



The Rural Finance
Partnership presents

**SUCCESSFUL MODELS
FOR FINANCING
THE RURAL AND AGRICULTURAL SECTORS**

The views and opinions expressed in this publication are those of the authors and do not necessarily reflect the views of Incofin Investment Management, the Inter-American Development Bank or other funders involved in the Rural Finance Partnership for Latin America and the Caribbean



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ACRONYMS AND ABBREVIATIONS

ATM(s)	Automated teller machine(s)
AVC(s)	Agriculture value chain(s)
AVCF	Agriculture value chain finance
DFS	Digital financial services
EbA	Ecosystems-based adaptation
EMS	Environmental Monitoring System
FI(s)	Financial institution(s)
GIRAS	Gestión de Información de Riesgos Agropecuarios y Sistémicos (Management of Agricultural and Systemic Risk Information)
GSMA	Global System for Mobile Communications Association
IADB	Inter-American Development Bank
Incofin IM	Incofin Investment Management
LAC	Latin America and the Caribbean
MFI	Microfinance institution
MIF	Multilateral Investment Fund
MNO(s)	Mobile network operator(s)
MSME(s)	Micro, small and medium-sized enterprise(s)
NDVI	Normalized Difference Vegetation Index
NGO(s)	Non-governmental organization(s)
P2P	Person-to-person
PAR30	Portfolio at risk over 30 days
PC	Personal Computer
POS	Point-of-sale
RFP	Rural Finance Partnership of MIF and Incofin IM
SHF(s)	Smallholder farmer(s)
SPO(s)	Smallholder producers’ organization(s)
TA	Technical assistance
UNEP	United Nations Environment Program
VCF	Value chain finance

FOREWORD

While important strides have been made in recent years to broaden access to financial services in Latin America and the Caribbean (LAC), much work remains to be done in the region for those committed to expanding financial inclusion. Particularly salient for investors, fund managers, microfinance institutions (MFIs) and donors alike is the “last mile” challenge of attending typically underserved and hard-to-reach rural populations with appropriate financial services. Indeed, 54% of rural adults in LAC remain outside the formal financial system, which faces the considerable challenge and opportunity of meeting a 19 million US\$ demand for agricultural financing that, thus far, remains unsatisfied. In addition to improving the livelihoods of rural households, concerted efforts in expanding financial inclusion in rural and agricultural communities will likely play an important role in how we confront global challenges of food security, climate change and other economic and demographic shifts in the years to come.

Recognizing the unique opportunity to promote social and economic development in the LAC region, the Inter-American Development Bank’s Multilateral Investment Fund (MIF) and Incofin Investment Management (Incofin IM) formed the Rural Finance Partnership (RFP) in 2014, a technical assistance program aimed at enhancing the financial, operational and social performance of rural-focused MFIs in Latin America. The partnership builds upon both organizations’ extensive experience in rural microfinance

and a common commitment to deep engagement in the LAC region. To this purpose, the RFP provides MFIs with tailored technical support to develop and roll out new credit and savings products, innovative delivery channels and enhanced risk and social performance management practices. The program’s primary objectives are, through partner MFIs, to provide higher quality financial services to 130,000 rural clients over the RFP’s four-year tenure and to encourage knowledge-sharing and peer-to-peer learning at the regional and industry levels.

Organized on October 27, 2016 by Incofin IM under the patronage of the MIF, the RFP learning event “*Successful Models for Financing the Agricultural Sector – Insights from Latin America and the Caribbean (LAC) region*” gathered fifty-two participants representing twenty-two financial service providers from twelve LAC countries to exchange experiences and best practices with regard to serving smallholder farmers and rural entrepreneurs.

The toolkit that follows represents a collection of the success stories presented during the event as well as practical tips for financial institutions hoping to replicate these models. We hope that the toolkit proves useful for our partners in the LAC region and globally.

INTRODUCTION

With an estimated 500 million families, representing over 2 billion people, smallholder farmers (SHFs) constitute the largest global population segment of those living on less than US\$2 a day¹⁻².

Today, financial institutions (FIs) do reach some of these low-income rural households but at a high cost, with short-term loan products that are generally not able to address the needs of their clients in a comprehensive manner. The recent Dalberg's "Inflection Point" report reveals **the huge gap that exists between the offer of credit (estimated at USD 50 billion) and the demand from SHFs globally** (estimated at USD 220 billion or about 4.5 times the existing offer)³.

The financial sector has historically shied away from the small-scale agricultural sector, which presents a number of highly constraining characteristics: **high operating costs** for transacting loans and other financial services to less-educated, low-income populations in remote, rural areas with weak infrastructure, **absence of collateral** due mostly to land tenure restrictions, **concentration challenges** arising as farmers in a given area generally borrow at the same time and often engage in the same types of activities, **and systemic and correlated risks** linked to agriculture such as production risks (i.e. pests and spoilage), price volatility as well as environmental and weather shocks that can render a farmer's income irregular and repayment to the FI uncertain.

Despite these challenges, there is a strong case to be made in favour of **expanding the financial inclusion of SHFs**. Such arguments include that:

¹ Source: <http://www.cgap.org/sites/default/files/Focus-Note-Early-Insights-from-Financial-Diaries-of-Smallholder-Households-Mar-2015.pdf>

² Source: <https://www.cgap.org/sites/default/files/Focus-Note-Serving-Smallholder-Farmers-Jun-2014.pdf>

³ Source: http://dalberg.com/documents/Catalyzing_Smallholder_Ag_Finance.pdf

- The **revenues** generated by agriculture are estimated to be at least twice as effective in **reducing poverty** as revenues generated in any other sector⁴.
- Labor-intensive farming can act as a source of **employment and income** on a large scale, for people with varied skillsets.
- Finally, food production from small-scale agriculture is considered critical to meet global **food demand**, which is projected to increase 50% by 2030⁵.

With these benefits in mind, a number of key actors including FIs, are now experimenting with innovative approaches to overcome the sector's specific challenges.

Drawing upon the experiences of rural and agricultural-focused service providers that attended the "Successful Models for the Financing of the Rural and Agricultural Sector - Insights from Latin America and the Caribbean (LAC) region" workshop organized by Incofin IM at the 2016 FOROMIC in Jamaica, this toolkit aims to introduce some of the recent developments in agricultural finance and the opportunities they hold for better serving SHFs and their families, making them more resilient in the face of heightened climate change, while pushing the frontiers of financial inclusion.

The first chapter will explore the extent to which agriculture value chains may boost the financial inclusion of SHFs and, conversely, the ways in which FIs may take advantage of value chain systems to unlock low-income market segments.

The toolkit will then look at how recent developments in the field of agro-climatic data management and insurance solutions are helping both SHFs and FIs become more resilient in the face of climate change by developing comprehensive climate-smart lending methodologies.

The final section of this toolkit will review how innovations in digital financial services and the advent of branchless banking models can further amplify the financial inclusion of smallholder farmers.

⁴ Source: http://siteresources.worldbank.org/INTWDRS/Resources/477365-1327599046334/8394679-1327606607122/WDR08_02_ch01.pdf

⁵ *Ibid.*



1

ENABLING INCLUSIVE AGRICULTURE VALUE CHAINS: Opportunities for financial institutions

In recent years, the **agriculture value chain (AVC) approach** has emerged as a prominent methodology in promoting the competitiveness of smallholder farmers and of micro, small and medium-sized enterprises (MSMEs), while fostering socio-economic development and poverty reduction. A value chain approach seeks to understand how the different actors—from input suppliers and primary producers to end-buyers – operate as a complex system composed of horizontal and vertical linkages with one another and with the support markets that provide technical, business advisory and financial services to the system.

A well-functioning value chain provides the actors involved with services that are essential to the sustainable development of their activities. These include:

1. Supporting more **value-adding activities** at each stage of the production process,
2. Helping to ensure **compliance** with standards and technical regulations,
3. Improving the **environmental aspects** of products and services along the whole value chain,
4. Providing **access to finance** in order to increase productivity and innovation,
5. Organizing and **strengthening groups of operators**, and building their backward and forward linkages,
6. Addressing **policy, regulatory and institutional issues**,
7. Developing **information channels** that can help value chain actors work more efficiently.

The value chain approach has its fundamentals in a systemic way of thinking.

A full analysis of the system's structure and dynamics is needed to identify critical

factors, which pose challenges and create barriers to market access at all levels of the value chain, but especially for those players at the base. For instance, asymmetric access to market information, weak linkages, limited access to know-how and technology, poor infrastructure and lack of access to finance represent only a handful of obstacles to inclusive value chain development. To address these 'systemic constraints', value chain actors must endorse new behaviours and embrace new business models, in order to drive the systemic changes needed for a chain to operate sustainably in the long run.

Intra and extra-chain "enablers" can support the AVC to attain its development potential by either facilitating or directly providing access to key services that support SHFs to increase their competitiveness and participation within the AVC. The following sections provide a framework for identifying key enablers of inclusive AVC development and highlight how FIs may capitalize on these opportunities to implement effective Agriculture Value Chain Finance (AVCF) strategies.

THE ROLE of a Facilitator

An extra-chain actor who acts as **Facilitator** can promote systemic changes within the AVC by identifying and addressing challenges and opportunities across the chain to strengthen the whole market system. This role is particularly critical when the individual players within the AVC lack the coordination, skills, resources or competences to produce these changes independently. A facilitation strategy, in contrast with an interventionist strategy, aims to facilitate the articulation of

integrated value chains and to strengthen the capacities of local market participants without creating distortions or dependence upon external sources of support.

An example of how a Facilitator can enable the development of an inclusive AVC system by helping SHFs to overcome entry barriers while strengthening vertical and horizontal intra-chain linkages is given in Box 1-1 based on the work conducted by Swisscontact.

Box 1-1:

A facilitation approach by Swisscontact: FOCAPIS Program

- Swisscontact is an independent, business-oriented foundation, promoting economic, social and environmental development since 1959. Sustainable growth driven by an innovative private sector is the foundation of Swisscontact's initiatives.
- FOCAPIS Program
- Launched in 2016, FOCAPIS is a program aimed at supporting the beekeeping sector in El Salvador and Nicaragua by facilitating stronger ties between upper and lower level AVC actors in the local honey AVCs. The effort necessitated extensive **value chain mapping**, or the delineation and analysis of relations existing among the different layers building the chain. By doing so, Swisscontact was able to identify challenges preventing the beekeeping sector from becoming inclusive and supportive of SHFs' livelihoods.

The main bottlenecks and systemic issues identified included (i) limited productivity due to limited access to technology; (ii) limited compliance with trade standards and sanitary measures, (iii) limited access to finance, preventing SHFs from investing in equipment and new technology and (iv) limited access to business development services and exporting facilities.

The mapping was also vital in identifying key local players - 47 strategic local partners (beekeeping syndicates and their SHF members, honey exporters, public institutions, academic researchers, international organisations, and financial service providers) have been mapped based on the following key criteria: (i) motivation, (ii) internal capacity and expertise (iii) financial resources.

Swisscontact facilitated the implementation of a multi-stakeholder governance structure in order to allow various AVC players to offer their specific expertise and value proposition. 11 partnership agreements for the provision of key intra-chain services have already been signed, among which two are with microfinance institutions.

Swisscontact, acting as Facilitator, has brought together a diverse set of strategic actors to trigger systemic changes towards inclusiveness while minimizing distortion and ensuring the sustainability of the system.

The work of a Facilitator may open up a wide range of opportunities to FIs who seek to serve AVC players, and especially SHFs, by:

- Strengthening the intra-chain linkages, allowing FIs to develop innovative lending schemes that mitigate embedded risks associated with smallholder lending by incorporating the AVC into the scheme;
- Disclosing key intra-chain information for the design of tailored financial and non-financial services;
- Enabling partnerships with key value chain actors (e.g. associations or service providers) to support the sustainability of the whole system and lending activities.

THE ROLE of an Aggregator

Smallholder Producers' Organisations (SPOs), as **aggregators**, *bring SHFs together to draw upon their collective capacity and allow them to take advantage of economies of scale and larger value chain systems that would otherwise be unavailable to a single farmer.* Therefore, SPOs can empower SHFs by: (i) reducing the costs associated with production, (ii) providing access to higher quality inputs, (iii) equipping them with capital funding, and (iv) providing access

to information, marketplaces and marketing services to improve their value proposition and competitiveness within an AVC.

SPOs can act as conduits of financial resources and non-financial extension services for SHFs who lack solid business ties within a market system, as illustrated by the Honduran SPO CAPUCAS in Box 1-2 below.

Box 1-2:

Catalysing financial and non-financial services for SHF: Capucas' integral approach

- CAPUCAS is a Honduran coffee producers' cooperative, active in the region of Copán, whose mission is to reduce poverty and improve the quality of life of local coffee-producing families. With a strong focus on sustainability and product quality, the cooperative has developed an integral approach (detailed in Figure 1-1 below) that aims to reinforce the competitiveness and wellbeing of its SHF members within the local coffee value chain.

Figure 1-1: CAPUCAS coffee value chain mapping



- **Access to finance (steps 1 to 5):** CAPUCAS acts as a financial intermediary between its members, who often lack access to adequate financial products, and financial service providers, who do not have the means to reach out to small coffee producers. CAPUCAS obtains funding based on coffee sales contracts (see steps 1, 2, 3 and 4) from impact funds, such as Incofin’s Fairtrade Access Fund, and from local banks. CAPUCAS then provides its members with short-term loans to finance the coffee harvest (to buy inputs, fertilizers, etc.) and with medium- to long-term loans to foster their productivity, for example, by acquiring equipment or by renewing plantations affected by diseases (see step 5.)
- **Quality enhancement and commercialization (steps 6 and 7):** CAPUCAS also acts as a trading partner for its SHF clients, conducting quality controls, providing processing services and eventually purchasing the certified coffee beans (see step 6), therefore reducing the risk of rejection of export assignments. CAPUCAS assumes the responsibility for commercializing the coffee to international buyers (see step 7).
- **Enhancing productivity and fostering innovation (step 8):** In addition to loans, farmers receive technical assistance (TA) from CAPUCAS in all activities that relate to production (including fertilization, pest and disease control, etc.) and can also purchase their agricultural inputs directly from the cooperative (see step 8). For example, CAPUCAS has established a plant to produce organic inputs according to formulas that ensure good “cup quality” that are then sold to members at lower-than-market prices. The capacity building offered by CAPUCAS has proven crucial to ensuring an adequate quality of the coffee supply.

*Each number in Figure 1-1 is further detailed below

- **Certification and price stability (step 9):** CAPUCAS supports its members in obtaining “fair trade”, organic and other certifications to ensure fair and relatively stable prices. Through certification, quality control and direct contacts with importers abroad, CAPUCAS can reduce the risk of price fluctuation.
- **Access to information and markets:** By promoting members’ coffee through fairs and business tours, CAPUCAS has developed a recognized brand and achieved sustained growth in export volume. The cooperative has established fixed contracts and long-term partnerships with fair trade importers in Europe, the US and Japan, helping to ensure a more stable income stream for its SHF members.

An SPO may function as catalyser of financial resources from FIs to SHFs by acting as:

- Financial intermediary, borrowing from an FI and then re-lending to its SHF associates;
- Broker, promoting financial products from an FI to SHFs;
- Guarantor, partnering with an FI to mitigate lending risks through the SPO’s sales contracts.

THE ROLE of Financial Institutions

Access to finance is often a significant barrier to the development of an inclusive and well-functioning AVC. At the same time, AVC systems offer excellent opportunities for FIs to unlock smallholder market segments by utilizing risk mitigation, guarantee and pooling mechanisms made possible by value chain linkages.

While conventional lending relies heavily on the creditworthiness of the individual borrower, a value chain finance (VCF) methodology takes a systemic approach, looking at the entire set of actors, linkages and markets of a given value chain. **Financing decisions are made with reference to the health of the whole system**, rather than that of the individual applicant.

When FIs seek to attend the small-scale farming sector, embracing a VCF approach can bring several important benefits:

- By considering the links and transactions that take place between the SHF and

other actors of a chain (e.g. the sale of a predictable flow of agricultural goods to a viable buyer) as a collateral substitute, VCF approaches help address one of the main obstacles for SHFs in accessing funding – the lack of a physical collateral – and therefore **enable greater financial inclusion;**

- By exploiting existing linkages and intra-chain information, FIs gain a broader understanding of embedded risks and, consequently, are **better positioned to mitigate those risks;**
- By developing a thorough expertise of the whole agricultural system, financial institutions can **offer more appropriate financial products and services**, tailored to the specific needs of smallholders;
- Finally, by providing key non-financial services to AVC, financial institutions can contribute to the **development of more inclusive and sustainable market systems**, to which FIs can further expand their outreach.

Drawing upon the experience of IDEPRO, a Bolivian MFI, a number of critical steps in the design and implementation of

an inclusive VCF strategy aiming at the inclusion of SHFs are identified in Figures 1-2, 1-4 and 1-6.

Figure 1-2: Critical steps for a successful agriculture value chain finance strategy (Steps 1-2)



Identification of the VC

The selection must be made according to a set of pre-defined criteria, such as local/regional relevance, concentration of SHF, competitiveness, accessibility.



Mapping of the VC

Get a thorough understanding of the risks and opportunities linked to VCF.



Box 1-3:

Mapping of a value chain – IDEPRO and the Quinoa Value Chain

10 years ago, IDEPRO began financing the quinoa value chain through its inclusive AVCF methodology, PROCADENAS, because of the value chain's unique concentration of small producers and its impact on the livelihood of micro and small-enterprises in rural Bolivia.

IDEPRO employed a robust AVC mapping methodology comprised of three steps:

1. Defining the different “levels” within a value chain. Each level corresponds to a process or activity that adds value to the product. For instance, the five primary levels identified by IDEPRO for the quinoa value chain were: (i) input provisioning, (ii) production; (iii) processing; (iv) branding; and (v) trading..
2. Defining the “segments”, composed of various actors and processes, within each level of the value chain. For each segment, a different type of intervention is necessary.
3. Mapping the commercial relationships existing among the various levels and segments, following the flow of money and of the produce.

The mapping exercise focuses on identifying the key linkages of SHFs within the chain. Along the three mapping steps, the following criteria are taken into account to define a strategy for product design and delivery of capacity building services: (i) major concentration of SHFs within segments and levels; (ii) systemic support received by SHFs, i.e. vertical linkages to upper levels in chain; (iii) level of professionalism of the SHF segments.

Figure 1-3: IDEPRO quinoa value chain mapping

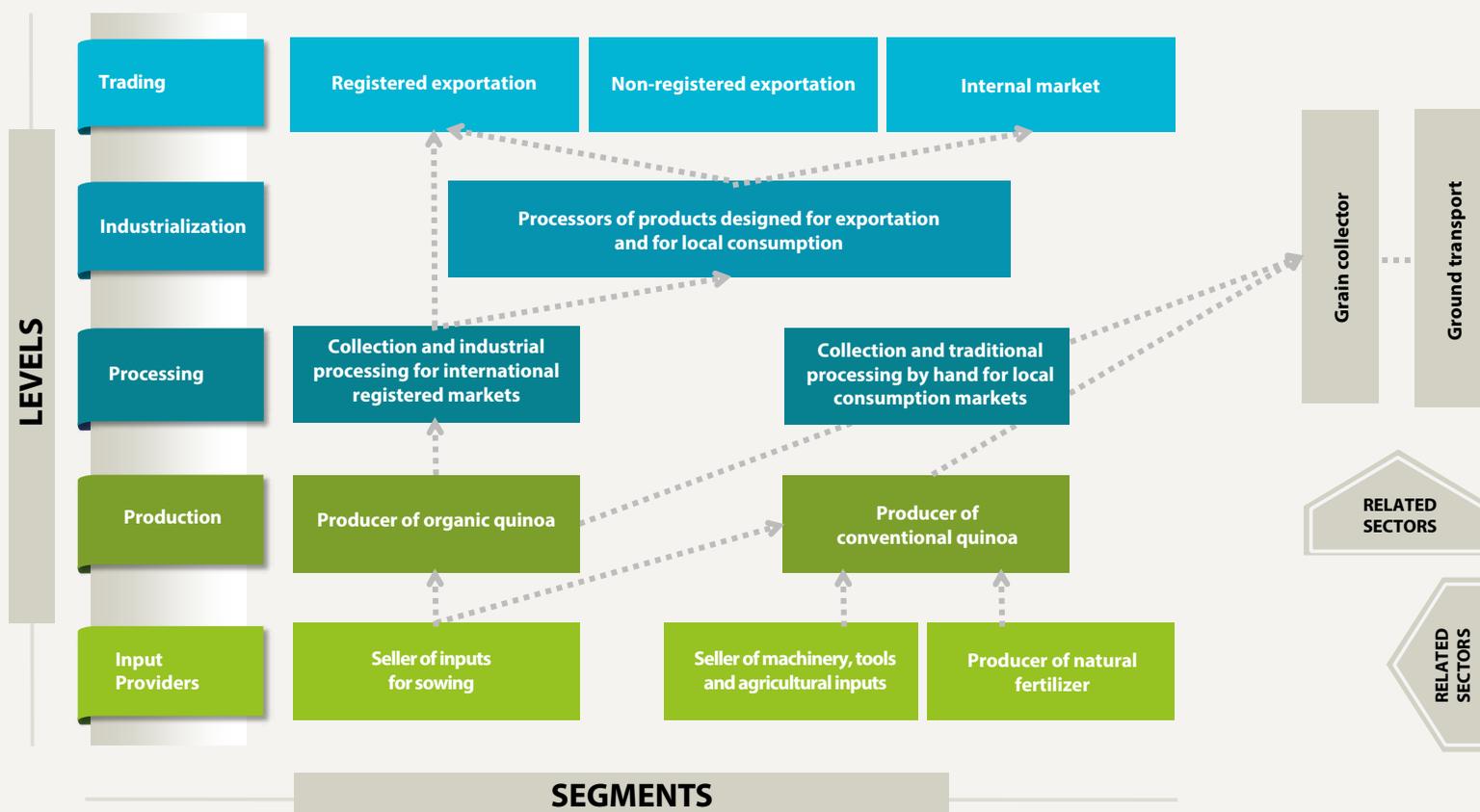


Figure 1-4: Critical steps for a successful agriculture value chain finance strategy (Steps 3-4)

3

Diagnostic or SWOT analysis

The business relationships existing across segments and among the actors are analyzed one by one.



4

Identification of bottlenecks and opportunities for intervention (See Figure 1-5)

This step is about finding an entry point and/or as it was the case for IDEPRO (see Box 1.3) identify structural threats



Box 1-4:
Identifying the bottlenecks: IDEPRO's experience with the Brazil nut value chain

Since 2005, IDEPRO has been attending the Brazil nut value chain through both tailored technical assistance and credits in the northern region of Bolivia. This value chain employs more than 20,000 smallholders.

IDEPRO initially structured its intervention through tripartite agreements with both SPOs and the producers themselves (see step 1 in Figure 1-5 below). The initial arrangement was that IDEPRO would provide loans to the SPOs, which would then automatically distribute these funds to the families involved in harvesting activities (see steps 1, 2 and 3).

However, IDEPRO quickly identified a problem at step 3 - the SPOs were misappropriating the funds and delaying disbursement of loans to producers, leading to liquidity issues for the SHFs and to the non-repayment of loans from the SPOs back to IDEPRO.

Thus, the institution decided to eliminate step 2 and to instead provide loans directly to producers (step 4), who continue to collect the Brazil nuts and sell them to the SPOs (step 5), the proceeds of which are then used to repay IDEPRO (step 6).

Figure 1-5: IDEPRO brazil nut value chain mapping

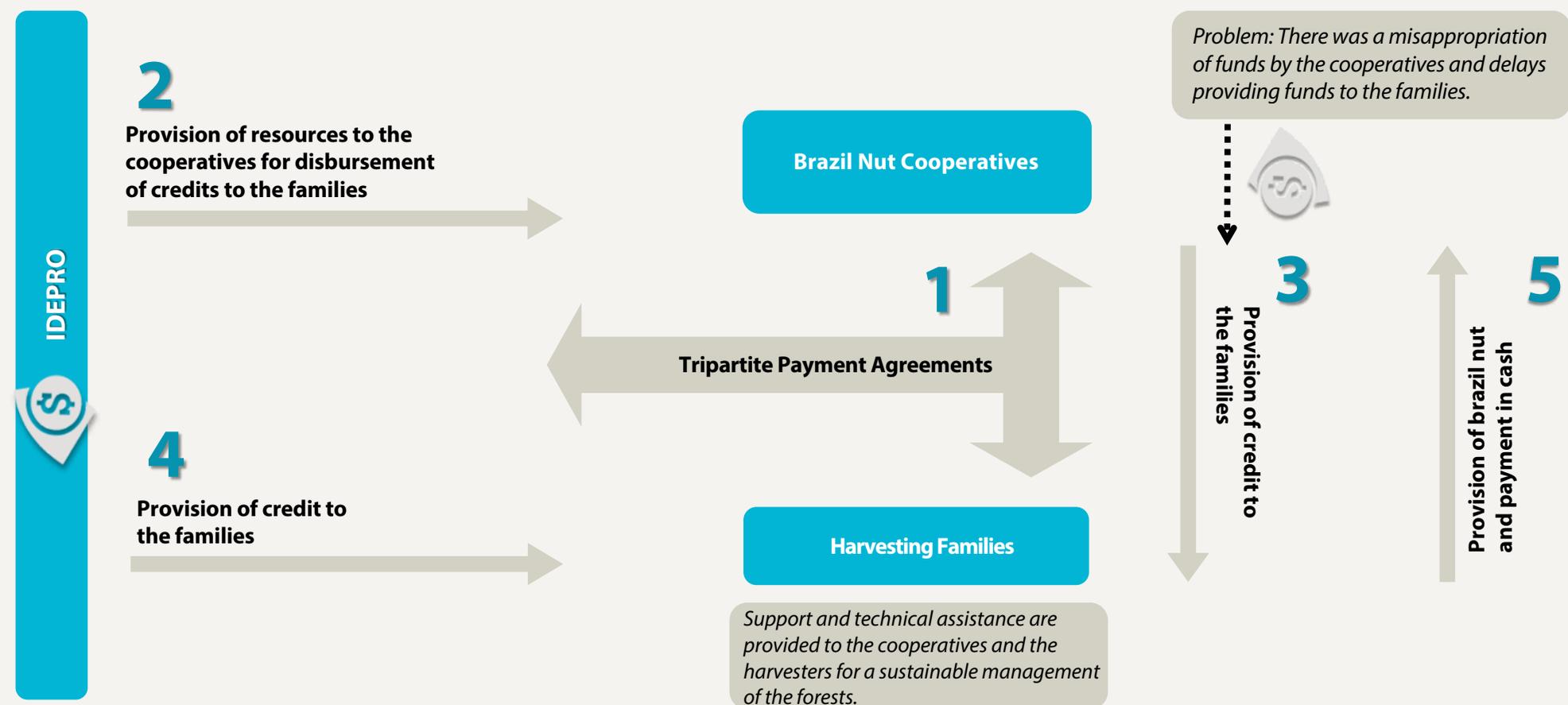
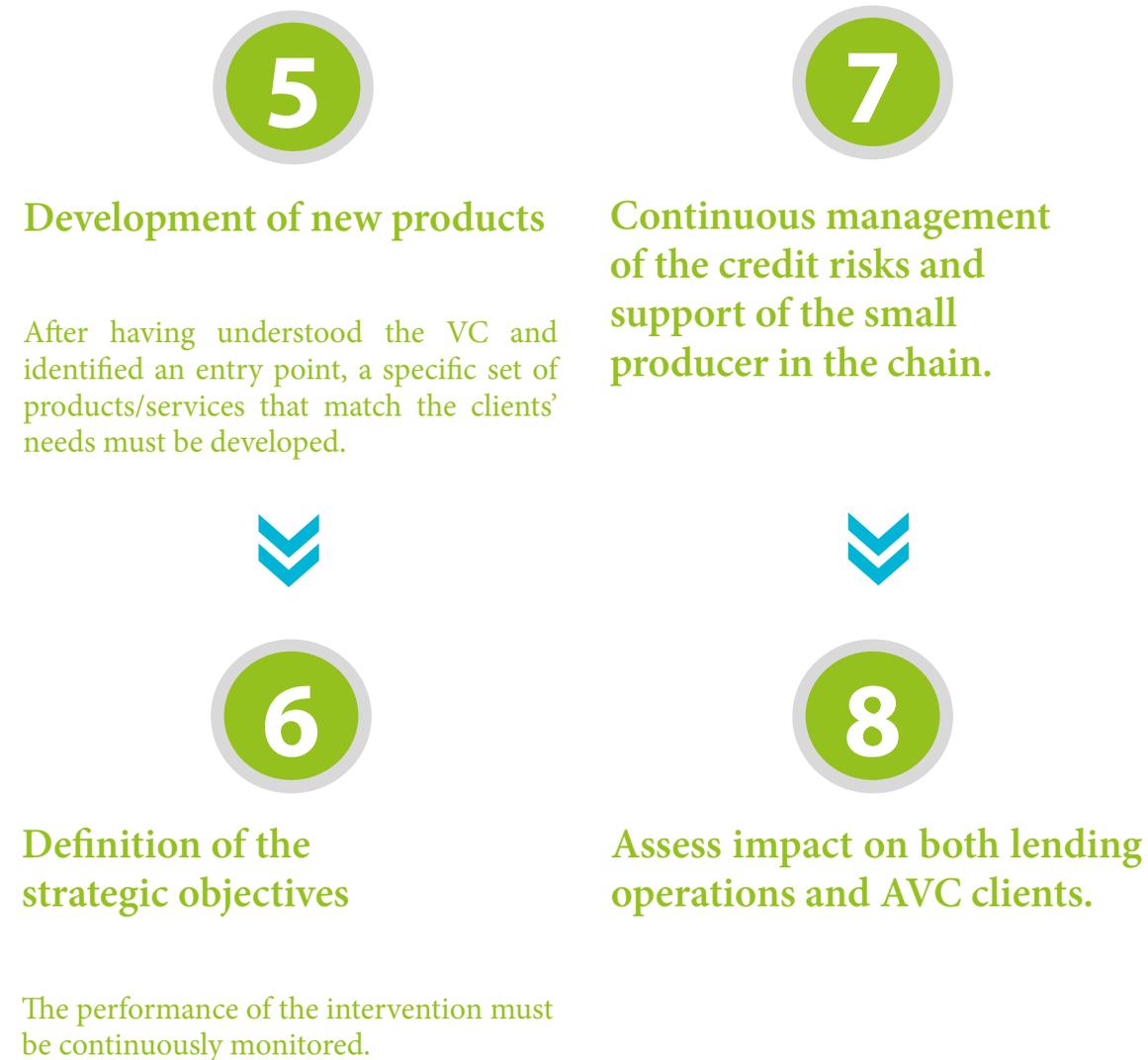


Figure 1-6: Critical steps for a successful agriculture value chain finance strategy (Steps 5-8)



Box 1-5:

Monitoring of AVC Performance and Impact

IDEPRO assessed that its PROCADENAS product has historically yielded better levels of portfolio volume and necessitated lower levels of provisions than the institution's traditional microcredit product (PROMICRO), in addition to demonstrating a remarkable impact on IDEPRO'S small producer clients.

An impact study conducted in 2015 reaching 699 clients (approximately 26% of the total clients attended with PROCADENAS) illustrated that the clients who had received a PROCADENAS loan the previous year recorded, on average, a 20% increase in revenues and a 38% increase in profits. Furthermore, the study results indicated that these loans led to an increase in job creation of over 50%. The combination of both tailored credit solutions and technical assistance to borrowers has been key in attaining these results

Experience has shown that AVC lending models can work in nearly any productive sector, across a variety of ecological settings (high plateau, valley, and tropics) and demographic areas (urban, semi-urban and rural). That being said, FIs should consider a host of key factors in order to implement a successful AVCF strategy:

1. There should be a clear willingness on the part of the FI to develop such a comprehensive and specialized offer. The decision to commit to AVCF should be made by the FI's board of directors, which should ensure buy-in by senior management and staff at all levels.
2. FIs should intervene only in strong and viable value chains that do not display structural problems, adverse public policy and/or a negative trend in key economic indicators.
3. In their early stages, AVCF methodologies may require additional investments before becoming commercially viable. An FI might consider subsidizing such investments, using revenues from other products, while the value chain becomes self-sustaining.
4. Starting from the base of the value chain by helping SHFs strengthen their relationships with providers and buyers, then diversifying the offer towards other segments can help promote consolidation of the whole chain.
5. Implementing a system for monitoring key indicators is essential for systematizing and socializing impacts of the intervention. To optimize effectiveness, such information should be commu-

nicated for institutional strategy and decision-making at least twice a year.

6. Offering technical assistance services to SHFs alongside financing is not essential, but highly desirable since it can increase social impact and reduce risk.

Enabling inclusive AVCs is a difficult task that may require the cooperation of a wide range of actors, who at different levels and with different expertise, can boost the sustainability of AVC systems and their impact on smallholder market segments. A **“super” chain facilitator** enabling multi-stakeholder partnerships and strengthening intra-chain linkages; a SHF **aggregator** catalysing key extension services and formalizing SHF segments; and a **financial institution** providing access to tailored financial products and services, represent types of key enablers for inclusive AVC development.

FIs seeking to engage in AVCF should be prepared to invest considerable effort and resources to deeply understand AVC actors, relationships and financial needs at each level and along each segment of a chain. By working in collaboration with these players, FIs may benefit from the comparative advantage of having in-depth knowledge of the AVC, as well as market-based risk management mechanisms, which can contribute to the design of sounder AVCF strategies.





2

CLIMATE SMART LENDING:

Innovations and opportunities for increased resilience

The **high vulnerability of smallholder farmers to climate change** deeply increases the riskiness associated with agricultural financing, often discouraging FIs from offering viable services despite widespread demand from SHFs grappling with the consequences of extreme climate events. As the patterns of droughts, floods and tropical storms become more unpredictable, FIs see themselves potentially exposed to mass loan defaults, sharp deterioration of their portfolio quality and increased loan provisioning needs, which could be coupled with a decline in solvency and financial sustainability.

The Latin America and Caribbean (LAC) region is extremely vulnerable to climate change, as are the 15 million family farms (controlling about 400 million hectares) operating in the region. The Intergovernmental Panel on Climate Change forecasts an increase

in temperatures in LAC of 0.4 - 1.8°C by 2020, which could cause, among other consequences, an increased prevalence of disease, water shortage and flooding. In such a context, the effects on agriculture are expected to be significant, with different levels of severity depending on the crop and geographical area in question.

This section presents the experiences of a handful of FIs, in partnership with other private-sector players, in developing innovative means of mitigating these climate-related risks and integrating climate-smart measures into their offer of financial and non-financial services.

MEASURING AND ANALYSING climatic risks

FIs involved in agricultural finance generally face three fundamental and interrelated questions when it comes to measuring agro-climatic risks:

- *To what extent is a certain geographical area exposed to potentially detrimental climatic events?*
- *How would the clients of that specific area be affected? How vulnerable is their production?*
- *How would this event affect the client's capacity to service the loan granted? In other words, how financially resilient is the client in the face of an extreme climate event?*

To address these questions, FIs have begun utilizing sophisticated IT-based risk management solutions that help to **estimate and monitor clients' exposure to agro-climatic risks**. The example in Box 2-1 below details how a Bolivian MFI, Sembrar Sartawi, developed a specialized software to administer production, meteorological, market and socio-economic datasets in order to include agro-climate related risk assessments into its loan appraisal process.

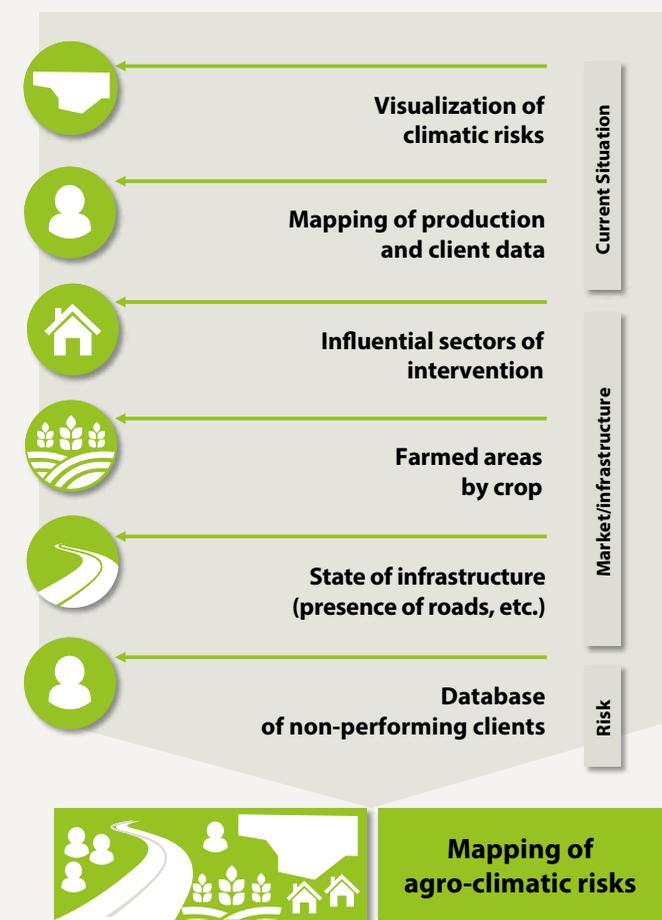
Box 2-1:

Assessing agro-climate risks – the GIRAS software by Sembrar Sartawi

Sembrar Sartawi is a microfinance institution committed to the development of the rural and productive sectors in Bolivia. With more than 45% of its total portfolio directed towards agriculture, the institution is increasingly exposed to agro-climatic risks and continuously seeks to better measure, understand and mitigate the risks it faces.

Thus, Sembrar developed Gestión de Información de Riesgos Agropecuarios y Sistémicos (GIRAS), a management information system designed to quantify and monitor clients' exposure to agro-climatic risks, as well as that of the institution.

Figure 2-1: Sembrar Sartawi's Mapping of Agro-Climactic Risks



GIRAS compiles and processes weather data from local meteorological stations as well as satellite and other aerial imagery to produce a series of thematic maps geographically visualizing climatic risks. The system simultaneously processes agricultural production and client livelihood data from Sembrar Sartawi's existing databases, aggregating the information to create a comprehensive and quantifiable measure of each client's vulnerability and resiliency before a climatic event occurs.

By merging the output of climatic risk analysis (step 1) with client-specific data on agricultural production and socio-economic vulnerability (step 2), Sembrar Sartawi is able to utilize data on agro-climatic risks at both the individual level, via its agro-climate risk index, and at the aggregate level, through agro-climate risk maps (picture above). Other factors such as (i) the institution's most concentrated sectors of intervention, (ii) farmed areas by crop and (iii) state of production infrastructure are further analyzed and mapped.

These different layers of data are then merged with information from non-performing clients in order to provide Sembrar Sartawi with a comprehensive view of clients' and the institution's risk exposure. Data behind the risk maps can be segmented to perform concentration analysis according to different criteria (for example, by level of risk, geographical area or crop), then used by senior management in day-to-day risk management activities and for long-term strategic operations.

GIRAS has allowed Sembrar to more effectively monitor and mitigate the systemic risks linked to agricultural production both for the MFI and its clients. Adequately managing its overall exposure to agro-climatic risks has also enabled the institution to increase its agricultural outreach, to help its clients better understand the agricultural and climatic risks they face and to maintain an excellent portfolio quality.

The evident benefits from processing and analysing agro-climatic data include:

- **Lower credit risk and improved portfolio quality.** Anticipating climatic events and monitoring portfolio concentration can enable FIs to take preventive actions (such as reducing concentration in high-risk areas or crops) and therefore reduce financial losses.
- **Tailored financial and non-financial services.** Based on agro-climatic information, loan officers can adapt the credit offered to specific production and risk exposure

patterns of the client in order to maximize a client's repayment capacity. Additionally, sharing data with clients to inform them about agro-climatic risks that may negatively affect their livelihood activities can allow them to put in place preventative measures.

- **Responsible financial inclusion.** Financial institutions can better profile their clients based on their exposure to agro-climate risks and better evaluate their repayment capacity in case of shocks, which can protect the client against over-indebtedness.

SOURCING RELIABLE AND ACCURATE agro-climatic data

Accurate and reliable agro-climatic risk assessment tools are per definition "data-intensive". Access to these data represent one of the biggest challenges for microfinance players, either due to the availability (or lack thereof) and accuracy of existing datasets or due to prohibitive costs related to their generation and/or collection.

While historically agro-climatic information has been provided solely by regional, inter-governmental organizations or specialized state-sponsored agencies, the increasing demand for tailored agricultural and climatic data has progressively driven **private-sector players** into the market. These companies

gather and process agro-climatic information, making it accessible to and actionable by end-users through early warning and/or forecasting tools as well as through sector-specific products and solutions. Box

2-2 below explains how CelsiusPro uses big data to offer innovative platforms for environmental risk analysis and evaluations.

Box 2-2:

CelsiusPro's Environmental Monitoring System (EMS)

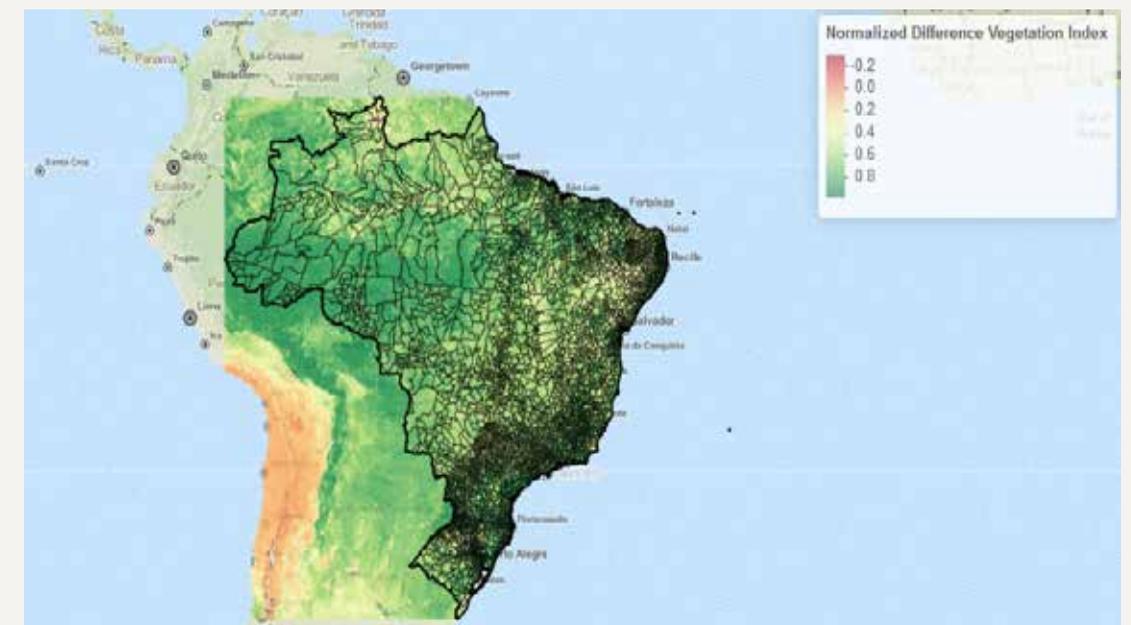
Recognizing the scarcity of weather risk assessment tools in the context of accelerating climate change, CelsiusPro, an award-winning Swiss company specialized in the design of tailored weather index products, developed the Environmental Monitoring System (EMS), a proprietary platform for gathering, processing and visualizing agro-climatic risks.

Environmental Monitoring System (EMS)

EMS is a system that enables organisations of all types, from corporations to farmers' cooperatives, to access and visualize multiple sets of high-quality climatic and agricultural data (from satellites, ground measurement devices and additional data providers) and to run segmented analyses in order to quantify how, when and where the impact of climate events might be felt. In total, more than 21 databases relating to different technical criteria – such as rainfall, air temperature, soil surface temperature or soil moisture – are available through EMS.

FIs may utilize this kind of platform to build on their risk assessments tools or to complement in-house datasets with more complete and accurate climate and agriculture data.

Figure 2-2: Celsius Pro's Environmental Monitoring System



TWOFOLD AGRO-CLIMATIC RISK MITIGATES: index-based insurance solutions

In addition to agro-climatic risk assessment tools, innovative agricultural **insurance solutions** are emerging as a valuable mechanism for bolstering agricultural financing supply and demand and providing consistent responses to climate change for both FIs and smallholder producers. In recent years, practitioners have been exploring innovative means of providing insurance risk coverage in developing countries where traditional agricultural insurance schemes, such as indemnity insurance, may not be feasible (too costly) for low-income segments. On

the other hand, in the case of **index-based – or parametric – insurance** products, compensation is provided to the insured party if a specific weather event happens and the pre-defined weather index goes above or below a predetermined level, or trigger, in a specified geographical area, during a specified period of time. Box 2-3 explores index-based insurance solutions that agriculture-focused FIs and smallholder farmers can utilize to curb the potentially harmful effects of climate change.

Box 2-3:

Index – or parametric – insurance solutions

There are three primary types of index-based insurance products for the agricultural sector:

Weather-index insurance: The indemnity is based on the occurrence of a specific weather event measured over a pre-specified period of time at a pre-specified weather station. The pay-out is independent of any damage and is paid whenever the realized value of the index exceeds or falls short of a certain threshold. The pay-out is calculated based on a pre-specified sum insured per unit of the index (for example, US\$ / millimetres of rainfall).

Area-yield index insurance: A specific yield is insured as a percentage of the historical average of a pre-specified area. In this case, the pay-out is independent of any damage or climatic event; it only depends on the realized (harvested) average yield for the area. If the realized average yield is below the threshold, pay-out is automatically triggered to every insured member of the area, regardless of the actual yield on a policyholder's farm. This type of insurance product notably requires a quality source of historical data to establish the normal average yield as well as the insured average yield.

Normalized difference vegetation index (NDVI) also called satellite index insurance: NDVI insurance products are similar to weather index insurance in their application except that with NDVIs, indices are constructed using satellite image time-series (which are a set of satellite images taken from the same scene at different times). As with weather index insurance, the pay-out occurs whenever pre-defined thresholds are crossed. NDVI insurance products are mostly applied for agricultural activities related to the quality of the pasture (i.e. livestock).

With regard to smallholder market segments, index-based insurance solutions present some unique advantages over traditional insurance products:

- **Increased transparency.** Index insurance contracts normally allow for direct access to the information on which the payouts are cal-

culated. No on-farm loss or damage assessments are necessary, which helps to avoid conflicting judgments.

- **Minimal adverse selection.** Adverse selection occurs when an insured party keeps hidden information about his or her risk exposure, which might affect the premium price and/or coverage conditions

- **Management of correlated risks.** Index products work best where there are correlated risks. With traditional products, perils such as drought are challenging to insure.
 - **Low operational and transaction costs.** Index insurance requires limited individual underwriting procedures.
 - **Rapid payout.** Measurement of weather station data, with no field loss adjustment, allows for rapid disbursements.
- A more widespread coverage of agricultural insurance covering smallholder farmers at the micro-level depends heavily on the involvement of different players, which can help bolster the infrastructure of insurance markets in developing countries.

Key players in the **insurance value chain** include:

-
- **Macro level organizations**
Governments, Financial Regulators and Multilateral Organizations can actively work to (i) improve the existing financial infrastructure, (ii) support the availability of meteorological data in rural areas and (iii) design enabling regulatory environments.
 - **Meso level organizations**
Non-governmental organizations (NGOs) can raise awareness as well as provide basic infrastructure and incentives for the adoption of insurance products.
Insurers and re-insurers can develop new products that are easy to understand and that allow for rapid, transparent and

fair compensation in the aftermath of a disaster. In many cases, local insurers do not have the know-how, skills or financial resources necessary to commercialize agricultural insurance portfolios. However, re-insurers – like Swiss-re and Munich-re – can provide advantageous risk transfer mechanisms and negotiate sustainable fronting solutions.

Financial institutions can open their networks, leveraging their credibility and proximity to the SHF, to allow insurance service providers access to the FI's client base. FIs can facilitate direct access to their clients or instead act as distribution channels for the insurance service provider.

-
- **Micro level organizations**

Input suppliers and processors can help collect data from and raise awareness of insurance products among farmers.

How an FI may form part of a multi-stakeholder partnership with private-sector organizations (NGOs, insurers and re-insurers, financial institutions, input suppliers, etc.) to develop more efficient and sustainable insurance provisioning schemes is illustrated in Box 2-4, which describes the example of Kilimo Salama, a successful multi-stakeholder agricultural insurance scheme in Kenya.

Box 2-4:**Critical factors for sustainable agricultural insurance schemes**

Kilimo Salama (“Safe Agriculture”) is an insurance program designed to protect small-scale Kenyan farmers from significant financial losses in the event that drought or excess rain negatively affect their harvests. The project, a partnership between Syngenta Foundation for Sustainable Agriculture, UAP Insurance, and telecoms operator Safaricom, sought to involve micro, meso and macro-level actors, in order to scale up impact.

The project involved:

- **Agricultural and insurance specialists:** Syngenta and UAP Insurance combined their respective expertise in sustainable agricultural and insurance administration to develop the index-based weather insurance product.
- **Re-insurance company:** SwissRe provided capacity building at different levels along the insurance value chain as well as reinsurance solutions
- **Telecom experts:** Safaricom developed a mobile phone application to register the SHF’s personal details into a centralized system. In the event of excess rain or drought, funds were then automatically transferred into the farmer’s M-PESA mobile wallet account
- **Various local actors (microfinance institutions, local cooperatives and rural retailers):** These local organizations, with direct access to the clientele, helped raise awareness for the program among SHFs, facilitate their participation and collect data from farmers through the mobile technology. El programa Kilimo Salama llegó aproximadamente a 100.000 PP por un total de cerca de US\$ 8 millones en inversiones agrícolas aseguradas.

The Kilimo Salama program reached approximately 100,000 smallholder farmers for a total of about US\$ 8 million in insured agricultural investments.

Figure 2-3: Critical factors for sustainable agricultural insurance schemes



Just as AVCs rely upon linkages between actors at different levels to produce quality products, **developing sustainable agricultural insurance schemes depends on multi-stakeholder partnerships** to reach end-clients with tailored, effective and cost-efficient solutions.

A comprehensive response to agro-climatic risks: the Ecosystem-based Adaptation Approach

FIs are ideally positioned to catalyse comprehensive responses to climate change for SHFs. In addition to stand-alone **adaptive**

measures such as agro-climate risk assessments and agricultural insurance coverage, holistic approaches can encourage SHFs to take **preventative measures** to mitigate the effect of extreme climate events on their livelihoods. Crezcamos’ “ecosystem-based” methodology described in Box 2-5 represents one notable example of a holistic climate-smart lending approach.

Figure 2-4: Crezcamos's Microfinance Ecosystems-based Approach (MEbA)

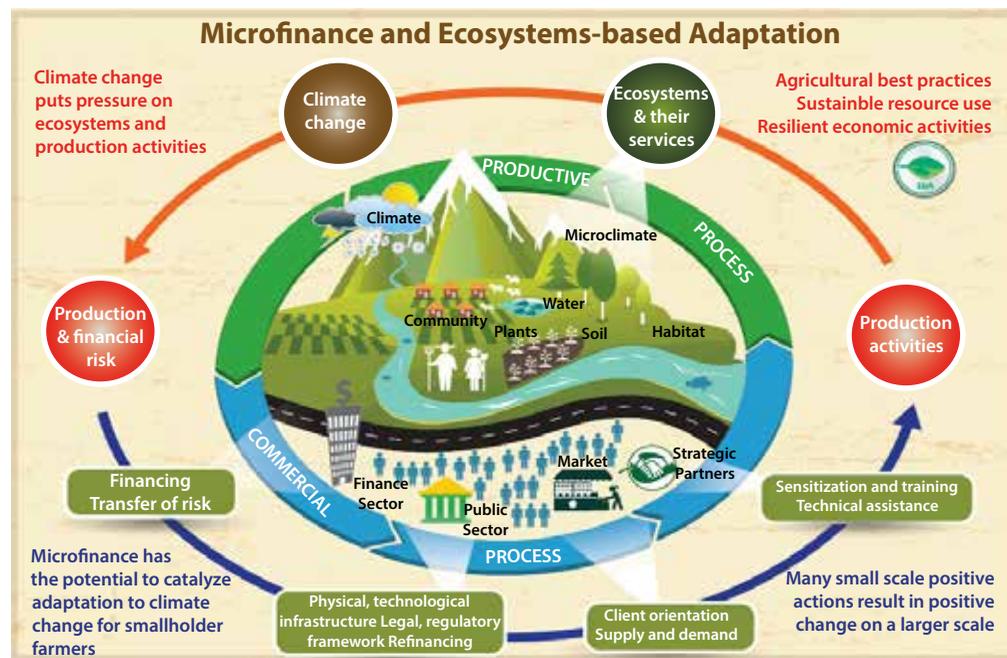
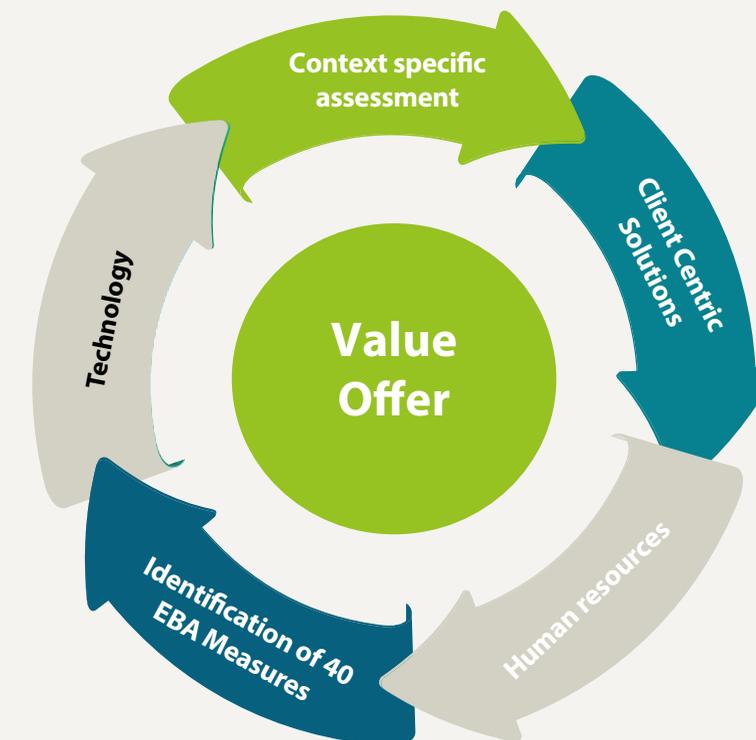


Figure 2-5: Steps in a microfinance ecosystems-based approach



Box 2-5:

Crezcamos's Microfinance Ecosystem-Based Approach

Upon realizing that climatic events posed an increasing threat to rural communities and that less than 10% of small agricultural producers in Colombia were receiving advisory support, Crezcamos, a Colombian MFI, decided to move away from its traditional credit methodology, which focused primarily on the small producer's creditworthiness.

Crezcamos, with the support of international stakeholders (UNEP, IADB), sought to implement a systemic methodology designed to better understand the unique needs and constraints of small producers and to provide them with a wide range of tailored products and services.

To this end, Crezcamos conducts a comprehensive assessment for each of its small producer clients that aims to assess his or her knowledge gaps and vulnerability to climate change and to define a critical route for greater resilience.

The MFI then provides the client with a combination of technical assistance (such as best farming and agriculture practices or sustainable business model management), production support (organic seeds/fertilizers, etc.) as well as access to new technologies, agro-climatic information and insurance products.

Furthermore, Crezcamos has formed a special team of experts in agronomy, veterinary medicine, economy and geography to collect and monitor technical data, ensuring the methodology is executed properly at each step.

As a result of its holistic approach to supporting smallholder farmer clients with financial and non-financial services, Crezcamos boasts considerable achievements:

- **Technical support** Crezcamos identified and systematized 40 EbA measures, resulting in 40 solutions for agricultural support including organic fertilizers and resistant seeds, soil conditioning, reservoirs, drainage systems, crop diversification and rotation, holistic management of plagues, land and water conservation, solutions for technological adaptation as irrigation systems, solar dehydration, solar aquaculture and greenhouses
- **Technology.** Crezcamos has developed an advanced software (Software CeUS) for the collection, processing and analysis of agro-climatic data. The software currently houses information and enables analysis of 27 crops and 7 livestock activities. Having standardized information available saves time for the loan officers, allowing them to focus on assessing the client's farm and on designing solutions adapted to their necessities.
- **Tailored loan products** Based on a thorough understanding of client needs and on the technical and financial considerations of producing a given crop, Crezcamos has developed a new loan product with variable capital payments that adjust to the customer's actual cash flow. At the same time, Crezcamos is offering agricultural insurance to its clients.

At the end of 2016, 500 EbA-oriented credits had been granted and over 1,000 small producers have been trained on EbA measures. Crezcamos plans to continue institutionalizing its “ecosystem-based approach” in order to reach all of its clients active in agricultural production with AVCF products and technical advisory support.

Engaging with smallholder farmers in a way that considers not only their financial needs but also the “natural infrastructure” they rely on for farming activities, can lead FIs to develop more holistic and longer-lasting interventions for rural clients facing the destructive effects of climate change. At the same time, **an ecosystem-based approach provides FIs with consistent comparative advantages by:**

- **Enhancing risk management practices** on production, market, social and environmental variables in agro-lending;
- **Increasing institutional know-how** and resilience to climate shocks by leveraging vital production, market, social and environmental information;
- **Enabling a more customized offering of products and services** through client-related data analysis.

Access to reliable and consistent agro-climatic information constitutes a key condition to the implementation of responsible agricultural financing for FIs. Because of this, complex and far-reaching climate change-related issues affecting both FIs' lending activities and clients' well-being cannot be resolved by FIs alone. Sectoral market players, such as data management

firms and insurance service providers, are stepping in to support FIs in attending rural clients by developing solutions tailored to the sector's specific challenges and leveraging technological innovations to reach a wider set of end-users. Increasing engagement of actors at all levels (micro, meso and macro) makes it possible to explore effective, scalable and sustainable climate smart lending approaches that address the systemic disadvantages faced by smallholder farmers.

For FIs seeking to respond systematically to climate change and its effects on the livelihoods of SHFs, with both risk mitigation solutions and climate adaptation measures, the following factors are quintessential to success:

1. Implementing **multi-stakeholder partnerships** and relying on expertise from different sectors to have access to both funding and tailored products and solutions;
2. Embracing **IT-based tools and technologies** to optimize operations and scale-up outreach;
3. Building **awareness among all system players.**



3

DIGITAL FINANCIAL SERVICES

As a tool to expand financial inclusion in rural areas

Digital financial services (DFS) have emerged as a powerful tool to expand access to the formal financial system, building upon of the **rapid growth of digital and mobile telephone infrastructure** and the **advent of branchless banking** (which offers the ability to transact outside of a traditional bank branch).

From this perspective, the potential to drastically reduce distances between FIs and their customers in hard-to-reach areas, enabling transactions at a fraction of the cost relative to conventional brick and mortar operations, represents an opportunity to deepen outreach to underserved communities that FIs should explore.

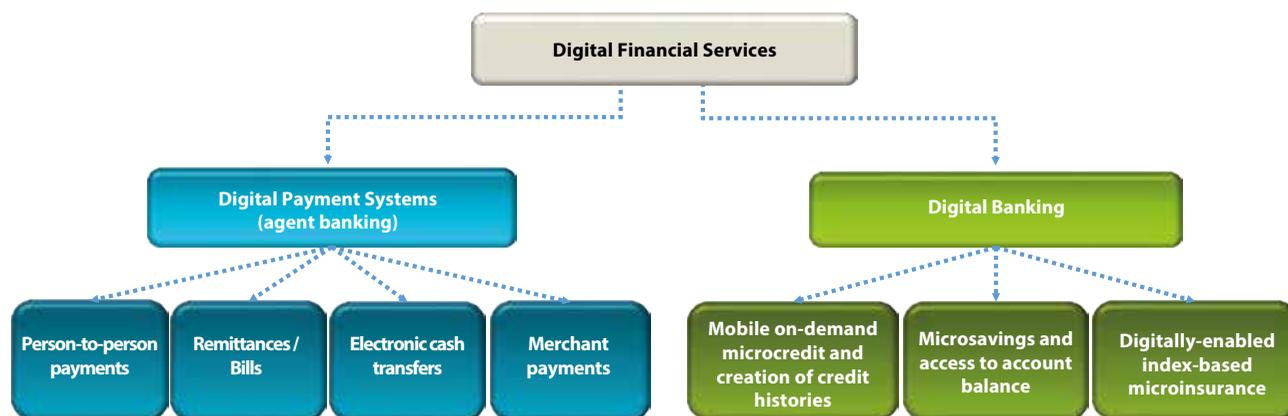
The examples that follow delineate the primary benefits of embracing DFS while presenting practical opportunities for FIs to “go digital” through agency banking models and mobile money channels.

THE SCOPE OF PROMOTING digital financial inclusion

As illustrated in Figure 3-1 below, DFS is a broad category that includes **digital (or electronic) payments**, and **digital banking** (remote provision and use of

financial services including, but not limited to, credit, insurance and savings) that can be offered either via the internet or via mobile phones.

Figure 3-1: DFS products and services



DFS are distinguished from their traditional counterparts by a number of features - for example, more secure payments and quicker money transfers when cash is eliminated from a transaction, greater traceability of the payment process, and increased flexibility in terms of the range of products financial institutions can offer. Such characteristics make DFS highly suitable for addressing the unique pain points, such as long distances, sparse populations, weak infrastructure and high transaction costs,

that FIs face in attending SHFs with formal financial services. Particularly in countries lacking the technical and commercial infrastructure for automated teller machines (ATMs), digital strategies can be a low-cost means for FIs to expand access to financial and non-financial services in rural areas. For further information on the benefits of embracing digital financial services for SHFs and FIs, refer to Figures 3-2 and 3-3, respectively.

Figure 3-2: Benefits of adopting DFS for smallholder farmers

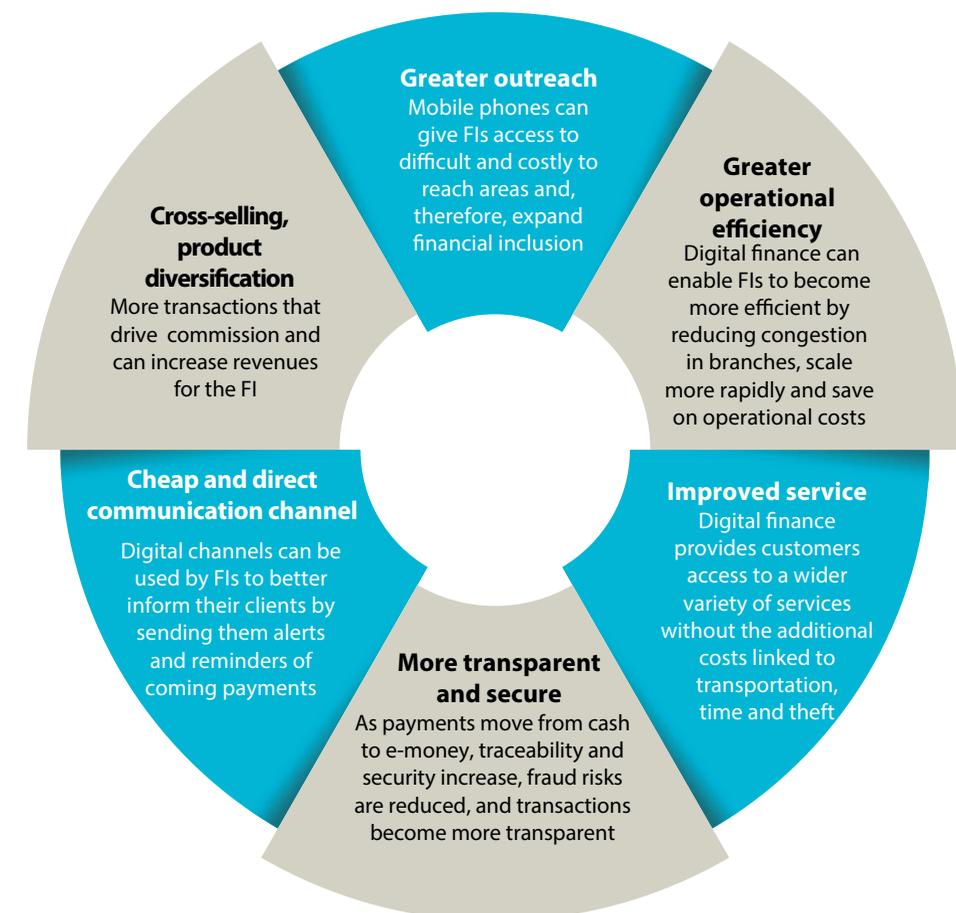
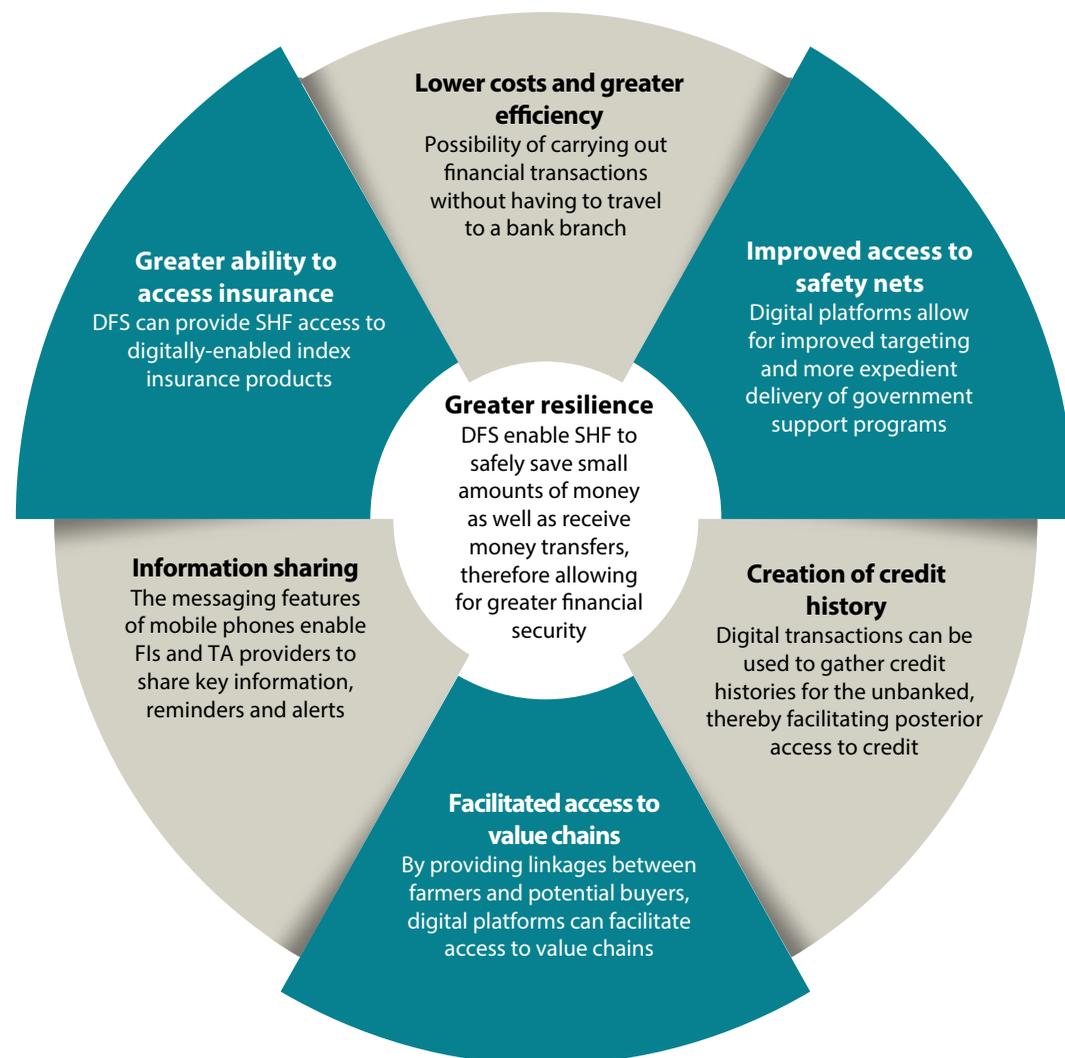


Figure 3-3: Benefits of adopting DFS for financial institutions



PENETRATING RURAL AREAS through agency banking models

Banking agent networks, which deploy agents equipped with digital devices to provide financial services outside of conventional bank branches, **have emerged in Latin America as the foremost solution to extend outreach in rural areas**. For years, private-sector organizations – such as FIs, postal services, retail chains and SPOs – have engaged local merchants as conduits of basic financial services (person-to-person (P2P) transfers, bills and tax payments) in remote settings that would not normally qualify for the physical presence of a branch.

Countries like Brazil and Colombia, for instance, have cultivated an impressive financial infrastructure which covers 100% of

their municipalities¹⁻², with tens of thousands of banking agents spread across various regions. These two countries have been able to do so thanks to progressively favorable regulatory environments, which allow for the wide adoption of branchless banking strategies by different industry players and for a variety of banking services, similar to those offered at a conventional bank branch.

Two examples of FIs deploying effective agent banking models in response to the varied banking needs of their clients, are presented in the two boxes that follow.

¹Source: <http://www.cgap.org/blog/replication-limits-m-pesa-latin-america>

²Source: <http://www.cgap.org/blog/colombia%E2%80%99s-recipe-100-agent-coverage-aggregation-sharing>

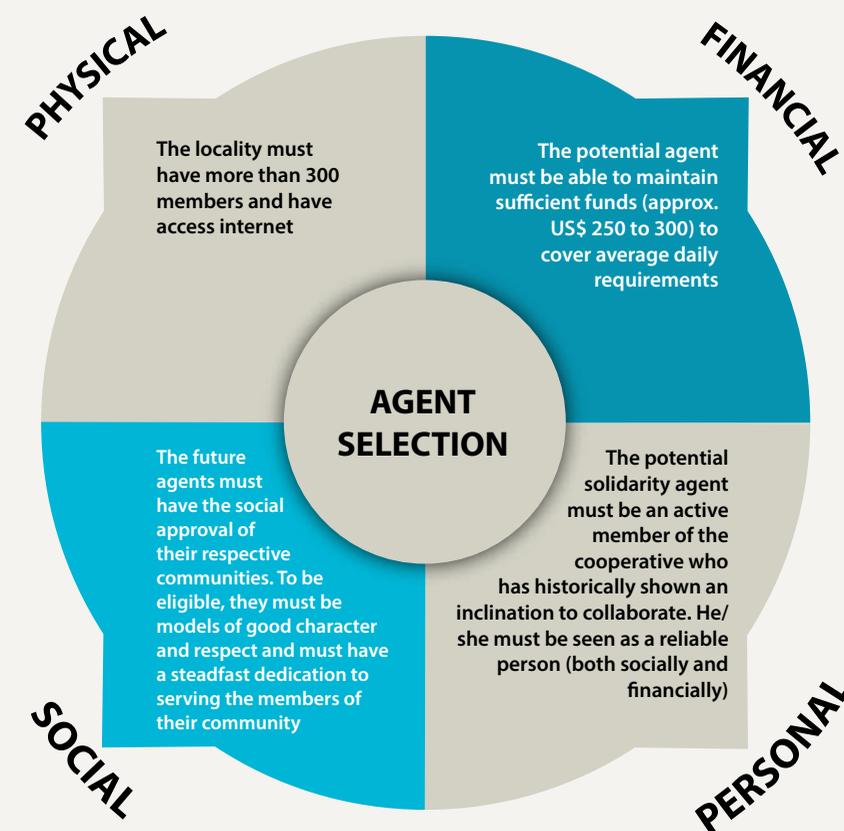
Box 3-1:**Jardín Azuayo's "solidarity correspondent agents"**

Jardín Azuayo is a savings and credit cooperative based in Cuenca, Ecuador. Faced with a low smartphone penetration rate among its clients, the institution developed a network of what it calls "solidarity correspondent agents" to serve its clients in the most remote areas of the country.

Jardín Azuayo's solidarity correspondent agents function like traditional banking agents. Often the owner of a local commercial outlet, the agent is contracted by Jardín Azuayo to process clients' transactions in place of a branch teller. Agents are equipped with a point-of-sale (POS) card reader, a barcode scanner to scan bills for payment transactions and a personal computer (PC) that connects directly to the cooperative's server. Much the same as other agent banking schemes, Jardín Azuayo's solidarity correspondents allow the FI to offer services relating to deposits (savings), withdrawals, credit and bill payment and account balance inquiries.

The cooperative's innovation, however, has been in working directly and solely with its members, rather than contracting external agents. To do so, the institution uses a comprehensive selection process for its agents, which considers their physical location in addition to financial, personal and social attributes, as detailed in the quadrant below.

Figure 3-4: Selection criteria used by Jardín Azuayo to select solidarity correspondent agents



The solidarity correspondent agent is elected by a local assembly comprised of members of the community who will eventually use the agent's services.

In addition to receiving a commission on each transaction administered, the selected solidarity agents become strategic allies of the cooperative and assume positions of leadership and social prestige within their respective communities. Via its participative selection process, the cooperative incentivizes its members to collaborate with and support one another.

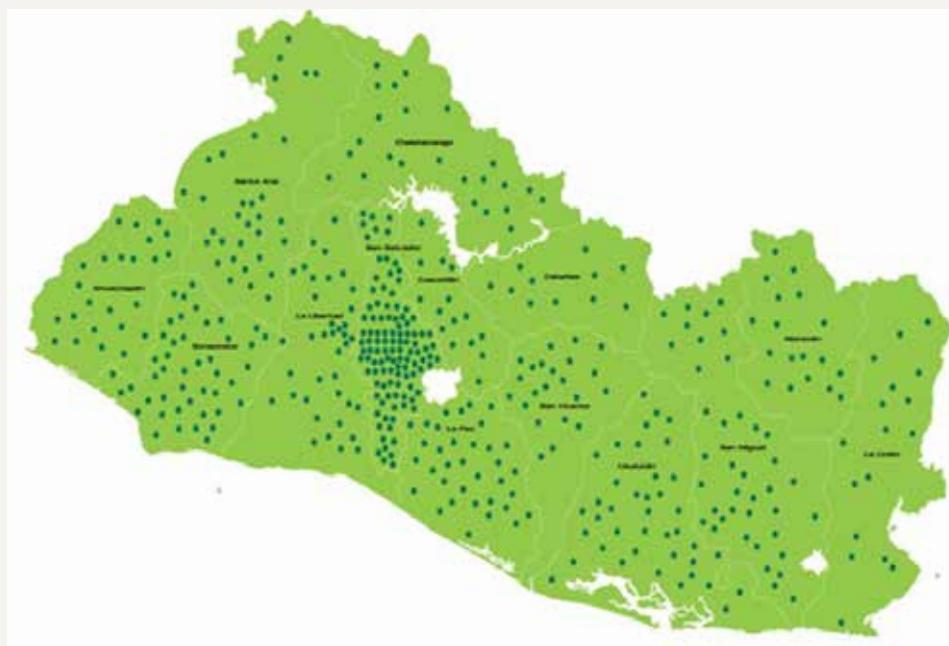
Initial studies have shown that greater proximity to clients also brings significant benefits to the cooperative such as: (i) reduction of operational expenses, (ii) decrease in its defaulting portfolio (-35%), (iii) an increase in its rural portfolio (+25%) and (iv) increase in savings (approx. 35 US\$ saved monthly per member thanks to the banking agent model).

Box 3-2:**“Fede Punto Vecino” – The largest network of banking agents in El Salvador**

Fedecredito is a federation of 48 Credit Unions, 7 Workers’ Banks and 2 insurance companies in El Salvador. Since 2012, Fedecredito has utilized its agent bank network, Fede Punto Vecino, in order to better attend isolated rural communities with services such as deposits, money transfers, and cash withdrawals from savings accounts or with credit cards, online loan and bill payment, remittance services and delivery of government support programs.

After 5 years of implementation, the federation’s network consists of over 235 correspondent banking agents throughout the country, the largest such network in El Salvador. 216, or 92%, of the federation’s 235 agents are located in small rural villages or hamlets.

Figure 3-5: Fedecredito’s non-bank agent network in El Salvador (2016)



Note: This map illustrates the organization’s entire network, including the federation’s full-fledged branches and ATMs.

With a presence in 196 municipalities (out of a total of 262), such extensive coverage (see Figure 3-5 above) allows Fedecredito to achieve two important goals: (i) facilitating access to finance – and, in particular, to savings and remittances, two critical services for the country’s remote rural communities – and (ii) reducing exposure to the insecurity phenomenon present in El Salvador, which is less acutely felt in rural areas.

Always seeking to further improve customer service, Fedecredito plans to launch a mobile wallet product for its correspondent banking network.

Thus far, banking agents have mainly been deployed by FIs to administer payments and P2P domestic remittances³, leaving room for innovation in extending access to a broader range of digital financial services.

One of the foremost challenges for FIs is indeed moving forward to offer, and more importantly to promote, a more comprehensive spectrum of remote financial products and services, such as withdrawals, deposits, pre-approval of credit and simplified current account opening to further financial inclusion in underserved rural areas.

³ In Brazil and Colombia for instance, the payment of utilities, taxes, and other public fees, payments of bills and other fees to the agent’s parent financial institution, and transfers between individuals make up more than 75% of the transactions through agents (Source: Ibid).

A WAY FORWARD for digital financial inclusion in Latin America

Given the current landscape, interested FIs will encounter two primary paths to engage in digital finance - mobile banking or digital payment systems – though **adapting such services to a given local context depends on the demand, regulatory environment, and specific market conditions.**

Though financial regulators and government bodies are increasingly recognizing the valuable role DFS can play in financial inclusion and are looking to unlock this potential by establishing enabling regulatory environments, much work remains to be done.

In the case of Latin America, the absence of legal and regulatory frameworks has constituted a major impediment to the development and adoption of mobile

money. For many years, regulators in the region have taken a cautious approach, prohibiting non-banks, such as mobile network operators (MNOs) and microfinance institutions, from directly providing mobile financial services.

Nevertheless, in recent years, Latin American countries have begun to broaden the spectrum of DFS provision. Lifted by success stories such as the M-PESA service⁴, according to a recent report from the Global System for Mobile Communications Association (GSMA), 6 of the 19 Latin America countries (Bolivia, Brazil, Guyana, Nicaragua, Paraguay and Peru), have adopted an enabling regulation for mobile money, up from only 2 in 2012⁵ (see Figure 3-6 below).

⁴ The M-PESA service was initially launched in 2007 in Kenya and has since expanded Afghanistan, South Africa, India and more recently Romania and Albania. It allows users to deposit, withdraw, transfer money and pay for goods and services with a mobile device

⁵Source: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/09/2015_GSMA_Mobile-financial-services-in-Latin-America-the-Caribbean.pdf

Figure 3-6: Status of regulatory environment for mobile financial services in LAC markets (2012-2015)



Source: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/09/2015_GSMA_Mobile-financial-services-in-Latin-America-the-Caribbean.pdf

The greater regulatory latitude for market players is progressively contributing to the growth of non-bank mobile money services providers (e.g. MNOs and other technology companies managing transactional and commercial platforms)

who are designing dedicated financial products for this market. Box 3-3 below describes the success of Tigo, a leading MNO, whose mobile money platform is pushing the boundaries of digital financial services in the LAC region.

Box 3-3: Tigo Money – financial services at the push of a button

Millicom International, is a worldwide telecommunications and media company, which offers a broad range of digital and mobile financial services primarily under the Tigo brand. The organization has recently launched a mobile wallet service called Tigo Money which is currently available in Africa and five countries of the LAC region (Guatemala, Honduras, El Salvador, Bolivia and Paraguay).

Via their mobiles, Tigo Money customers can access a range of services which includes:

- Sending and receiving money domestically via P2P transfer
- Receiving international remittances,
- Paying bills,
- Sending cash to anyone on any network
- Withdrawing cash at any Tigo correspondent cash agent,
- Self-top up anytime and anywhere,
- Making payments to merchants,
- And accessing account balances and transaction summaries.

Tigo Money has met a rapid uptake in the region, with more than 3 million people already using the service. Part of its success is due to the fact that it helps tackle the challenges of cost and safety in making payments, while also helping micro-entrepreneurs manage their liquidity⁶.

⁶ Source: <https://www.cgiar.org/sites/default/files/Focus-Note-Serving-Smallholder-Farmers-Jun-2014.pdf>

Digital financial services represent a **new frontier with the potential to make the adoption of innovative delivery channels easier and less costly**. Enabled by recent technological innovations, branchless banking models have disrupted the way financial services are provided to rural clients, empowering FIs to deliver services with greater operational efficiency and to achieve a higher degree of penetration among the hardest to reach clients.

While expansive agent banking networks serve as a solid foundation for the provision of basic financial services in remote areas, enabling regulatory environments are also

progressively fostering a broader adoption of DFS. FIs may look at these developments as well as to new key market players to explore new business models and partnership opportunities in order to implement more comprehensive and cost effective digital banking strategies. For forward-thinking FIs, exploring digital tools to address the sector's unique challenges and leveraging private sector partnerships can help unlock scalable models for bringing smallholder farmers into more inclusive financial markets.



4

TAKEAWAYS and the path forward

Overcoming the challenges of small-scale agricultural lending represents a key step for FIs seeking to improve the livelihoods and business opportunities of smallholder farmers. Fortunately, innovations in agricultural lending models and support services offer FIs unprecedented opportunities to boost their outreach in rural and underserved areas while deepening penetration in rural areas.

For example, increasingly **inclusive and integrated value chains** present advantageous entry opportunities for FIs to tap into traditionally prohibitive market segments, while innovations in **data management** and **digital financial services** hold the tremendous potential to address challenges of risk, scalability and cost that can discourage FIs from financing the agricultural sector.

In addition to exploring new lending models and enabling support services, FIs seeking to go the “last mile” in amplifying financial inclusion for rural populations must work to understand the complex financial, environmental and socioeconomic context in which SHFs are embedded as a fundamental prerequisite to providing appropriate financial services. Any sustainable effort to link rural populations to inclusive markets must be part and parcel of a broader intervention involving a variety of stakeholders contributing their specialized expertise. **Holistic approaches that empower local market participants with the technical knowledge, capacity building, financial products, and enabling market environment necessary to face the distinct challenges of smallholder farming hold the greatest potential to overcome inherent difficulties associated with agricultural lending.**

As suggested by microfinance practitioners and service providers that attended the “*Successful models for the financing of the rural and agricultural sector*” workshop in Jamaica, collaborative multi-stakeholder partnerships are critical to the success of any effort to draw smallholders into inclusive market systems.

Bridging the financing gap between the current supply of credit and the demand from smallholders requires that policy makers, multilateral organizations, private-sector actors, impact investors and non-governmental organizations collaborate to attend the needs of rural entrepreneurs and smallholder farmers in a meaningful and sustainable fashion. Only in this way, can FIs unlock the formidable potential held by agricultural sector, make rural economies more resilient and deepen financial inclusion for smallholder farmers.



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