of digital underwriting tools to banks. The next critical step is to ensure that banks are trained to effectively use these tools and integrate them into their lending processes.
- Strengthening second-tier institutions: TA aimed at training second-tier NDBs to evaluate the performance of first-tier institutions, monitor their financial health, and adjust funding levels accordingly plays a direct role in risk management. For example, NABARD assesses and rates cooperative banks, and may adjust credit lines based on their financial stability and compliance status.

7.2.2.3 Funding needs and options

TA programs for NDBs are often funded by governments, with the beneficiaries being either the borrowers directly or the NDBs acting as facilitators. In the latter case, the NDB receives the TA budget and organizes the support for current or potential borrowers. In the Philippines, TA funding often originates from government agencies, which prefer not to provide these directly to beneficiaries, as doing so may be seen as subsidies- an approach considered unsustainable. Instead, the government creates more leverage by channelling funds for capacity building through LBP or its subsidiary, the Countryside Foundation.

Many NDBs in emerging markets also have experience with projects that are supported by international development assistance, such as those under the Green Climate Fund. Additional sources of TA funding and projects include internal resources from NDBs, grants from multilateral organizations (see section 6.2.3), partnerships with academic institutions, and regional knowledge networks such as ALIDE and APRACA.

7.2.3 Potential role for MDBs and public institutions

Multilateral organizations and public institutions play a critical and multifaceted role in providing TA to NDBs. While not exhaustive, the following examples illustrate common ways in which multilateral institutions engage in TA.

- Provide grants of concessional funding for TA to NDBs or to their beneficiaries.
- Institutional capacity building through training staff in areas such as credit risk assessment, ESG compliance, IT security and data management.
- Policy support through aligning NDB operations with international standards and advocate for policy reforms—such as the adoption of a national green taxonomy—that create an enabling environment for inclusive finance.
- Research such as conducting feasibility studies and environmental and social impact assessments to evaluate the effectiveness and sustainability of financial instruments and TA interventions.
- Provide connections with international research institutes (e.g. CGIAR, CIAT or Wageningen University) through MDBs' networks. These connections can be bundles with seed capital to fund the first steps of a partnership with the NDB (e.g. to conduct or validate research applicable for improving resilience of small-scale farmers).

7.3 Determining effectiveness

Determining the effectiveness of non-financial instruments requires evaluating both the outputs—what was delivered—and the outcomes—what changed as a result. This becomes especially important when multilateral institutions are involved in delivering TA, as they often require measurable impact. Establishing clear objectives, KPIs, and methods for tracking these KPIs before the intervention begins is essential for assessing its effectiveness.

Monitoring outputs tends to be relatively straightforward and often includes metrics such as the number of trainings conducted or the number of participants, often disaggregated by gender and age. However, evaluating outcomes and long-term impact is more complex. Changes such as increased financial inclusion or improved farmer incomes are harder to quantify and may only become evident months or even years after the intervention.

At the level of financial institutions, certain indicators can offer insight into the impact of TA. For example, a reduction in NPLs for specific product categories may suggest improved risk management, while faster loan processing times could indicate enhanced operational efficiency. However, significant improvements are still needed in defining clear objectives, measuring impact effectively, and using results to inform decision-making to enhance the overall effectiveness of technical TA delivery.

8 Concluding remarks

During the solution design phase of the IFE-FST initiative, a comprehensive exploration of current practices, challenges, and opportunities in agricultural finance across LAC and APR was conducted. Special attention was given to the core challenges faced by farmers, including social and institutional barriers, limited infrastructure and market access, environmental pressures and climate change, and gaps in knowledge and technology. A central focus of this phase was the role of NDBs in supporting small-scale farmers through strategic allocation of both capital and knowledge.

This phase led to the development of a practical and adaptable toolkit for NDBs and their partners. The playbook serves as a guide for NDBs to assess and strengthen their offerings, starting from the needs and challenges of end beneficiaries, particularly small-scale farmers. Depending on the specific challenges NDBs aim to address for their target segments, a range of solutions is available. These include:

- **allocation of capital** through concessional loans, credit guarantees, and insurance products; and
- **allocation of knowledge** and capacity building through digital financial services and TA.

The solutions toolkit further explores how these instruments can be effectively deployed to reach small-scale farmers. Rather than introducing new products, the focus is on leveraging existing solutions in innovative and impactful ways, drawing on lessons learned from successful initiatives around the world.

What becomes clear is that no single solution can address all the challenges faced by small-scale farmers. A combination of financial and non-financial interventions is essential, and ideally, these should be offered in an integrated manner to maximize impact. Additionally, the transition from traditional to digital tools is a significant development. Whether through digital TA platforms, online loan applications, or end-to-end digital financial services, there are growing opportunities for NDBs to digitize parts of their operations. This shift not only enhances efficiency but also enables greater scale and outreach, allowing NDBs to better serve rural farming communities.

In addition, the report also highlights opportunities for multilateral development institutions to strengthen and support NDBs in their endeavours to increase access to finance for small-scale farmers. Besides providing financial or non-financial support, it remains vital for multilateral development institutions to assess both the effectiveness of NDBs (e.g. governance, agile processes, capacity and outreach) as well as the appropriate match of the instruments with market challenges to be solved. Without these enabling factors, impact of MDB support to NDBs will be limited.

This report marks the completion of the solution design phase. For the next phase 'the execution phase' two countries (one in LAC and one in APR) will be selected for pilot implementation of specific financial and/ or non-financial solutions. Selection will be based on feasibility, stakeholder commitment, learning potential, and alignment with existing IFAD projects. After selecting the pilot countries, the solutions outlined in the toolkit and detailed in the country annexes will be presented to the management teams of the respective NDBs. The specific focus of each pilot will be determined based on three key factors: alignment with the NDBs' strategic priorities, relevance to beneficiaries of ongoing IFAD projects, and the feasibility and scalability of the proposed solutions within and beyond the pilot countries. The pilots will test the effectiveness of financial solutions in improving access for rural smallholders. Local NDBs and IFE actors will lead implementation, with active participation from smallholder communities. Insights from the pilots will guide refinements to the toolkit, ensuring solutions are both effective and scalable across diverse contexts.

Through Agri-PDB webinars, in-person stakeholder engagements in the pilot countries, and a regional roundtable in Q4 2026, we will facilitate the exchange of best practices and share preliminary insights gathered during the pilot phase. The conclusion of the pilot marks the beginning of the knowledge dissemination phase, where lessons learned will take center stage and a series of activities will be organized to promote knowledge exchange. The aim is to foster a culture of knowledge sharing with and among NDBs that drives continuous improvement in financial products and services for smallholders, ultimately enhancing the global IFE's ability to effectively reach rural farmers.

Annex A: NDB archetypes description

Foundational	
Foundational indicator	Description
Limited rural presence	Direct lending requires NDBs to maintain a strong rural presence. Long turnaround times and high levels of NPLs are evident if there is limited rural presence, especially in combination with manual operations.
Operational Challenges managing intermediaries	Limited oversight and monitoring of intermediaries lead to inefficiencies and risk exposure. In addition, limited visibility into how funds are utilized by end borrowers can result in misalignment with intended development objectives.
Basic risk management	Risk management practices are largely elementary, characterized by minimal credit assessment, minimal monitoring, and the absence of stress testing. In first-tier banks, this manifests as limited credit appraisals and due diligence for individual borrowers, resulting in high NPLs. For second-tier banks, it reflects limited institutional evaluation of intermediaries and elementary portfolio-level risk management.
Manual operations	Processes are largely paper-based or require significant manual intervention, resulting in inefficiencies, delays, and limits sustainable scaling of operations and portfolios.
Traditional financial instruments	Product offering is limited to basic loans and guarantees - possibly deposits and transaction banking - with no innovative or progressive instruments. Also, repayment terms are not aligned with seasonality.
Ad-hoc non-financial activities	Activities (e.g., technical assistance, capacity building) are sporadic and reactive, such as occasional training or advisory services without clear objectives or integration into the bank's strategy.
Financial vulnerability	Heavy reliance on government funding, persistent losses, and high levels of NPLs indicate financial vulnerability.

Intermediate

Indicator	Description
Strong rural presence	NDB maintains an extensive branch network or partnerships in rural areas, enabling efficient outreach and service delivery to underserved communities.
Moderate management of intermediaries	Intermediary management practices are partially established, with basic oversight mechanisms and reporting structures in place. Coordination with partner institutions occurs, but processes are not fully standardized or automated, and monitoring is reactive rather than proactive.
Emerging risk management	Risk management practices are moderately developed, with some credit assessment and monitoring in place – reducing high NPL ratios - but stress testing and advanced risk controls remain limited. For first-tier banks, this typically means basic credit appraisals and due diligence for individual borrowers are conducted, though not consistently or comprehensively. For second-tier banks, institutional evaluations of intermediaries and portfolio-level risk management frameworks exist but require strengthening to ensure resilience and alignment with best practices.
Partially digitized processes and services	Core banking systems are implemented and some core processes (e.g., loan applications, reporting) are digitized, but manual intervention is still required for complex tasks.
Mixed offering of traditional and progressive financial instruments	Product portfolio includes both conventional loans and some innovative instruments (e.g., blended finance, guarantees).
Structured non-financial activities	Regularly planned programs with some alignment to development goals. There may be dedicated resources and basic monitoring, but these activities are not yet fully embedded in the core business model. E.g. periodic capacity-building workshops or sector-specific advisory services.
Financial stability	Diversified funding sources, positive profitability, and manageable NPL levels indicate financial resilience.

Advanced

Foundational indicator	Description
Strong rural presence	NDB has an extensive and well-integrated rural network, ensuring efficient outreach and service delivery to underserved communities.
Efficient management of intermediaries	Robust oversight and monitoring of intermediaries through digital tools ensure transparency, timely reporting, and alignment with development objectives.
Strong risk management	Risk management practices are robust and well-integrated, featuring comprehensive credit assessment with advanced credit scoring, real-time monitoring systems, and regular stress testing. For first-tier banks, this includes thorough credit appraisals and rigorous due diligence for individual borrowers, resulting in low NPLs. For second-tier banks, this includes strong institutional evaluations of intermediaries and effective portfolio-level risk management frameworks.
Fully digitized processes and a solid digital infrastructure	End-to-end digitalization of core processes, including loan origination, approval, monitoring, and reporting, supported by robust IT systems.
Sophisticated financial instruments	Diverse product portfolio including structured finance, blended finance, guarantees, and risk-sharing mechanisms.
Strategic and integrated non-financial activities	Activities are fully integrated into the NDB's development strategy, with clear objectives, measurable impact, and strong linkage to financial products. These activities complement lending operations and are designed to achieve long-term development outcomes.
Financially stable and flourishing	Diversified funding sources, strong profitability, and low NPL levels ensure long-term sustainability and growth.