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Fostering smallholder investment and innovation through inclusive financial services

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Abstract: *This article provides a framework, with supporting examples, for addressing finance for smallholder investment for innovation. Smallholder households function in interconnected 'systems' radiating outwards from the household unit: livelihoods, agricultural market systems, community and society, and infrastructure and policy. An inclusive livelihoods model analyses what would need to be true for uptake of innovations by women, men, and youth, and what financial and non-financial products are needed. 'Customer centric' integrated value chain financing solutions are tailored to smallholder market segments along eight pathways for growth. A roadmap for facilitating innovation and change using priority pathways, yet grounded in proven financial and development principles, is recommended. Tools and approaches include: value chain facilitation and capacity development – aggregation, market linkages, and private–public partnerships; financial tools – transaction-based financing, flexible products, and risk mitigators; and innovations in service delivery – digital and ICT applications.*

Keywords: smallholder, investment, inclusive finance, non-traditional finance, innovation

Needs and challenges in addressing smallholder investment for innovation

Appropriate and accessible smallholder finance has the potential to catalyse change in agricultural systems and to raise tens of millions of smallholder households out of poverty. Yet, despite vast research, analysis of systems, delineation of pathways, the development of new products and more, the majority of smallholders remain poor and vulnerable to poverty and to shocks such as from market prices and weather. Smallholder farmers produce 80 per cent of the food consumed in developing countries and yet lack the supports required to improve productivity, access to inputs, information, finance, and other services (IFAD and UNEP, 2013: 6).

While financial products and services can contribute to the uptake of agricultural innovations and a subsequent rise in productivity, and emergence out of poverty, appropriate and affordable financial services are rarely available to smallholder farmers. Some of this has to do with the nature of smallholder agriculture itself since many smallholders produce for low value markets with little growth potential.

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Without profitable markets, finance will not be effective. Finance alone is not enough. There is need for blended/complemented technical assistance and market information. The effectiveness of combinations and complementarities depend on a given context of the community setting, market, value chain, and so on.

Inclusive smallholder finance can stimulate and catalyse innovations in agriculture and the structure of markets creating a virtuous circle of mutual reinforcement and development. With a shortfall of over US$170 bn in smallholder agricultural financing (going beyond the credit mentioned above to include other forms of finance) that hinders major progress (Rural and Agricultural Finance Learning Lab and ISF Advisors, 2019), the greatest promise for scalable and sustainable innovation in uptake is to understand how innovation in adoption and finance are interrelated.

There are both demand and supply-side challenges in smallholder finance. Briefly, key demand-side barriers identified by CGAP and others are: lack of producer organizations and structured value chains, and limited capacity to handle loans due to uneven cash flow and low profitability of farming (Zook, 2014). These and other barriers can prevent farmers from accessing capital, even when it is available. Women farmers are especially disadvantaged when compared with their male counterparts due to lower levels of education, reduced access to resources, and a range of socio-cultural constraints (GIZ and DFID 2012: 5). In terms of agricultural work, the ILO (2016: xiii) reports that agriculture is the leading source of work for women in low-income and lower-middle-income countries. Over 60 per cent of working women in sub-Saharan Africa and South Asia are involved in agriculture, with their activities often focused on low paying or even unpaid labour-intensive tasks (Ibid.). Age also matters. Both youth and elderly are disadvantaged even though they are important in agricultural innovations and practices.

Gaps in the supply of financial services cut across long- and short-term credit, insurance, savings, and digital financial services. Many financial service providers are not fully aware of their customers' needs. A customer-centric focus, with customers

Box 1 Participatory approach

In India, Samunnati revised its agricultural financing approach from 'silo' finance to a 'longitudinal' participative approach. It found that for smallholder inclusion, financial intermediation needs to cut across all interventions and incorporate all stakeholders.

Source: Kumar, 2016

Box 2 Selective acceptance of change

Sometimes the seeming logic of opportunities to secure a more stable and often higher price, for example, are not taken up while other aspects are readily accepted. For example, in MEDA's smallholder work in Malawi and Pakistan, the poor readily accepted access to finance for improved inputs but when linked to using warehouse receipts or selling through commodity exchanges very few participated.

Source: Pakistan Microfinance Network, 2019

at the centre of the business decisions, processes and actions, align its products and services towards customers' perception of value. On the marketing strategy/outreach side, customer centricity emphasizes segmenting customers into groups based on viable characteristics and profiles, and each group's perceived value of the firm's products and/or services (MEDA. 2019).

Interconnected systems influencing agricultural households

Smallholder agricultural households function in a series of interconnected 'systems' radiating outwards from the household unit: household livelihood, agricultural market systems, community and society, and infrastructure and policy (enabling environment). The nature and interconnection of these systems differ according to context, creating complexity for the application of financial solutions across economies. In order to best implement solutions that catalyse uptake and adoption of innovations, one must understand these interconnected systems and tailor interventions according to their specific barriers and opportunities.

The agricultural household's finances are highly dependent on managing cash flow and agricultural cycles. Agriculture production is seasonal and the uncertainty of yield, price, access to markets, weather, and other externalities put the smallholder household in a vulnerable financial position (Zook, 2014). Hence, a *Theory of Change* must consider the household decision-making and factors influencing household perception of investment risks and opportunities.

Agricultural market systems are dynamic and context specific. It is important to *categorize smallholder farmers into specific market segments* in order to appropriately address specific market barriers and opportunities (e.g. product development and interventions based on customer-centric principles). Their resource base is a primary consideration, but these smallholder households are also culturally diverse, depending on geographic context, gender, race, ethnicity, religion, and other community and social influences. Such factors have a profound impact on their economic activities and are critical considerations in developing innovative products and services since they can constrict or facilitate smallholders' adoption of innovations. In addition, because of their small size of operations, financial solutions for smallholder households must consider formal and informal mechanisms such

Box 3 Differentiated value chain financing

In Bolivia, IDEPRO uses a Pro-Cadenas (Pro-Chains) model of financing for productive value chains that benefit smallholders. It intervenes in financing where it has a recognized demand, working with groups or individuals and intervenes across the value chains with a set of services of capacity development, technical assistance, and information. After a thorough value chain assessment, IDEPRO designs differentiated models of financing oriented to address identified weaknesses and take advantage of the potential for those in those value chains. It also works with the small, medium, and large agribusiness lead firm driver and promotes equitable market relationships with them and the smallholders.

Source: IDEPRO, 2016

as farmer cooperatives/associations or lead firms as potential aggregators and interlocutors for change.

Within market systems, it is also important to comprehend the distinct value chains, their business models and drivers, and the interests of those involved. Smallholders are often loosely connected or not connected to well-functioning value chains and miss out on the knowledge and financial flows along those value chains (Miller and Jones, 2010). Aggregation and partnerships that capitalize on the value chain relationships and increase the efficiency of the chain as a whole are key elements for innovation and growth. Financial service providers can leverage the relationship and form mutually beneficial partnerships as noted by the GPFI and IFC (2012: 43).

Policies governing agriculture, finance, trade, and infrastructure for all market actors play a crucial role in determining the efficiency of the market system. It is easy to recognize the value of transportation and logistics systems as the backbone of agricultural value chain systems. However, it is more difficult to ascertain the market value of other factors, such as food policy and food safety regulations, as while they might improve consumer safety and protection (and therefore ultimately affect buying choices), they increase operational costs and create barriers for smallholder farmer market access. An increasingly important component of infrastructure and government policy is the presence and role of information and communication technology (ICT). Digital access is not only useful for financing but also includes access to agronomy services, inputs and their prices and qualities, vendor communication, and market information.

Market segments

Market segmentation enables businesses and institutions to better understand client preferences, pains, desires, and aspirations, characteristic to that type of client. The segmented grouping is based on a variety of characteristics: demographics, behaviour, geography, sales transactions, among others – all leading to forecasting potential revenue and opportunity, determining whether to participate in that market and how to engage a target segment. Thus, a 'customer-centric' approach facilitates a firm to tailor its products and services for a unique customer experience, creating value targeted at a specific customer profile based on what the customer perceives as valuable according to their needs.

This approach also aids in understanding and addressing the risks in a comprehensive manner. For example, in Bolivia, Sembrar Sartawi, an NGO providing finance and technical services, uses a multi-layered risk management model for smallholders. It takes into account: 1) trends in gross value of crops; 2) regional land use analysis; 3) community location; 4) smallholder population; 5) communication infrastructure; and 6) hydro-meteorological analysis for the smallholder market segments to guide its financial and non-financial services (Hernandez, 2016: 72). Another example comes from MEDA's partnership with Bidhaa Sasa (meaning 'Products Now!' in Swahili). The rural logistics and financing company in Kenya works to bridge the gaps experienced by rural customers in terms of financing,

improved technologies, and household goods. With a base of 30,000 customers, over 70 per cent of whom are women, Bidhaa Sasa and MEDA sought to expand their product catalogue from household goods, such as solar lighting and clean cookstoves to test whether agricultural tools and products (i.e. portable grain silos, drying canvases, and sprayers) are desirable and valued by their customers, if appropriate financing and technical support were available. Bidhaa Sasa uses a customer-centric, 'lean start-up' approach that enables them to run experiments to tailor their product development and provide value to their smallholders' customer journeys and market segments.

The Consultative Group to Assist the Poor (CGAP) 'Smallholder Diaries' studies and publications (Anderson and Ahmed, 2016) used actual cash flow data coupled with household demographics to show household data insights such as multiple household income sources (Figure 1), cash flow strategies, and traditional risk management strategies. This type of data analysis leads to the identification of discrete market segments and financial service strategies targeted at specific household needs and aspirations.

In an earlier publication, a CGAP smallholder household segmentation framework developed by Christen and Anderson (2013: 12–17) identified three smallholder agriculture segments: 1) non-commercial smallholders (estimated at 300 million worldwide); 2) commercial smallholders in loose value chains (165 million);

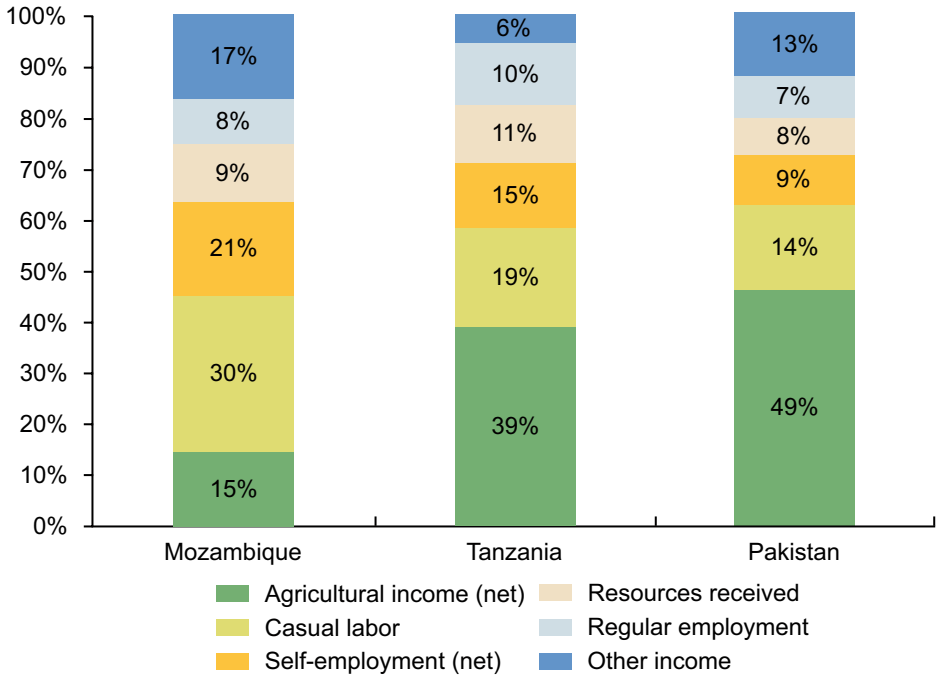

Figure 1 Smallholder mean proportion of income by source
Source: Anderson and Ahmed, 2016

and 3) commercial smallholders in tight value chains (35 million). The CGAP research is an encouraging example of data-driven information for guiding client segmentation. Among other lessons, it makes clear the value of smallholder household labour and alternatives that affect farming decisions.

MEDA, in its many years of work with smallholders has found that the business orientation of smallholders varies from that of some other market segment actors. Their net revenue of price and quantity sold is only part of their story. Smallholder costs of production, for example, place much higher value on return to family income rather than cash costs, since family labour has a much heavier bearing on their family income. Moreover, their perception of the 'cost' of risk is distinct, and likely a deterrent to growth unless risk mitigators, such as insurance, stable markets, and technical capacity building are present, which can reduce those risks.

Hence, an important next step in developing products and approaches for the business and financial needs of smallholder households is to take the information learned from field experience and research, such as that of CGAP, and segment it into broadly similar groupings so that services and approaches generally fit those within that grouping. Then, within the market segments targeted for intervention, further dissection is useful to look at the aspirations and characteristics of the market segment and their demands. From experience, it is noted that the assessment and design process must involve a high level of participation with the households to understand the underlying aspects that drive their aspirations. Table 1 highlights some of the key characteristics of the households within different market segments and their business and financial needs.

Table 1 Market segments

Market segment	*Characteristics*	*Business and financial needs*
1. Smallholder farmers – Subsistence	1. Family consumption, traditional food crops, and animals with little to sell 2. Largely disconnected from inputs, markets, and services 3. Low technical capacity and productivity 4. Livelihood insecurity and vulnerability to shocks	*Livelihood stability* ➢ Manage cash flow needs and savings value and growth ➢ Access viable markets to generate income ➢ Technical training and financial literacy ➢ Access to public services
2. Smallholder farmers – Subsistence + diversified incomes	1. Cash constraints and limited options for financial services 2. Expensive or inaccessible and untimely inputs 3. Semi-commercial farming, selling surplus 4. Storage and high post-harvest losses 5. Multiple, diverse, low-return income sources	*Livelihood stability and growth* ➢ Manage cash flow needs and savings value and growth ➢ Affordable, improved technologies and technical capacity ➢ Access viable markets to generate higher income ➢ Public and private storage resources and training ➢ Increased farm and non-farm income opportunities and payment transaction services

(Continued)

Table 1 Continued

Market segment	*Characteristics*	*Business and financial needs*
3. Commercial farmers – 'Loose' value chains in low value markets	1. Lack of suitable and timely options for financial services 2. Limited and expensive access to input suppliers and buyers, often selling ahead 3. Commercial, traditional markets with inconsistent and fluctuating prices 4. Storage and cash constraints and high post-harvest losses 5. Low profits and use of improved technologies	*Grow revenue* ➢ Manage cash flow needs and savings value and growth ➢ Affordable, improved technologies and technical capacity ➢ Increase volume (yield, hectares, loss reduction) and stable price opportunities ➢ Protect assets/minimize loss ➢ Medium- and longer-term investment in equipment and improved technologies and land management
4. Commercial farmers – 'Loose' value chains in higher value markets	1. Connected to commercial local buyers or open markets 2. Fluctuating demand and prices 3. Connected to input suppliers but constrained by cost of inputs and cash flow 4. Potential to access extension services 5. Storage technology constraints and high post-harvest losses	*Grow revenue and assets* ➢ Increase volume produced, quality, and price opportunities ➢ Reduce volatility of price and production ➢ Access to financial services for cash flow, savings store of value and payment transaction services ➢ Semi-specialized technical assistance ➢ Protect assets/minimize losses with longer-term investment
5. Commercial farmers – 'Tight' or coordinated value chains	1. Reliable markets, grown to specifications, with hedging opportunities 2. Connected to input suppliers 3. Access to agronomy services 4. Value chain linkage integration 5. Access to short-term finance and financial services	*Grow revenue and assets* ➢ Increase volume produced, quality, and price opportunities ➢ Reduce volatility of price and production ➢ Specialized technical assistance ➢ Increase productive assets, savings, and payment transaction services ➢ Longer-term investment in equipment, irrigation, storage, and land improvement

Non-conventional finance as a catalyst for agricultural innovation is most effectively focused on the three middle market segments (i.e. numbers 2, 3, 4 in Table 1). This is because the subsistence segment is restricted by marginalized markets, disconnection from services and inputs, and a need for significant financial literacy programming in order to effectively utilize investment of agricultural technologies. Commercial farmers in 'tight' or coordinated value chains already have greater financing opportunities from conventional sources such as banks.

Tailored solutions

Tailored solutions are needed for the distinct market segments, contexts, and perceived needs and opportunities. Using Figure 2 as an example, for the market, the intersection of commodities, market actors, value chain relationships,

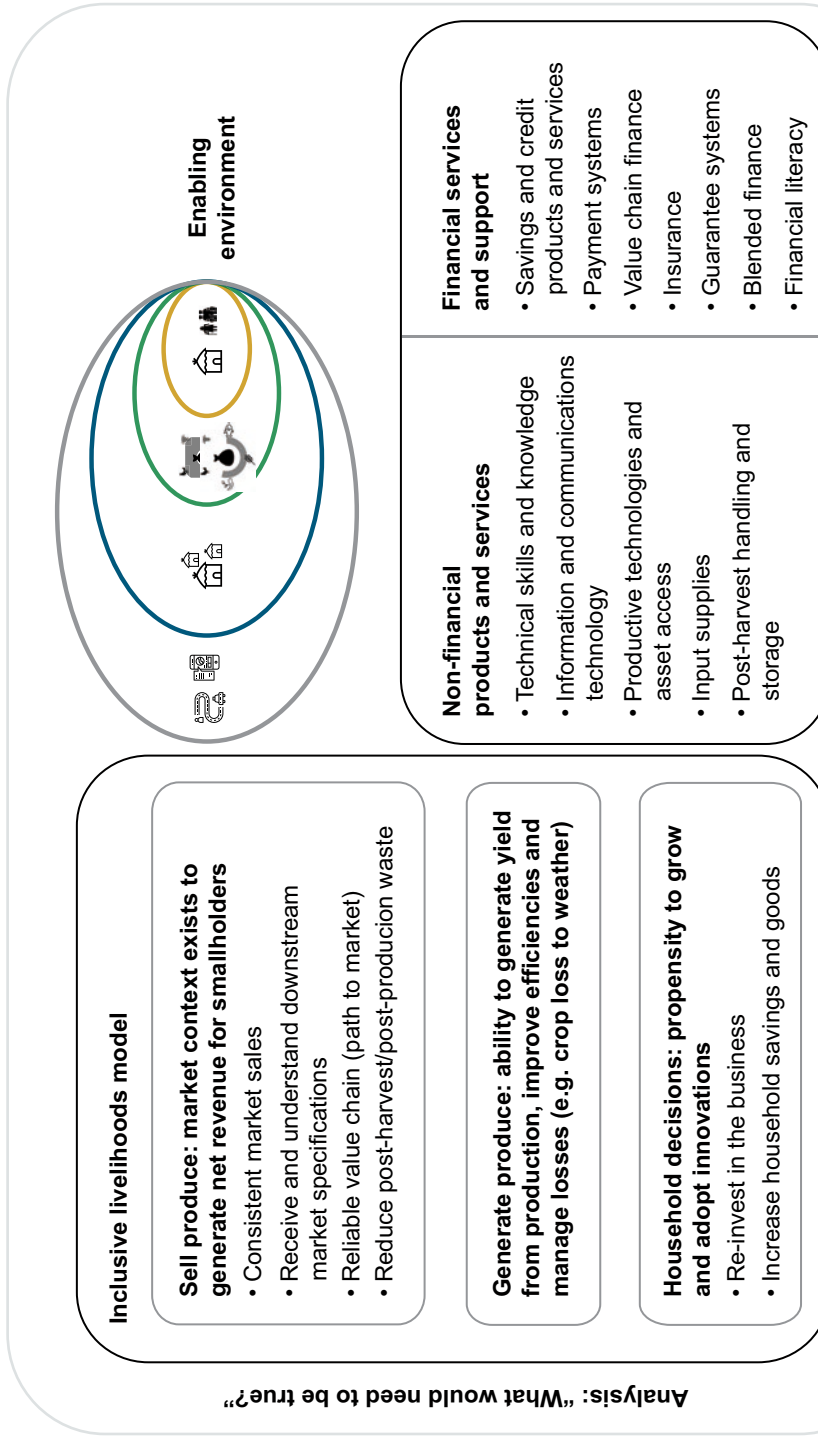

Figure 2 Tailored solutions for smallholder livelihoods

and markets in order to leverage the components effectively, it is helpful to ask: 'What would need to be true?' in the context of *livelihoods*, 'what *financial and non-financial products and services* could be effective?' and 'what is needed for improving the operating *environment* to foment innovation and adoption of new technologies?'

In the example shown in Figure 2, in order to generate the desired outcome from innovations for improved livelihoods for women, men, and youth smallholder farmers, the solution set emphasizes:

- new production techniques to be procured from extension services, leading to greater yields;
- improved market linkages and 'price discovery' that contribute to more sales opportunities and incomes;
- behavioural change interventions to influence household decisions towards leveraging additional income for household well-being and savings for additional investment in agricultural business;
- new technologies, such as micro-irrigation, by procuring equipment from local vendors through innovative finance, thus enabling climate adaptation and decreased workloads for women.

In its work with smallholders in Africa, MEDA has found that to promote new technologies and practices, such as GAP (Good Agricultural Practices) that take account of environmental, economic, and social sustainability for on-farm processes, a market segment approach is important. It notes,

> Industry actors promoting GAP need to empathize with the smallholder business case and demonstrate how the smallholder will be better off by implementing GAP. In order to address these business investment questions, it is necessary to:

1. Emphasize the market context, not only the agronomic and growing practices.
2. Adopt a customer centric perspective that treats smallholder farmer segments differently.
3. Adopt a business orientation to promote the business case and the value proposition (MEDA 2019b).

Roadmap and recommendations for change

Inclusive agricultural and rural finance, if designed and delivered appropriately, can foster innovation and economic empowerment of smallholder households. These services must work in tandem with an array of support mechanisms, and to be sustainable and scalable, must fit within the realm of a viable market-driven business approach to agriculture. Some smallholders are already well integrated into strong, competitive value chains. Others are largely excluded and will benefit from an inclusive development focus. This, however, does not mean that those in subsistence agriculture and those in well-developed value chains

Table 2 Actions and financial products for smallholders

Action areas	*Financial products*
Smallholder farming systems and resource management	• Input financing • Technology upgrading with long-term and blended finance • Cash flow financing • Asset-based financing – leasing, non-traditional collateral
Smallholder risks	• Insurance • Guarantee schemes • Savings • Forward contracts and futures • Term investment (irrigation, water control, storage) • Improved loan assessment
Profitability and cash flow	• Cash flow-based, flexible loan products • Value chain financing • Warehouse receipts • Technology upgrades • Improved back-office management information system
Economic and social inclusion of smallholder households	• Digital and ICT applications • Payment systems, input vouchers, and blended finance incentives
Capacity development for smallholders and service providers	• Smallholder organization and training • Youth entrepreneurship and management training and mentoring • Women's financial product development (flexible, savings and loans and micro-insurance)
Transaction costs and financial delivery	• Agent banking (via input suppliers and buyers) • Digital and ICT applications • Remittances
Appropriate finance	• Flexible, custom-designed financial services • Impact investment funds and joint ventures • Value chain finance • Financial incentives (shared risk guarantees)

will not benefit from many of the same development interventions, but the priority focus will be on those who are in loose value chains and/or sell into the marketplace. Critical action areas for smallholders include those depicted in Table 2.

It is not possible to try to address the critical action areas that fit all smallholders. Rather a segmented approach is required. Dalberg Global Development Advisors (2012), in 'Catalyzing Smallholder Agricultural Finance' recognized this as well and proposed five growth pathways.

These largely supply-driven pathways are a good start, especially for those connected in tight value chains. It is not surprising that three of the pathways were export oriented and the fourth pathway focused on having functional and reliable organizations that aggregate smallholders. These are pathways that do lead to growth but exclude the vast majority of smallholders. The fifth pathway of directly financing smallholders is hampered by costs and risks.

Pathways for growth

Building on the merits of this initial work, it was noted that additional and revised pathways were needed to reach the smallholder households who are largely excluded from viable markets and adequate financial services. Based upon Symposia in Africa and Asia and an expert round table in Latin America in 2016 and 2017 led by MEDA, it was determined that the greater segmentation of smallholder contexts was needed to improve inclusiveness and best fit the financial service needs of these rural households. A modified and expanded set of pathways for growth were developed by MEDA as shown below.

1. Replicate and scale social lending mechanisms and investment funds.
2. Support finance and capacity for outgrower schemes.
3. Finance through points of aggregation – organized producer organizations, buyers and suppliers, or warehouse operators.
4. Finance direct to farmers through adapted microfinance approaches.
5. Innovate and develop new financial products for smallholders.
6. Develop digital and other technology linkage models.
7. Mitigate lending risk and cost through improved loan assessment tools and training.
8. Mitigate or share risk of lenders and borrowers – e.g. guarantees, insurance, and hedging options.

All eight pathways are important, but for smallholders who are largely unconnected from higher value markets, priority recommendations for facilitating their innovation focus on pathways 3, 5, 6, and 8 shown above. Some of these, such as new financial products for smallholders involve improving or building an enabling environment. For example, in Bolivia, a non-bank microfinance institution, CIDRE, is able to finance irrigation systems secured by water right shares for its smallholder customers. However, for non-conventional collateral lending such as this, or using live animals as collateral, there is no secure legal structure, prompting CIDRE to develop a policy framework and an electronic secured transactions system to make this possible (Villarroel, 2018).

In Nepal, a country of smallholder farmers, International Development Enterprises (iDE) provides an example of working along the third pathway noted above, while also drawing from the fifth pathway in order to build the points of aggregation required for smallholders (see Box 4).

Each of these pathways is important, but lasting development in any pathway is also about building the foundation for it to work. For successful financing for smallholders, understanding the household and market systems and segments must also link with direct and indirect financial service providers who have strong financial appraisal and monitoring systems. Sometimes, as in the little-known case of Progreso, Ltda, the careful guidance they received from MEDA 40 years ago to build that foundation continues to bear fruit. The key to the long-term success was the ability to master the fundamentals of their agricultural financing.

As noted in Box 5, Progreso, Ltda cooperative follows an approach that is tailored to their clients and sectors. Their analysis includes proforma budgets of expenses,

Box 4 Commercial pocket approach

iDE Nepal uses a commercial pocket approach to commercialize smallholder agriculture. It includes:

- **Aggregation:** Establishing community-managed collection centres for market access, crop information, financial services, and advocacy. Most households are within a 30-minute walk of collection centres.
- **Last mile agro input supply chains:** Developing community business facilitators (CBFs), who are entrepreneurial farmers marketing agro inputs, micro irrigation, and integrated pest management (IPM)-based plant protection and more, along with training and technical support to customers.
- **Public–private partnership:** Engaging with the government, which invests in collection centres, multiple use water system/irrigation, basic services, and enabling policies. The private sector invests in market access, services, and extending supply chains.
- **Cross-cutting themes:** Climate adaptation, governance with gender equality and social inclusion (GESI), ag ICT, and improved nutrition and food security.

With support of a MEDA INNOVATE project funded by IDRC, iDE Nepal is piloting a non-traditional finance model in partnership with six community collection centres and Muktinath Bikas Bank Limited. Four collection centres work in a hybrid model where the collection centres facilitate loans to smallholders and two collection centres work as Business Correspondents for the bank, taking legal responsibility for loans to small farmer members for climate smart agriculture technologies. The Business Correspondent mode of agricultural financing was new for the bank and required extensive due diligence for approval by the board of directors. Customer attitudes towards these loans have been very positive. iDE Nepal observed that most customers have increased earnings with their investment in quality inputs and technologies. However, it also took time to motivate smallholders to link with the bank for larger loans, averaging US$195 and up to $2,200. There was some reluctance to take commercial loans rather than queuing for a limited number of governmental subsidized loans. Motivation to take up loans was encouraged through technical support, including training on integrated pest management (IPM) technologies, commercial vegetable production, crop insurance, and an ICT/group SMS system. Under the SMS text system, the collection centres send SMSs to members on key information including crop calendar, disease/pest, and market information.

Women's participation was high (82 per cent as of mid-2019) when the approach and products were tailored to fit their needs. For example, women farmers were found to have higher adoption rates of the improved technologies when they work with women community-based sales agents, and collection centre sales increased. Both male and female loan farmers had higher adoption rates of improved agriculture technologies, facilitated by the availability of non-traditional financing. Application of over 4,000 technologies in total were documented, including drip and sprinkler irrigation, solar pumps, plastic green houses, and hail protection nets, as well as improved seeds and IPM technology.

Farmers also have higher adoption rates of improved technologies when risk is mitigated through an informal crop insurance programme that covers the cost of production inputs for damage to yields. The collection centres manage the insurance with premiums paid from the smallholders' loans. Additional testing around crop insurance is required, as insurance for smallholders in Nepal is nascent.

Sources: iDE Nepal and MEDA

income, and cash flows. Over time, they have built a considerable database of knowledge of: 1) their clients over time; 2) the requirements and expectations within each sector; 3) price trends and market saturation risks; and 4) cross-comparisons of productivity and profitability by client. This is gathered not only

Box 5 Fundamentals of strong loan assessment

In 1975, Progreso, Ltda, a Rural Savings and Loan Cooperative in El Torno in eastern Bolivia realized that it needed to change how it operated in order to offer agricultural credit to its smallholders who made up the majority of the households. Key elements of the programme adaptations, with refinements over time, are:

- Analysis of the sectors of the members and in particular the value chain(s) of each borrower segment with crop and livestock budgets, profitability, market trends, and risks.
- Cash flow projections for determining loan disbursements and payments.
- Technical assessment, support, and access to reliable inputs for members.
- Access to agricultural inputs with in-kind loans for the input portions of loans. (This was later discontinued when private input stores became available and space was needed for cooperative expansion.)
- Hiring of an agronomist to support the agricultural and agribusiness loans.
- Informal agreements with public and private technical providers and extensionists.
- Flexible loan security options according to the client's capacity and history, including co-signers, joint guarantors, and/or movable collateral or other options.
- Regular monitoring at key points in the seasons or as needed.

Through thick and thin, learning along the way, the low-profile institution works without external support enjoying very low arrears (1%) and customer loyalty year after year.

during the loan process but with monitoring and agronomist visits. This 'informed lending' approach allows Progreso and its clients to tailor their loan planning as well as providing flexible loan security options and building trust between the lender and borrower, resulting in a very high retention rate of clients.

The pathway forward: innovative change grounded in proven principles

Change is slow and innovation is a long-term process. Smallholders have learned to be cautious. Financial service providers have also learned to be cautious. In order to foster smallholder investment and innovation through inclusive financial services, it is critical to master the fundamentals of providing holistic services. Institutions cannot simply provide the same approach as with loans for vendors or consumption.

Tailored solutions that fit smallholder financing require partnership and participation of many stakeholders to guide and build consensus to address the multiple facets of innovative change needed for smallholder investment. This cannot be imposed. Smallholder change comes from smallholders; facilitators' roles are to improve the conditions for change.

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Calvin Miller is an agricultural economist with many years of experience in agricultural and rural finance and investment as well as working with smallholder farmers. He retired from the UN Food and Agriculture Organization where he led

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