

# FINAL TECHNICAL REPORT / RAPPORT TECHNIQUE FINAL ADOPTION OF AGRICULTURAL INNOVATIONS THROUGH NON-TRADITIONAL FINANCIAL SERVICES (‘INNOVATE’) FINAL TECHNICAL REPORT

Yoon, Clara;

Turner, Katie;Schneider, Larissa;

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# **Adoption of Agricultural Innovations through Non-Traditional Financial Services ('INNOVATE')**

*Final Technical Report*

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**Research Organizations:** Mennonite Economic Development Associates of Canada (MEDA)

**Location of Study:** Waterloo, Canada

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## Acronyms

AFRACA	African Rural and Agricultural Credit Association
AFS	Agriculture and food security
AFL	Agriculture for Life
ANDE	Aspen Network of Development Entrepreneurs
APTN	Asociación de Productores de Tara del Norte
ATL	Agronomy Technology Limited
BDP	Banco de Desarrollo Productivo - Bolivia
CGAP	Consultative Group to Assist the Poor
FI	Financial Institution
FINRURAL	Asociación de Instituciones Financieras de Desarrollo
FSP	Financial Service Provider
GAP	Good Agricultural Practices
HCD	Human Centered Design
IDB	Inter-American Development Bank
IDRC	International Development Research Centre
IEP	Instituto de Estudios Peruanos (Institute of Peruvian Studies)
INGO	International Non-Government Organization
IPM	Integrated pest management
MEDA	Mennonite Economic Development Associates
MFI	Microfinance Institutions
MSA	MarketShare Associates
MVP	Minimum viable product
NCC	Non-conventional collateral
NGO	Non-Governmental Organization
NTF	Non-Traditional Finance
NTF4Ag	Non-Traditional Finance for Agriculture
PAYGo	Pay-as-you-go
PMN	Pakistan Microfinance Network
SFL	Savings for Life
WHO	World Health Organization
WRF	Warehouse receipt financing
WTP	Willingness to Pay

## 1. EXECUTIVE SUMMARY

The 'Adoption of Agricultural Innovations through Non-Traditional Financial Services' project (hereafter called INNOVATE) overall objective is to “assess the potential of non-traditional financial services to enable large scale adoption of agricultural innovations among men and women smallholders in South Asia, Latin America and East Africa and use the lessons to inform policymaking and programming on agricultural development.” The rationale for exploring non-traditional finance (NTF) is rooted in the persistent financing gap for smallholder finance worldwide. Over 270 million smallholders in Latin America, Sub-Saharan Africa, and South and Southeast Asia require over USD \$200 billion in financing to grow their businesses and improve their livelihoods. Yet less than one sixth of the financing needs are being met by formal financial institutions and value chain actors.<sup>1</sup> Therefore, alternative and innovative financing is required by different kinds of actors beyond formal financial institutions to fill financing needs of smallholder farmers in developing economies.

Through an open call for proposals held in 2017, MEDA awarded research grants to ten diverse partners (i.e. SMEs, FIs, INGOs etc.) in South America, East Africa, and South Asia to conduct pilot studies to either test non-traditional finance approaches for the uptake of agricultural innovation by smallholder farmers, or to document case studies of ongoing or completed programming that exhibit innovations in finance and agriculture. MEDA's support to the ten research partners (combination of grant funding, monitoring, cross-cutting research and as-needed technical assistance) began in 2018 and concluded in 2020.

MEDA launched INNOVATE's learning agenda in the final year (Year 3) comprised of a series of publications, blog posts, and in person and online events to convert the lessons and results from the ten research projects into action-oriented outputs and formats for a wider audience. Through a robust learning agenda in partnership with MarketShare Associates (MSA) as the learning partner, INNOVATE analyzed, synthesized and disseminated the results and learnings from the awarded projects, targeting key stakeholders (local government, policymakers, donors at national and global levels) to influence future policy and agricultural development programming. The learning agenda themes were iteratively discovered throughout the project, while anchored on the project's overall research goal and key research questions related to the adoption of agricultural innovations through non-traditional finance:

- **Customer Centricity:** How can customer-centric principles and practices influence the design and deployment of products and services that meet smallholder customer needs and demands?
- **Smallholder products and services:** What do smallholder farmers value and what are they willing to pay for?
- **Smallholder household decision-making:** How do social norms, power dynamics and market factors impact smallholder household agricultural decision-making alongside competing household needs?
- **Policy and regulatory transformation:** How can governments, regulators and financial institutions learn and adapt in light of emerging trends and disruptions (technology, climate change, migration etc.) that are transforming markets?

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<sup>1</sup> “Inflection Point: Unlocking growth in the era of farmer finance,” Learning Lab \* ISF Advisory, April 7, 2016. <https://www.ralearning.org/post/inflection-point-unlocking-growth-era-farmer-finance>

The key achievements and results from the project include:

- **4,000+** smallholder farmers (2,971 women, 1,248 men) adopted various agricultural innovations, enabled by a non-traditional finance product or service
- **20+** unique agricultural innovations (products) were adopted by the participating smallholder farmers
- Over **USD \$500,000** was mobilized and utilized by smallholder farmers for agricultural innovation adoption across the 10 countries and 3 regions
- **7 innovations / models were tested or analyzed** by research partners (in Peru, Bolivia, Malawi, Nepal, Bangladesh, Kenya, Pakistan, and Rwanda)
- **3 new or improved finance products** were developed/tested (in Nepal and Bangladesh)
- **35 project outputs** were produced and disseminated (combination of learning papers, reports, case studies, blog posts, presentation slides, videos etc.)
- **12 events** were held with partners and key stakeholders (online and in-person)

## 2. THE RESEARCH PROBLEM

The research problem addressed in INNOVATE is the need for innovation in smallholder agriculture, focusing on the role of non-traditional finance as a potential catalyst for the adoption of agricultural innovation by farmers worldwide. A majority of the 1.5 billion women, men and children that comprise the 500 million smallholder households worldwide, live below the poverty line. While smallholder farmers produce approximately 80 percent of the food consumed in developing countries, they often lack the necessary support to improve productivity (inputs, information, finance and other services), making it difficult to transition out of cycles of low yields and earnings. In addition, over 270 million smallholders in Latin America, Sub-Saharan Africa, and South and Southeast Asia require over USD \$200 billion in financing to grow their businesses and improve their livelihoods. Yet less than one sixth of the financing needs are being met by formal financial institutions and value chain actors.<sup>2</sup>

This project sought to explore finance as both a core need and an opportunity for greater agricultural innovation by women and men smallholder farmers. The research focus is in **non-traditional forms of finance** and its potential to impact **smallholders' propensity to adopt new behaviours, mindsets, practices, and technology for improved productivity**. As Nathan Associates (2015) states, "Finance is a necessary but not sufficient condition for productivity growth – it can unlock critical constraints but just as critical are the unlocking of constraints in agricultural systems, such as access to markets for other inputs, storage and logistics and efficient market channels."

Since the launch of this project in 2017, MEDA's understanding of the research problem evolved based on insights and lessons generated from the ten research projects, along with events and engagement with stakeholders that brought forward key themes, especially on policy and regulatory-related issues. The research process of INNOVATE encompassed both generative research (*exploratory in nature; open to wide range of solutions that can solve a particular problem or issue*) and evaluative research (*assess the success or viability of an existing solution*) – enabling MEDA to uncover diverse learning related to the research problem.

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<sup>2</sup> "Inflection Point: Unlocking growth in the era of farmer finance," Learning Lab \* ISF Advisory, April 7, 2016. <https://www.ralearning.org/post/inflection-point-unlocking-growth-era-farmer-finance>

**The general objective of the project was** “to assess the potential of non-traditional financial products and services to enable large scale adoption of agricultural innovations among men and women smallholders in South Asia, Latin America and East Africa and use the lessons to inform policymaking and programming on agricultural development.” As one of the final activities of the project, MEDA launched the [‘NTF4Ag Report: Emerging Lessons and New Frontiers’](#) which synthesizes and consolidates the research results from the case studies, pilots and cross-cutting research, with a focus on four learning themes.

The culmination of the research conducted by MEDA and its ten partners over the last three years demonstrates that there is promising potential for non-traditional finance in the smallholder finance landscape, not as a replacement of traditional finance or banking services, but as a complementary tool to fill in current gaps to meet the financing and agricultural business needs of smallholder farmers. For example, several projects used a ‘bundled approach’ which offers customers a combination of finance, training/capacity building, and delivery of inputs or innovations to smallholder farmers. Bundled products and services is a growing trend in smallholder agriculture, and often utilized by actors and providers (non-traditional financiers) looking to differentiate themselves and maximize value creation for smallholder customers. This approach is not as common among traditional banks, as their core functions are taking deposits, making loans, and providing services like transfers, bill payments etc. The examples of non-traditional finance piloted, studied and analyzed in INNOVATE reveal promising models and new frontiers of closing the finance gap for women and men smallholders in developing economies.

The research also reveals promising areas for policy and regulatory transformation, especially where collateral requirements should be adapted to the circumstances and risk-profiles of smallholder farmers. For example, in countries like Bolivia, non-conventional forms of collateral (moveable assets like livestock, equipment, or legal documents) are accepted by financial service providers as per regulation, but registration and validating such forms of collateral remains a gap.

The knowledge generated from this project, captured in a learning series (comprised of learning papers, partner case studies, policy briefs, in person and virtual events, and ongoing stakeholder engagement) contributes to developmental and policy domains such as expanding accepted forms of collateral for agricultural lending; bundling products and services for enhancing uptake of innovations; or sequencing programs like savings groups and agricultural extension/training to optimize behavior change among women and men smallholder farmers.

The project learnings affirm there are opportunities for further research and action for actors working on agricultural development and financial inclusion, as these two agendas are complementary and must go hand in hand, working towards sustainable development for smallholder farming communities.

### **3. PROGRESS TOWARDS MILESTONES**

#### **3.1 Project Milestones Overview**

The achievement and status of project milestones for the life of project are described in the table below. Further detailed progress for the milestones achieved in the final year of the project are provided in the next sub-section.

Milestone		Evidence / Comments
1.0	Submit workplan including specific descriptions of all outcomes, outputs and activities	Completed on April 21, 2017
2.0	First update report	Submitted on October 31, 2017
2.1	Inception Meeting implemented and report delivered	Inception workshop held June 12-13, 2017 Report delivered on June 30, 2017
2.2	Call for proposals is completed and launched	Launched August 4, 2017
3.0	Obtain list for Subcontractor country clearance	Submitted on July 21, 2017 Approvals required for four partners (two in Kenya, one in Malawi, one in Rwanda) – final clearance received on September 24, 2018.
4.0	First technical progress report	Submitted on April 20, 2018
4.1	Announcement of proposals selected	Finalized award decisions in November 2017
4.2	Contracts signed, initial payments released and projects launched	Contract negotiations started in December 2017 and extended until April 2018
4.3	Cross-cutting research plan and learning agenda discussed with awarded projects	Three regional kickoff workshops held in Lima, Kathmandu and Nairobi with partners to launch projects and establish cross-cutting research themes and learning agenda framework
5.0	Second update report	Submitted October 31, 2018
5.1	Cross-cutting research activities initiated	Throughout Year 2 (April 2018-March 2019)
5.2	Position paper developed	Delayed – produced the position paper in September 2019
5.3	Global stakeholders and policymakers engaged	Ongoing engagements from MEDA HQ (Waterloo and Washington DC offices) and during monitoring visits in various countries
6.0	Second technical progress report	Submitted April 30, 2019
6.1	Initial findings report developed and disseminated	Throughout Year 3 (April 2019-April 2020)
6.2	Network of stakeholders consolidated and connected	
6.3	Mid-term review meeting	Held in March 2019 with MEDA team, IDRC Project Officer and AFS Team Leader, and select members of the advisory group.
7.0	Third update report	Submitted October 31, 2019
7.1	Learning events developed and completed	Completed all learning events by January 2020
7.2	Initial uptake of project results/lessons by key stakeholders	Collected this data throughout March-April 2020
7.3	Final learning event developed and completed	March 25-26, 2020
8.0	Final Technical Report	Submitted May 20, 2020
8.1	Research results synthesized and disseminated	Learning agenda activities ran from end of Y2 and throughout Y3
8.2	Bi-lateral engagements with stakeholders completed	Completed by April 2020.
8.3	Global learning event with network of stakeholders completed	Held virtually on March 25-26, 2020
8.4	Evidence that stakeholders are influenced by the project	See results reported below.
8.5	Evidence that recipients from research awards are using research results	
8.6	Improved efficiency of non-traditional financial services to support the adoption of agricultural innovations:	

### **Summary of Research Portfolio: Partner Selection, Research Activities and Support**

INNOVATE launched the call for proposals in August 2017 and received over 100 applications. After screening for eligibility, an evaluation committee reviewed and evaluated 49 applications and shortlisted 32. After a round of feedback and questions with shortlisted candidates, MEDA selected 10 projects for funding by mid-November. Applications were evaluated based on the following criteria:

- Promising idea/concept – potential for catalyzing agricultural innovation among women and men smallholder farmers
- Management and organization capacity, especially to conduct research (provide examples and references from previous research/implementation, and capacity of the persons to be involved)
- Target customer impact – potential to impact target customer through proposed project and demonstrates understanding of target customers’ needs
- Gender and Women’s Economic Empowerment – potential and/or capacity for gender mainstreaming or targeting, and women’s economic empowerment
- Replicability/scalability – potential for scale by the applicant and/or others
- Implementation and budget – feasible plan with clear roles, responsibilities, timelines and corresponding budget
- Learning potential – potential to contribute learning to applicant’s organization and the industry/community

Two types of research grants were available. MEDA awarded four case study grants and six pilot grants.

	<b>Pilot Grant</b>	<b>Case Study Grant</b>
<b>Description</b>	Larger grants fund the design and/or implementation of new pilots that can test and report on promising NTF products/services/delivery channels.	Smaller grants fund the documentation of learning from previous initiatives or current projects that lack a strong knowledge management component.
<b>Learning Outcomes</b>	Capture new learning from the development and deployment of pilot NTF products/services that foster innovation uptake by women and men smallholder farmers.	- Capture learning from on-going programming that exhibit innovations in finance and agriculture and uptake by women and men smallholder farmers; OR, - Capture learning from completed programming where innovations have not been documented or shared.
<b>Grant Amount</b>	<b>Up to CAD \$200,000*</b>	<b>Up to CAD \$50,000*</b>
<b>Match Requirement</b>	Minimum 1:2 (up to CAD \$100,000 match required)	Minimum 1:2 (up to CAD \$25,000 match required)
<b>Implementation Period</b>	12-18 months	Up to 12 months

Following award decisions and contract negotiations, MEDA undertook the following activities to monitor and support the research projects:

- From March-June 2018, MEDA convened three kick off workshops in each region (Peru, Nepal and Kenya) for partners to understand the scope and objectives of INNOVATE and how each awarded project feeds into a larger research and learning agenda on non-traditional finance and its potential to foster agricultural innovation adoption by women and men smallholder farmers.
- During implementation, MEDA required partners to report impact, performance, and financial data on a quarterly basis. MEDA followed up with partners where certain issues or elements of a project or study design required clarification or further understanding.
- MEDA conducted at least one monitoring/site visit to each partner, to monitor the progress and interact with participating farmers in the field. These in-person visits were

an opportunity for MEDA and partners to discuss strategic challenges or key lessons being generated from the research projects.

- In some cases, MEDA utilized a technical expert/consultant to support a partner with specific technical assistance and support. For example, MEDA supported iDE with hiring a local consultant who assessed the crop insurance product as it was their first time working on an insurance product. The consultant analyzed the crop insurance product, which was organized and administered by the participating community collection centers for their farmer members; and made recommendations to iDE for next steps and opportunities to tap into government programs aimed to promote insurance for smallholders.
- MEDA organized a series of online learning exchange events for each region, for partners to present their projects and learn about other projects in the portfolio.

## **3.2 Detailed Progress of Year 3 Milestones**

### **8.1 Synthesize and disseminate research results:**

- *Synthesize, consolidate and disseminate research results from case studies, pilots and cross-cutting research;*
- *Develop communication outputs in various formats for different audiences (finance institutions, development practitioners, etc.);*
- *Share and disseminate outputs.*

The project [learning series](#) highlights the research conducted by MEDA and its partners exploring the potential of non-traditional finance to promote adoption of agricultural innovation among women and men smallholder farmers in the respective project regions and countries. From May 2019 until the end of the project, MEDA and learning partner MSA, developed the learning agenda and strategy to inform the learning series content including learning papers, partner case studies, blog posts, webinars and in-person events, and the final synthesis report. Below are the various communication outputs disseminated throughout the life of the project:

- MEDA publications (learning papers, articles, briefs): 13
- Partner publications (case studies, final learning reports): 10
- Newsletter issues: 11
- Event recap/slides: 6
- Blog posts: 5
- Multimedia (video): 1

More details on the project outputs are in [section 6](#) of this report.

### **8.2 Bi-lateral engagements with stakeholders:**

- *Consolidate interactions with stakeholders from the development finance sectors, as well as organizations supporting smallholder farming;*
- *Inform, encourage and support stakeholders in the uptake of research results.*

MEDA's stakeholder engagement strategy and approach aligned with the learning agenda and the series of publications we launched in the final year of the project. We anticipated holding the final learning event in mid-March 2020, before the project closing, and sequenced a series of publication launches and learning events to engage with stakeholders like development actors

(implementers, INGOs), research organizations, financial service providers, donors, and policymakers/government actors (Central Bank representatives).

For example, in January 2020, MEDA convened an engaging online discussion among stakeholders and practitioners focused on ‘using data to better understand smallholder farmers’. The discussion was facilitated by MEDA’s Market Systems Technical Director (Nick Ramsing) and featured speakers from Dimagi, Taroworks, Catholic Relief Services, ACDI/VOCA. This online discussion built on the project’s learning paper ‘[A Customer Centric Lens for Good Agricultural Practices](#)’ which argued that industry actors need to broaden and expand GAP training agronomic perspective (how to grow) to include a business case orientation in order for smallholders to adequately change behavior, adopt and invest in new practices for certain markets.

Leading up to the final learning event and after it concluded, MEDA followed up with select advisors and stakeholders from the three different regions to encourage the reading of and uptake of the research and findings of the project. After the final learning event, we focused our efforts on promoting and disseminating the final synthesis report which consolidated the key lessons and insights from MEDA and our partners’ research. Below is a high-level list of organizations and channels where we shared and disseminated the synthesis report:

**Organizations:**

- AFRACA
- IEP
- ISF Advisors
- Global Affairs Canada
- IDB
- CGAP
- APRACA
- RAFL

- Mastercard Fund for Rural Prosperity
- CoWater Sogema
- TechnoServe
- ANDE East Africa Chapter
- Access to Finance Rwanda

**Channels:**

- FinDev Gateway
- AgriLinks
- MarketLinks
- SEEP Network
- ANDE

**8.3 Global learning event with network of stakeholders:**

*Organize and implement a global sharing and learning event with policy makers, development practitioners, donors and other key stakeholders; identify areas of possible collaboration and partnering opportunities*

INNOVATE planned to hold the final global learning event on March 17, 2020 in Ottawa, Canada. MEDA closely monitored the unfolding coronavirus situation, sending regular updates and communication to its partners and registrants for the event. With nearly all the event plans and logistics in place, registrations and travel plans confirmed, on March 11, the [World Health Organization](#) (WHO) officially declared the coronavirus (COVID-19) a pandemic. This triggered a series of decisions by the project to first cancel the in-person learning event, as a necessary measure to keep all participants safe and to lower the risk of spreading the virus. After the cancellation, the team re-grouped and revised the event plan for an online format.

The Non-Traditional Finance for Agriculture (NTF4Ag) Online Learning Event was held on March 25-26, 2020. The agenda for both days included opening remarks from MEDA and a summary of the project; opening remarks from IDRC; a series of lightning talks presented by

research partners; a fireside chat responding to the topics and themes raised in the presentations and overall smallholder finance landscape and a Q&A period with the audience.

Over both days, there were a total of 102 unique participants out of the 168 that registered (61% attendance rate). While MEDA looked forward to convening the partners and stakeholders at the learning event in Ottawa, the digital format was the next best option for achieving this milestone to organize and deliver a global sharing and learning event, featuring the key learning and results from the project. The recordings from [Day 1](#) and [Day 2](#) are available on MEDA's Vimeo Channel.

#### **8.4 Evidence that stakeholders are influenced by the project:**

*At least one key stakeholder per region includes results, lessons and/or recommendations from the research in their future policy and/or investment plans, with potential large-scale effects on smallholder farmers*

The project's influence on various stakeholders is summarized below, with additional stakeholders engaged throughout the project covered in [Appendix 1](#):

Region	Evidence that stakeholders are influenced by the project
East Africa	<p><b>ANDE East Africa Chapter:</b> "I work for a membership-based organization, I'm consistently integrating <b>customer centricity</b> in my interaction with our members. The need to continue conversations with financial institutions on how they can best engage small and growing businesses."</p> <p><b>African Rural and Agricultural Credit Association (AFRACA):</b>                      "INNOVATE has made significant contribution by enriching the body of knowledge in the small holder finance lending landscape. This is against a backdrop of very limited research activity around the same subject area during the period.</p> <p>In AFRACA, where I work, we intend to enrich and package some the learnings into resourceful knowledge products for our member institutions, especially on how to incorporate non-traditional financing models into existing mainstream lending practices. As a strong policy advocate on smallholder finance in Africa, it is our intention to make reference to INNOVATE's work to sensitize and provide policy guidance to policy makers/regulators on new ways of financing smallholders, particularly around application of digital lending practices in smallholder finance."</p>
South Asia	<p><b>India: Independent consultant</b>                      "Regarding the <a href="#">A Customer Centric Lens for Good Agricultural Practices</a> paper, it is excellent, practical and very usable resource for practitioners. I am sharing it with some organizations and individuals that are likely to read and use. Two aspects on which we might need to emphasize more are i) how do we sustain the changes induced beyond the period of engagement and how to make such programs to think from the farmer's point of view so that adoption and continuation is a natural outcome."</p> <p><b>Bangladesh: Relationship Officer, Bank Asia</b>                      "I want to use the lessons to another agricultural project to provide the better service to smallholder farmers so that the smallholder farmers improve their financial capacity and also they use to formal financial sectors for their financial activities."</p>
South America	<p><b>Bolivia: Director of Innovation, Research and Development (Director Innovaciones, Investigación y Desarrollo en CIDRE)</b>                      "The focus of the initiative and innovations on the customer is a powerful lesson and one that we consider to be scalable within our operations. It is without a doubt a fundamental aspect; although it</p>

Region	Evidence that stakeholders are influenced by the project
	<p>seems obvious, it isn't always evident at the moment when you are designing processes and products.</p> <p>We aim to orient the design of products and services to our customers, modifying the processes of design and testing. In the case of developing information technologies, the development of minimum viable products has been an important learning, which has changed the way we approach developing these kinds of solutions. The combination of both aspects (orientation toward the customer and minimum viable product design) enables projects that otherwise wouldn't have been possible, and also helps minimize the likelihood that an initiative gets implemented without addressing the real needs of customers (smallholder farmers).”</p>
Global	<p><b>Fund for Innovation and Transformation: Technical and Innovation Program Officer and Director of Innovation</b></p> <p>The <a href="#">Fund for Innovation and Transformation</a> (FIT) supports Canadian small and medium-sized organizations testing innovative solutions that advance gender equality in the Global South. FIT is a program of the Inter-Council Network of Provincial and Regional Councils (ICN) made possible through funding from Global Affairs Canada and administered by the Manitoba Council for International Cooperation (MCIC).</p> <p>With the launch of FIT last year, various team members from MCIC approached MEDA INNOVATE and participated in the project's learning events, to incorporate and adapt frameworks and tools around testing innovations. For example, in the lightning talks delivered in the March 2020 learning events, MEDA shared its hypothesis and prototyping testing tool with a Technical and Innovation Program Officer – the response we received, “I appreciated seeing the terms “reject condition” and “fail condition” in the hypothesis test form; it's something that we may need to further consider.” The FIT team followed up with additional questions around gender mainstreaming and how to incorporate gender equality in a testing context/environment.</p>

**8.5 Evidence that recipients from research awards are using research results:**

*At least 80% of institutions that received research awards include lessons and results in their future development finance initiatives for smallholder farmers*

Of the ten institutions that received research awards through this project, MEDA reports that 100% (all ten) are including the lessons and results in their current and future development finance-related initiatives for smallholders. More details gathered from the close out survey and interactions with partners are in the [next section](#) of this report.

**8.6 Improved efficiency of non-traditional financial services to support the adoption of agricultural innovations:**

*At least two non-traditional financial products or services have improved their effectiveness in supporting the adoption of innovations by smallholder farmers*

The project exceeded the target of at least two non-traditional financial products or services have improved effectiveness in supporting farmers to adopt innovations. In the final synthesis report, MEDA provided a snapshot of some key achievements of the project including the number of innovations/models tested or analyzed (7 total) and the number of financial products developed and tested within the scope of the project (3 total).

# of innovations / models were tested or analyzed by research partners: 7		# of new or improved finance products developed / tested: 3
Tested: 1. Revolving Loan Fund (Peru) 2. Non-Conventional Collateral Registry (Bolivia) 3. Bundling (Malawi, Nepal, Bangladesh) 4. Digital Wallet (Kenya) 5. Ag Tools on Credit & Group Liability (Kenya)	Analyzed: 1. Warehouse Receipt Financing (Pakistan) 2. VSLAs + Farmer Field Schools Model for Improved Ag Investment and Household Nutrition Outcomes / Diet Diversity (Rwanda)	1. Wholesale Ag Loan in Nepal (offered by Muktinath Bikas Bank Limited, access to farmers and capacity building offered by iDE) 2. Ag Loan (offered by Bank Asia in Bangladesh) 3. Weather-Based Insurance (offered by Green Delta Insurance; access to new farmers and capacity building)

## 4. SYNTHESIS OF RESEARCH RESULTS TO DATE

This section synthesizes the main research results achieved during the life of the project, highlighting progress for each specific objective along with observations on the following components:

- Quantitative and qualitative analysis
- Unexpected, surprising or interesting innovative results
- How research results are being used, the potential impact on communities or target populations
- How research ethics were assessed/managed
- Potential uptake of project results

The project used a learning agenda framework to analyze and systemize the lessons and results around NTF products, services and models central to the ten funded research projects. The learning agenda is anchored on four themes outlined in the [synthesis report](#) and in the right text box. The synthesized research results are reported in the following section based on the two specific objectives of the project. A summary of the ten research projects supported by this program, along with the key results and progress against the expected goal/project hypothesis are in [Appendix 2](#).

### Learning Themes

1. Customer centricity
2. Smallholder products and services
3. Smallholder household decision-making
4. Policy and regulatory transformation

### Specific objective 1

“To analyze and systematize non-traditional financial services that are presently implemented by the Financing for Development community to foster agricultural innovation adoption among men and women smallholder farmers”

#### a) Research results synthesis

Across the ten projects, the following infographic visualizes a snapshot of the key achievements and results of the project, further details are in [Appendix 3](#). A few key highlights include:

- **4,000+** smallholder farmers (2,971 women, 1,248 men) adopted various agricultural innovations, enabled by a non-traditional finance product or service
- **20+** unique agricultural innovations (products) were adopted by the participating farmers

- Over **USD \$500,000** in loan value were utilized by smallholder farmers for adoption of agricultural innovations across the 10 countries and 3 regions (loans were provided by a range of entities: non-bank companies, microfinance institutions, financial institutions, cooperatives, and savings groups)



Figure 1 A  
 snapshot of key achievements of INNOVATE

The following content in this report synthesizes the main research results while highlighting the progress made for this specific objective, organized by the first three learning themes.

**Theme 1: Customer Centricity**

During year 2 of the project, MEDA identified customer centricity as a key theme relevant to the research. We observed that some partners already practiced customer centricity in their business operations, while others required more hands-on support and reminders around testing assumptions, understanding one’s customer, and that products and services must meet real needs of women and men smallholder customers. In the early stages of managing the INNOVATE research portfolio through activities such as kick off workshops in each region, quarterly reports, and initial monitoring visits, MEDA observed three categories of partners in relation to customer centricity: (1) already embedded in processes, operations and culture; (2) aspirational but not operational; and (3) not top of mind as a business priority. Therefore, customer centricity became central to the learning series, especially as a key theme throughout the publications MEDA developed and events we organized, building on work led by Consultative Group to Assist the Poor (CGAP), Dalberg and other groups active in the smallholder finance space.

From the research conducted by the grant recipients (partners), it became clear that customer centricity is a critical enabler when it comes to delivering appropriate and affordable non-traditional financial services to support women and men smallholders to adopt agricultural innovations. The constraints and challenges (limited financial capacity, climate change risk,

competing household priorities etc.) that women and men smallholders face must be understood and taken into account by providers of finance or implementing organizations in the design and testing of these non-traditional finance experiences and models. MEDA also learned that customer centricity is not a one-time action or ‘project’ that organizations implement. Instead, being customer-centric requires a change in organizational/corporate culture which includes buy-in among all staff, including management.

Two examples from the portfolio demonstrate how customer centricity enables organizations to test new or existing products or services for agricultural innovation adoption by farmers in an iterative manner that involves customers throughout testing:

**Case #1: Bidhaa Sasa**, is a last-mile finance and distribution company in Kenya that offers affordable and accessible household goods and agricultural tools to rural families, especially rural women. Since its founding in 2015, the company embedded the [Lean Startup methodology](#) into its operations and organizational culture and is an example of a partner that already practiced customer centricity in its business operations.

Bidhaa Sasa’s research supported by MEDA aimed to learn whether its current distribution and finance model (focused on household goods like clean cookstoves or home solar lighting) would work for the adoption of agricultural innovation, specifically hardware agricultural goods, amongst its rural women farmer customers. If the experiments were successful, Bidhaa Sasa planned to expand its range of agricultural products and deliver more value to its customers. During the 20-month partnership, Bidhaa Sasa ran a series of experiments including the identification, testing and commercialization of five different products: a tarpaulin drying canvas, hermetic bags, grain storage silos, water tanks, and pressure sprayers. Over the pilot duration, over 100 units per month were sold (almost **4,000 units total**), and **73% of clients who purchased were women** – they also were the ones who paid for and used the products themselves. Here is a breakdown of products sold:



Figure 2 A client of Bidhaa Sasa uses a drying canvas, a new product tested and introduced to customers

Product	Units Sold	% of Women Clients	Average PAR30 <sup>3</sup>	Average NPS <sup>4</sup>
1 canvas + 4 bags <sup>5</sup>	3,178	73%	12%	56%
Grain silo	82	76%	0%	39%
Water tank	328	77%	0%	41%
Pressure sprayer	73	53%	2%	N/A <sup>6</sup>

<sup>3</sup> Portfolio at Risk (PAR) Ratio is calculated by dividing the outstanding balance of all loans with arrears over 30 days, plus all renegotiated (or restructured) loans, by the outstanding gross loan portfolio. The data used for this indicator is calculated at a certain date in time. PAR30 is used as the standard measurement in microfinance. Source: [MicroRate](#)

<sup>4</sup> Net Promoter Score (NPS) is a metric used in customer experience programs and measures the loyalty of customers to a company. Source: [Qualtrics](#)

<sup>5</sup> The canvas and hermetic grain storage bags were sold together, these are two of the five total agricultural products tested.

<sup>6</sup> The pressure sprayer was the newest product introduced, therefore Bidhaa Sasa did not have NPS data to report in its final reporting to MEDA.

**Case #2: CIDRE IFD**, a microfinance institution in Bolivia, has a long history of research, social and economic development, and inclusive rural financial services in the country. For its research project in partnership with MEDA, CIDRE sought to develop and pilot a non-conventional collateral (NCC) registry system, to standardize its own processes of registering, valuing, and monitoring NCC used by CIDRE clients for loans. Early in the project, MEDA advised CIDRE to adopt a lean and agile approach, borrowed from best practices used in software and application development. CIDRE used the information and feedback to design a plan to develop and test a 'Minimum Viable Product' (MVP), to reduce risk of spending a lot of time and effort on a fully developed registry system and to integrate feedback loops and testing with users throughout the development process.

In its final report, CIDRE shared key lessons from the pilot experience:

- Loan officers (primary users) do not perceive the registry system as difficult to use and does not increase loan processing times, meaning a full-scale implementation is feasible, pending improvements after further testing.
- Potential clients applying for loans are not dissuaded by the registry system, they do not believe their information is at risk and are willing to share it.
- Issues around risk management (changes in perception of risk after registering an asset, improved collection and principal repayment) require longer testing periods, over an entire loan cycle. The duration of the grant/partnership with MEDA could not capture the entire loan cycle with the 11 clients who participated in the pilot.

Interestingly, CIDRE was one of few projects that achieved the key activities and deliverables in the project plan while being underspent by 8% of the allocated MEDA budget. Further analysis could investigate whether the design, testing and implementation of the MVP registry system (based on lean and agile approaches) is a more cost-effective and risk mitigating approach, compared to the traditional waterfall software development methodology.<sup>7</sup>

### **Theme 2: Smallholder Products and Services**

This theme focuses on what women and men smallholder farmers value and their willingness to pay. Smallholders are extremely cash-flow sensitive due to the nature of agriculture, therefore an ongoing challenge in the financial sector is that most loan products are not designed to align with these cash-flow needs and considerations. The institutions and financial service providers that have successfully developed appropriate and affordable products/services for farmers know and understand agriculture as a sector and have priced and designed their offerings based on risk perceptions that are aligned with seasonal crop calendars and farmers' ability to repay.

The following two examples from the research portfolio demonstrate how businesses and NGOs continue to navigate the challenges of finding the right product-market fit (the degree to which a product/service satisfies a strong market demand). This product-market fit is especially difficult to determine due to irregular cash flows, crop seasonality, competing household needs and demands, and varying price sensitivity by farmers.

**Case #1: I-DEV International** ran a pilot in collaboration with a tara cooperative – Asociación de Productores de Tara del Norte (APTN), located in San Marcos, Cajamarca, Peru. The overall

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<sup>7</sup> In software development, waterfall describes a phased progression of activities. This is a linear and sequential approach that allows the team to break the project into understandable and explainable phases with clearly defined deliverables. The team proceeds to the next phase only when the previous phase is completed and everything is approved. Source: [Oxagile](#)

experience demonstrated key lessons in the importance of cash flow constraints, willingness to pay and relevance/value perception of agricultural technologies by farmers. Initially, the pilot set out to (1) introduce precision solar drip irrigation solutions, (2) integrate the use of Peru's national mobile money platform (BIM) for loan repayments and usage of the system, and (3) use a pay-as-you-go (PAYGo) model for farmers to pay and use the drip irrigation systems. However, a few months into the pilot, it became evident that introducing several new elements and innovations to APTN farmers at the same time was not feasible or realistic.

I-DEV had to pivot its approach by supporting the cooperative to enable its members to acquire locally available drip irrigation systems through a revolving loan facility, which are much less costly than importing solar-run systems. This pivot seems like common sense, but the initial project lead was referencing experiences and trends in mobile money and PAYGo innovations in East Africa, with significant and untested assumptions that multiple adoption factors such as awareness, accessibility, affordability and value perception could be overcome in a 20-month pilot.

In the end, the final results and lessons learned from the I-DEV pilot were not the anticipated results as outlined in the original proposal. However, the project produced relevant learning and recommendations for organizations working at the intersection of innovation, finance, and agriculture. Below is a summary of relevant lessons for organizations working with farmer cooperatives/associations in designing affordable financial mechanisms for agtech upgrades such as drip irrigation systems. Through a series of Human Centered Design (HCD) workshops and exercises conducted (inspired after an I-DEV staff participated in MEDA's customer centricity learning event in Nairobi in January 2019), I-DEV learned these lessons/takeaways:

1. Use HCD methods and tools as early as possible in the research & design process of a pilot initiative.
2. Work closely with anchor partners (in this case, the cooperative) and explain your process, methodology and assumed drivers.
3. Apply empathy and identify your possible biases especially in these areas: income and cash flow, income-generation activities, risk tolerance and Maslow's Hierarchy of Needs, and day-to-day use and appreciation of technology; also, basic services (water, electricity, utilities) may not be consistent.

The key macro-level lessons learned by I-DEV included:

1. Technology itself does not always sell or appeal to farmers but results and potential impact do.
2. Match the payment mechanism with farmers' cash flow and income level (PAYG is not a suitable mode of payment for tara farmers with irregular revenues and only a few major cash flow cycles resulting from 1-2 key harvest seasons).
3. Understand the crop, seasonality, and cash flow nuances upfront, this knowledge is key to designing the appropriate financial mechanism and agtech solution for farmers.

**Case #2: Agronomy Technology Limited** (ATL) analyzed a non-traditional finance model in Malawi, called Chithumba. The case study findings demonstrated the need to segment and customize Good Agricultural Practices (GAP) training for farmers. Chithumba offers a bundled service that includes inputs on loan, GAP training and advisory services, and marketing services.

A key finding in the study around GAP uptake revealed that although **99% of clients claimed that the GAP information was useful, only 21% adopted the full set of recommendations**

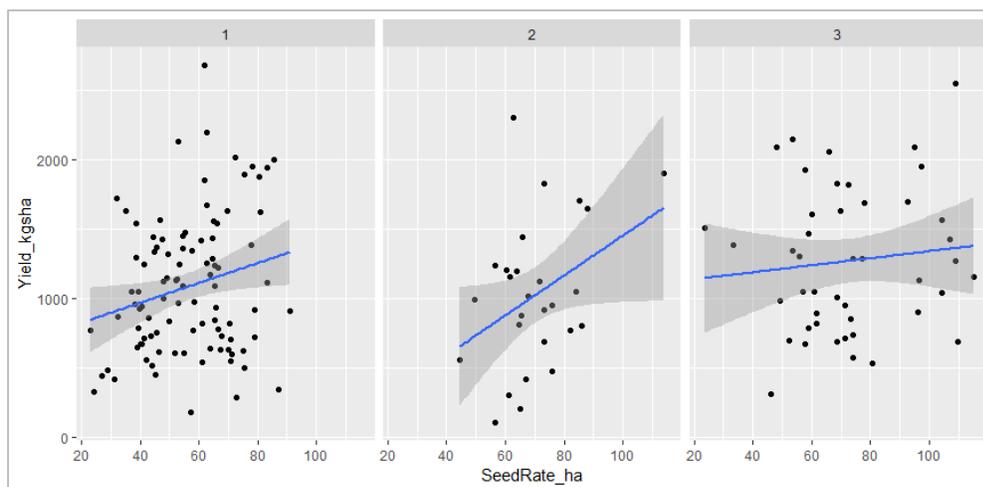
from the training. This disparity reveals interesting insights for practitioners and extension agents around information and training alone cannot guarantee adoption by farmers. The top reason cited for not implementing the recommended GAP (by 64% of respondents) is because they are too labor intensive. When comparing adoption rates by gender, women adopted GAP at an even lower rate than men (15% vs. 28%). Interviewed women shared they have fewer hours available to work in the field due to competing household responsibilities and were less likely to have the authority to use household income to pay for additional labor to implement the GAP recommended practices.

The case study recommendations are specific to delivering on GAP and providing a bundled service for smallholder farmers, but they are also relevant for a variety of actors in the broader agricultural sector to overall improve and customize service and training delivery to different smallholder farmer segments not just based on gender but also characteristics such as financial capacity, propensity to adopt new practices, or decision-making role in the household:

1. Segmentation: Investigate differences among client profiles to clarify which GAP recommendations are most attainable for specific client segments.
2. Customize Training Content and Delivery: Design the training methodology to tailor relevant content to specific groups.
3. Measure Training Relevance for Women: Test the effectiveness and relevance of customized GAP training, especially for women, that account for labor, cost and other household responsibility constraints.
4. Show Evidence of Change and Results: Demonstrate incremental changes to farmers to achieve more significant and sustainable results.

Based on the dataset provided by ATL, MEDA conducted additional analysis using clustering techniques. MEDA discovered three clusters according to the relationship between Yield and Seed Rate.<sup>8</sup> Although yields were not significantly different, seed rates were. The below diagrams visualize the three different slopes associated with each unique cluster. Each cluster has a significantly different relationship between Yield per hectare and Seed rate (kg of seed per hectare).

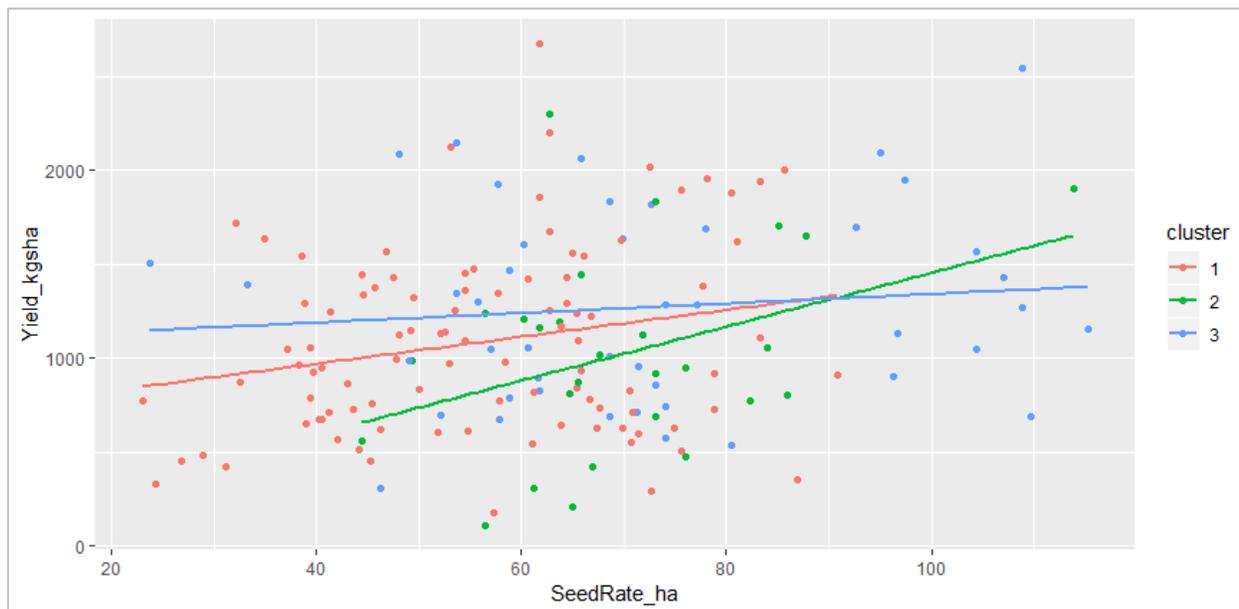
- Yields are NOT significantly different
- Seed rates ARE significantly different



#### Slope of lm lines

c1 = 7.169  
c2 = 14.344  
c3 = 2.535

<sup>8</sup> Seed rate: quantity of seed of a crop required to sow a unit area of land for optimal production



Further details on the ATL farmer cluster data is found in [Appendix 5](#).

### Case #3: Holistic financial products promote farming households to plan and formalize sales and transactions.

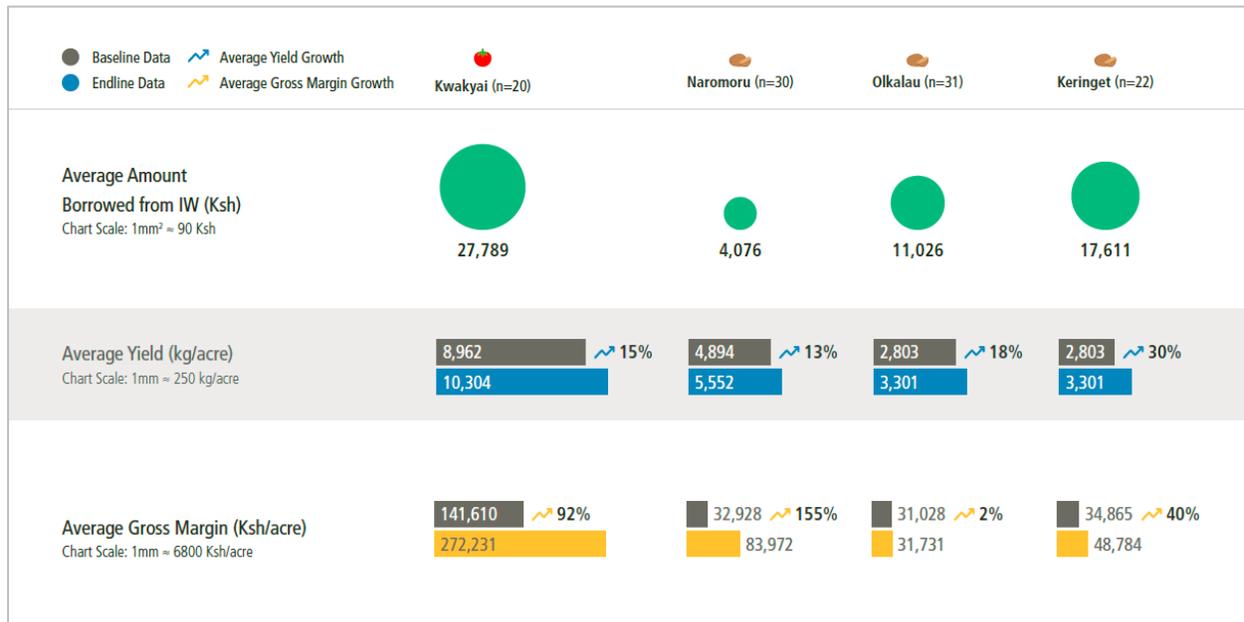
In Kenya, where many citizens, including smallholder farmers use mobile money (M-Pesa) to transact and make payments – Dodore Kenya Limited researched and analyzed its product 'Agri-Wallet. This platform is enabled by blockchain technology and provides farmers with a mobile account with restricted funds specifically earmarked for the purchase of inputs for increased productivity and income.



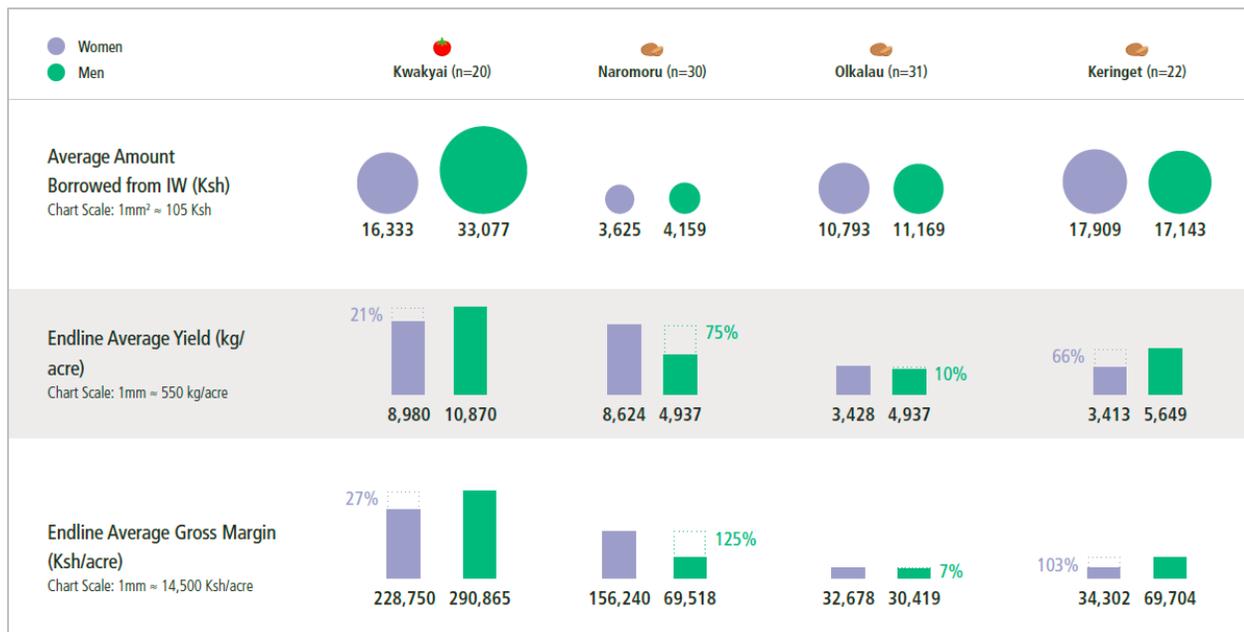
Figure 3 A client of Dodore on his mobile phone during the potato harvest

Using the Agri-Wallet, farmers can purchase necessary inputs on time by saving their own money and accessing overdraft credit on the platform. The study results revealed the participating farmers demonstrate willingness to save and borrow from the Agri-Wallet for the purchase of agricultural inputs, the timely access of these inputs increase productivity and incomes. Mean differences for gross margins were positive for both crops (potato and tomato) and statistically significant at 10% for potato production in Nyeri County.

The results of the Dodore pilot study and research are summarized in the following graphics. The first visualizes the status of saving, borrowing and uptake of innovation by women and men potato and tomato farmers. With the borrowed funds from the Agri-Wallet, the tomato farmers purchased certified seed and increased their yields by 15% and an average gross margin increase by 92%. For the potato farmers across three different counties, all farmers had positive growth in average yield and average gross margin, however the farmers in Olkalau recorded lower yield and income due to weather extremities (rain-related) in the region during the flowering period.



The second disaggregates by gender the average amounts borrowed, the endline average yields (kg/acre) and average gross margin (Ksh/acre).



### Theme 3: Smallholder Household Decision Making

A variety of factors contribute to the decisions that smallholders consider and make for their farms and their families. These include availability of key resources such as time, labor, inputs, knowledge etc.; affordability of utilizing such resources; power and authority to make decisions (social and gender norms); and various competing household needs and expenses. This theme focuses on how decisions are made at the household level, especially when it comes to adoption of and investment in agricultural innovations. The below results from the following partners demonstrate the critical role of the need for programs, policies, and products/services

to account for nuances in decision-making as households are also complex systems, within larger systems of community systems, agriculture and market systems, and enabling environment systems.

**Result #1: Combine financial and agricultural capacity building for improving a variety of outcomes for smallholder households.** World Relief tested and analyzed this model in Rwanda to explore what type of programming contributes to effective joint decision making and participation of women and men for improving financial, agricultural, and nutritional outcomes in rural households. The project hypothesized that *'after one year of engaging in agriculture and savings programs, smallholder farmers participating in both would have improved agriculture, economic and nutrition outcomes than those participating in only one or none of World Relief's programs.'*

World Relief discovered the following results in the domain of decision making. When measuring women's participation in decision making (defined as any decision made by the wife alone (female-headed household), with her husband, or by herself without her husband being involved), adjusted analyses suggest that there was a negative association between participating in both programs or only the agriculture program, compared to the control group. However, when using the definition of joint decision making (decisions made between both the wife and husband), there is a positive association between participating in both programs or agriculture only programming, compared to the control group, after adjusting for demographics.

This seems to suggest that for this approach of bundling financial and agricultural programming is effective in improving communication and decision making within agricultural households, between wives and husbands. However, if the goal is women's economic empowerment and enhancing agency, other models or approaches may be more appropriate.

For agricultural innovation, the study found participation in both agriculture and savings programs led to the greatest relative increase in the number of innovative agricultural strategies used. On average, those participating in both programs used 1.94 (95% CI: 1.48, 2.55) times more innovative agriculture strategies than those that did not participate in either program.

Within the parameters of the study, quantitative results suggest that participation in Agriculture For Life (AFL) or Savings for Life (SFL) did not have any effect on agricultural investment, crop productivity of crop diversity. One contributor of this may be that the first year of programming, the focus is to develop a knowledge base and adopting a new set of practices and therefore, the downstream impacts of these programs such as increases in agricultural investment and improved agricultural outcomes are not realized until several years of participation. However, qualitative results suggested that among World Relief households who participated in both agriculture and savings programs, seemed to invest more in agriculture than those participating in only one of the programs. Land rental was the most common use of

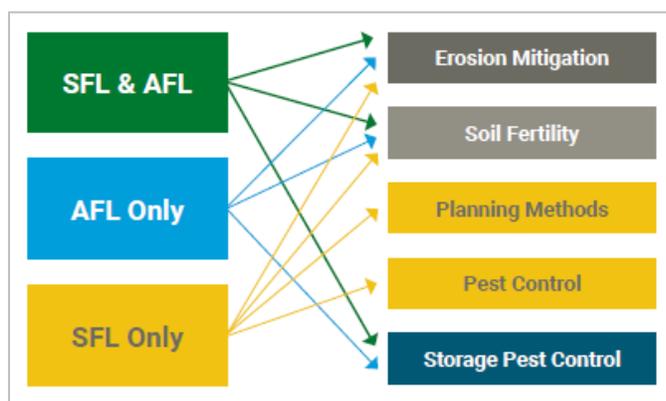


Figure 4 The effect of AFL and SFL programs on types of agricultural innovation

funds, followed by potato seed and fertilizer. Further details on the evaluation outcomes are found in [Appendix 4](#).

**Result #2: Promote goods and services that save time or money for women customers.**

As a commercial entity, Bidhaa Sasa leveraged existing insights that a main selling feature is time and cost savings for women customers. Their business model targets rural women who are at the bottom of the pyramid and can afford products that cost under \$100. In testing the range of agricultural tools and innovations to potentially add to their product catalogue, the company built on the need to promote products that are simple, affordable and transformational for their customers. To create demand and drive adoption (i.e. delivering value to customers) for products with good repayment rates, the product itself must be transformational such as improving living conditions (solar lighting kit, an existing product that the company sells), or increase farm productivity (water tank, sprayers, drying canvases etc.).

For women especially, time or money savings are key. If the first demo or first use does not compel her to see and believe the product will save her time or money, there is risk of low adoption, or default. As reported under the customer centricity theme above, the agricultural tools pilot resulted in a similar female/male ratio where about 70% of the customers are women, and 30% are men across the portfolio, with the exception of the pressure sprayer (about 50% purchased by women and men). This product may be an outlier perhaps because spraying is typically associated with men's agricultural/farming activities, whereas women will usually contribute to activities such as weeding (pre-harvest) or drying grain (post-harvest).

This specific insight around 'transformational products' that will save customers time and money is an interesting one for the development community. There is opportunity for organizations implementing agriculture programs or financial service providers desiring to expand their customer base. By empathizing with smallholder farmer clients, especially women, such actors can launch targeted marketing campaigns and frame value creation in a way that women will appreciate and be drawn to.

b) Use of research results and impact on target communities:

MEDA asked each partner to rate the following statement: "Our organization will include the lessons and/or results from the MEDA-funded research in future initiatives or plans targeting smallholder farmers." Of the 10 organizations, 4 selected 'agree', and 6 stated 'strongly agree'. Some examples include:

- CIDRE (Bolivia): "We are already working in complementing some technological resources with the MVP non-conventional collateral registry system, so we can improve our collateral registration and monitoring system. Additionally, we plan to share the lessons with some financial institutions and regulators to promote needed reforms."
- Bidhaa Sasa (Kenya): "There were many lessons learned that have been incorporated in the business already such as the inclusion of new ag tools in the catalogue. Others are still work in process: the logistics of handling large items is far from trivial and we still have to learn how to accommodate these smoothly into our operations in Kenya and expansion into Uganda."
- World Relief (Rwanda and beyond): "A couple of applications of the study findings are already in discussion internally at World Relief: how to more intentionally and strategically link and better sequence SFL (savings) and AFL (agriculture) programming to maximize impact of both programs jointly as per study findings. We are also in

discussion around further strengthening the nutrition lessons that are part of Agriculture for Life, given the promising nutrition outcomes in the study report resulting from the messaging and lessons on nutrition.”

- I-DEV International (Peru and beyond): "We will apply the best practices designed and used for user research and human centered design. We will focus more on the ongoing gap in market access to affordable and improved, appropriate fit appliances and agtech solutions and how to unlock that value chain bottleneck. More funding is needed here. We're already apply this to our analysis of productive use of energy and e-appliances for the clean mini grid work we are doing in East Africa."

Additionally, a few partners shared the following feedback regarding the impact of the research on target communities in the countries where research was conducted:

- Agronomy Technology Limited (Malawi): “This grant provided a fantastic opportunity to step back from the implementation of the model and to focus on the "understanding" of our clients' needs and behaviour. It allowed us to confront stated preferences / needs with **actual behaviour**. The Chithumba model was built based on the assumption that stated preferences would translate into action if "unlocked", but this study revealed that there are more barriers than anticipated to drive adoption and achieve the targeted outcomes.”
- CARE Bangladesh: “The NTF model with Bank Asia and Green Delta Insurance was piloted under an existing agro input supply chain model and the financial products designed under this pilot is an addition to the existing product portfolio of that supply chain project. At present CARE is implementing over 50 projects around the country and a number of projects may adopt the designed product or the distribution model or even both.”

c) How research ethics issues were assessed or managed:

There are two key areas around research ethics that are relevant for this project. The first relates to country clearance, the second is around improving research practices around informed consent during monitoring and field visits with partners.

Between year 1 and year 2, MEDA signed contracts with the ten awarded partners for the research portfolio. Four partners in Kenya, Malawi and Rwanda were required to obtain country clearance approvals. Each country has different research/ethics approval bodies and processes, and even with the proper documentation, some of the partners faced several months of implementation delays because clearance was required before they could start. Further lessons around this are shared in the section on [Problems and Challenges](#).

As a research and learning-oriented project, MEDA reflected on lessons from the first few monitoring visits in Kenya and Malawi and began to refine our monitoring tools and research approach when conducting field visits. Not only would MEDA co-develop the itinerary and overall objectives with the partners, we also shared in advance the interview guides including the interview pre-amble/introductory statement and interview questions. MEDA iterated these tools to ensure we took lessons from the most recent visit and applied our learning and best practices to the next visit, such as ways to obtain informed consent, whether written or verbal.

## Specific objective 2

“To develop concrete, evidence-based policy and programming recommendations on the use of non-traditional financial services to foster agricultural innovation uptake by local stakeholders and to inform policymakers and donors at the national and global levels.”

a) Synthesize main research results during project, highlight the progress made

This specific objective relates to the recommendations for local stakeholders, policymakers and donors at national and global levels on the use of non-traditional finance for smallholder farmers to adopt agricultural innovations.

The fourth theme of the INNOVATE learning agenda is **Policy and Regulatory Transformation** – and focuses on the opportunities for governments to pursue inclusive and innovative policies for agricultural finance, with an emphasis on smallholder farmer populations. Currently, smallholders do not fit well under one-size-fits-all formal banking structures. Yet traditional responses and policies by governments and Central banks to address inadequate credit for agricultural production and rural transformation is the use of highly subsidized and controlled finance through specialized credit institutions or guarantee facilities. Not all these programs, policies or facilities are successful as planned. For example, MEDA participated in key industry events such as AFRACA’s International Conference on Best Practices in Rural and Agricultural Finance, where dialogue among Central Bank representatives, Financial Institutions and financial technology (fintech) companies revealed that guarantee and risk-sharing schemes are not necessarily innovative or achieving the uptake by financial service providers as anticipated. Therefore, three areas of opportunity emerged for Central Banks:

1. Role: The Central Bank cannot directly be involved in development domains – policies and programs meant to foster and increase lending to rural segments need a clear exit plan and strategy for the private sector to see its role in serving such markets
2. Research: In order to support national economic development, Central Banks need strong research departments to discover and validate where policies and regulation needs strengthening (for example: climate change risk, mitigation and financing)
3. Regulation: An ongoing challenge and constraint in agricultural lending, especially for smallholders, is collateral. This is even more pressing for women. The Central Bank has the authority and ability to assess what other forms of collateral beyond land or property titles can be accepted and revise the regulation accordingly beyond.

For example, in MEDA’s paper on ‘Experiences in Gender-Sensitive Solutions to Collateral Constraints’, women who typically require smaller loan sizes and have limited assets compared to men, would benefit from expansion of acceptable collateral (non-conventional collateral) such as livestock, inventory, warehouse receipts, contracts and legal documents, or equipment.

The below table is a summary of key observations and policy implications, along with key stakeholders engaged with or identified by each partners/project:

Country / Project	Observations / Policy Implications	Potential Uptake by Key Stakeholders
Bolivia – CIDRE IFD	The registration system for non-conventional collateral (NCC) has great potential to demonstrate viable methods to identify and allocate NCC with specific borrowers, reducing asset ownership uncertainty for	<ul style="list-style-type: none"> <li>• Members of FINRURAL (Asociación de</li> </ul>

Country / Project	Observations / Policy Implications	Potential Uptake by Key Stakeholders
	<p>lenders and increasing collateral options for borrowers. Although CIDRE engaged with <b>BDP</b> (Banco de Desarrollo Productivo) a public-sector second-tier bank and policymaker at the start of the project for potential future buy-in of the registry, Bolivia experienced a political crisis and transition in 2019 which made it very challenging to promote the registry and engage with BDP. Major reforms are needed to enhance the impact of the formal usage of NCC on access to finance and support asset recovery for financial institutions.</p>	<p>Instituciones Financieras de Desarrollo) -</p> <ul style="list-style-type: none"> <li>• BDP (Banco de Desarrollo Productivo)</li> </ul>
<p>Peru – Global Canopy</p>	<p>The project researched the conditions of the financial products available to smallholders. At the same time, Global Canopy learned from interviewed farmers the current types of credit they were obtaining, how they were using; they also shared what kinds of interest rates and conditions they would require to obtain credit for the adoption of sustainable practices in their farms. The research findings were presented to financial institutions where they also informed Global Canopy about the barriers they face to provide credit to farmers due to the risk factors associated with agricultural activities. During the first meeting with the financial institutions, they agreed that further discussions were needed but it should also involve other key stakeholders that could support in the development of a green credit line.</p> <p>Through discussions with the financial institutions, Global Canopy confirmed that this sector is still not clear on the definition of green credit products and what they should provide. The engagement with these institutions allowed Global Canopy to explain how they could design a product that meets the farmers' needs and the type of support financial institutions should seek from the government and civil society to design and implement a credit product that will generate environmental and social benefits.</p>	<ul style="list-style-type: none"> <li>• private sector suppliers,</li> <li>• financial institutions</li> <li>• government representative of Ministry of Environment and Ministry of Production</li> </ul>
<p>Pakistan – Pakistan Microfinance Network</p>	<p>The study revealed that warehouse receipt financing holds substantial opportunities for smallholder farmers to improve their crop yields, increase earnings and enter new markets. However, the research also exposed the limited existence of required warehouse infrastructure, government regulations and quality assurance measures as well as limited collaboration among key sector actors to adopt it. There is need for a more structured system and removal of certain barriers such as asymmetric information, lack of collaboration and lack of incentives to achieve the target.</p> <p>Recently the State Bank of Pakistan revised its regulation and allows financial service providers to utilize warehouse receipts as collateral. This collateral reform demonstrates how Central Banks can support policies and regulation that are favorable for groups like smallholder farmers.</p>	<ul style="list-style-type: none"> <li>• State Bank of Pakistan, Ag Credit/MFI Dept</li> <li>• DFID Pakistan</li> <li>• Pakistan Agriculture Coalition</li> <li>• National Rural Support Programme (NRSP)</li> <li>• Rural Support Programmes Network</li> </ul>

Country / Project	Observations / Policy Implications	Potential Uptake by Key Stakeholders
CARE Bangladesh	<p>Towards the end of its pilot, CARE Bangladesh organized a policy roundtable dialogue in March 2020 with the following objectives:</p> <ol style="list-style-type: none"> <li>1. Share experiences in implementing non-traditional financing models in rural Bangladesh with private sector and government</li> <li>2. Obtain vision of stakeholders around a draft policy brief</li> <li>3. Share major policy concerns around agricultural insurance and other financial products</li> <li>4. Consolidate policy propositions related to agricultural insurance and set strategy for a way forward</li> </ol>	<ul style="list-style-type: none"> <li>• Head of Agricultural Loan Department, Bangladesh Bank</li> <li>• Managing Director, Green Delta Insurance Company</li> <li>• Head of Agent Banking, Bank Asia</li> <li>• Head of Agribanking, BRAC Bank</li> </ul>

Key Policy Recommendations from INNOVATE research projects with potential for policy reform/changes:

Country	Recommendations
Peru	<ol style="list-style-type: none"> <li>1. View the private sector as a strategic actor for agricultural development and involve the private sector in the development and design of national programs to achieve climate change targets and commitments.</li> <li>2. Provide information such as reliable price data and geographical information to allow FIs to better assess risks specific to agriculture and climate change.</li> <li>3. Fund elements of the climate finance agenda that cannot be financed by FIs as part of a loan product to farmers, such as technical assistance to farmers on sustainable agriculture practices, and capacity building to FIs.</li> </ol>
Pakistan	<p>The new regulation by the State Bank of Pakistan allowing warehouse receipts as collateral is an important step in adjusting the agriculture finance landscape and serving the needs of farmers. Additional policy recommendations include:</p> <ol style="list-style-type: none"> <li>1. Hold Training Campaigns and Technical Assistance for FSPs on warehouse receipt financing: important for the development of a warehousing framework and system where key stakeholders and partners secure knowledge of the ecosystem, model and respective roles. Technical assistance can be provided to FSPs to establish efficient WRF procedures within their institutions and maintain low administrative costs.</li> <li>2. Hold Training Campaigns for Farmers: Users of warehouse receipt financing (smallholder farmers) also can receive training on the mechanism, so they understand the concept and framework. Extension agents from the Ministry of Agriculture may be best suited to provide such training and work with FSPs to organize and deliver such sessions for clients.</li> <li>3. Hold Training and Technical Support to Warehouse Operators/Collateral Management Companies (CMCs): the government should also work with CMCs and provide technical support to ensure their establishment and business management practices follow best practices, ensuring CMCs grow and are sustainable.</li> <li>4. Allocate funds for WRF Pilots: given the low number of WRF pilots in Pakistan, it is key to support FSPs to pilot and test WRF products with relevant partners and farmers. Such pilot funding could require diverse target markets and regions, to determine how best to adapt the model to different contexts and groups.</li> <li>5. Support Funds for Farmers: the government can consider subsidizing transport and warehouse costs to farmers, especially smallholders. For promoting adoption of WRF, this may be a necessary incentive to demonstrate the business case and value to farmers before they take on 100% of the cost before trying out a new financing mechanism.</li> <li>6. Sponsor Exchange Trips: organize and implement exchange trips that expose FSPs and other industry stakeholders to successful WRF models in countries like India.</li> </ol>

Country	Recommendations
Bangladesh	<p>CARE Bangladesh produced a policy brief which includes the following recommendations following its policy roundtable event with key stakeholders in March 2020:</p> <ol style="list-style-type: none"> <li>1. Price discovery mechanism for agricultural produce to support smallholder farmers</li> <li>2. Loan against warehouse receipt for smallholder farmers</li> <li>3. Technology driven solutions for easy and smooth financing</li> <li>4. Cluster and cooperative approach for farmers</li> <li>5. Supporting smallholder farmers using Corporate Social Responsibility funds</li> <li>6. Awareness development and financial literacy for smallholder farmers</li> <li>7. Collaborative approach to support smallholder and women farmers</li> </ol>

## 5. RESEARCH METHODOLOGY

INNOVATE primarily used a mixed methods approach, combining qualitative and quantitative methods to measure progress towards the overall objective of the project and explore the following research goal and questions:

**Research goal:** to understand and learn about different products, services, and models of NTF and the role NTF may have in the adoption of agricultural innovations by women and men smallholder farmers in the three target regions: Eastern and Southern Africa; South Asia; and South America

### Research questions:

- Awareness: how do women and men smallholders learn about non-traditional finance and agricultural innovations available to them?
- Access: do women and men smallholders have equal access to non-traditional finance and agricultural innovations?
- Affordability: can women and men smallholders afford non-traditional financing options and agricultural innovations available to them?
- Value: do women and men smallholders perceive available financing and agricultural innovations as valuable and desirable?

The research questions sought to understand themes and related topics based on perspectives of women and men smallholder farmers, while considering the larger macro-trends in agricultural financing for smallholders worldwide. As such, INNOVATE primarily used qualitative research methods to identify and understand intangible factors such as social norms, gender roles, and decision-making by smallholder populations in the context of finance and innovation adoption.

Qualitative Research Methods	Quantitative Research Methods
<p>In-depth interviews: this method was used during monitoring visits, for MEDA to understand participating clients on their experiences and perspectives. The first set of monitoring visits in Kenya and Malawi, MEDA conducted unstructured interviews.</p> <p>Based on lessons learned from those initial monitoring visits, MEDA developed interview tools and conducted semi-structured interviews when we visited partners in Nepal, Bangladesh and Rwanda.</p>	<p>Descriptive: in addition to narrative reporting each quarter, partners reported progress on key performance indicators – specific metrics for the project and common indicators such as adoption rate, time to convert, and net promoter score, as appropriate and relevant to the initiative. We also asked each partner to conduct locus of control surveys with a sample group of farmers to learn about women and men farmers’ attitudes towards agricultural technologies and innovations.</p>

Qualitative Research Methods	Quantitative Research Methods
	MEDA also used online surveys to collect feedback on events and stakeholder engagement.
Focus groups: MEDA conducted a few focus group discussions with Bidhaa Sasa clients in Kenya, and with World Relief's clients in Rwanda.	Comparative analysis: In one case, MEDA analyzed the dataset provided by Agronomy Technology Limited in Malawi to supplement the case study findings. Three clusters were identified based on the relationship between Yield and Seed Rate (kg of seed per hectare).

A sample interview guide and the reporting template which research partners used to report quarterly progress and impact data is in [Appendix 6](#). Finally, the learning agenda methodology and strategy is in [Appendix 7](#).

## 6. PROJECT OUTPUTS

The main outputs of INNOVATE are the culmination of the learning agenda activities which include learning papers and the final synthesis report by MEDA, the case studies and final reports produced by the research partners, along with other outputs such as presentation slides from learning events and digital artefacts such as the INNOVATE website and several videos. To uphold IDRC's [Open Access Policy](#), the following actions have been taken:

- All project outputs are accessible and free of charge to the end user and available to the public on the [MEDA INNOVATE learning agenda site](#)
- The forthcoming article in the Enterprise Development & Microfinance Journal referenced below is an Open Access publication<sup>9</sup>
- Grey literature (final technical reports, theses, papers, workshop reports, conference proceedings, brochures, and audiovisual products) have been placed in the [IDRC Digital Library](#)

PUBLICATIONS BY MEDA
1. Concept Paper – <a href="#">Starting Small: Pathways to Customer Centricity</a> (January 2019)
2. Learning Paper – <a href="#">A Customer Centric Lens for Good Agricultural Practices</a> (September 2019)
3. Learning Paper – <a href="#">Experiences in Gender-Sensitive Solutions to Collateral Constraints</a> (January 2020)
4. Learning Paper – <a href="#">Digital Platforms and Customer Centricity: Fostering Adoption and Sustained Use of AgTech Solutions</a> (March 2020)
5. Learning Paper – <a href="#">Lessons from Farming Households: Agricultural Decision Making and Shifting Norms for Women's Economic Empowerment</a> (April 2020)
6. Final Synthesis Report – <a href="#">NTF4Ag: Emerging Lessons and New Frontiers</a> (April 2020)
7. Summary Brief – <a href="#">Mobile Money and PAYG Innovations to Scale AgTech Adoption in Peru</a> (February 2020)
8. Summary Brief – <a href="#">Redefining Finance for Agriculture: Green Agricultural Credit for Smallholders in Peru</a> (December 2019)
9. Summary Brief – <a href="#">The Chithumba Model: Combining Pre-Harvest Financing, GAP Training, and Access to Markets for Smallholders in Malawi</a> (December 2019)
10. Policy Brief #1 – <a href="#">Warehouse Receipt Financing: Tackling the Financial Needs of Smallholders in Pakistan</a>
11. Policy Brief #2 – <a href="#">Warehouse Receipt Financing: Tackling the Financial Needs of Smallholders in Pakistan</a>

<sup>9</sup> By open access project outputs, IDRC means project outputs that are digital, online, free of charge at the point of use, and licensed by the [Creative Commons Attribution \(CC BY\) licence](#) —meaning free from restrictions on use or reuse, as long as the original author(s) are properly acknowledged and cited.

12. Journal Article – Calvin Miller and Clara Yoon, “Fostering smallholder investment and innovation through inclusive financial services.” *Enterprise Development & Microfinance* 31.1 (forthcoming 2020).<sup>10</sup>
13. Playbook – *Innovative Agri-Finance Challenge Grant Playbook* – joint publication by MEDA and the Fund for Rural Prosperity (an initiative funded by the Mastercard Foundation) – forthcoming 2020.<sup>11</sup>

#### PUBLICATIONS BY RESEARCH PARTNERS

1. Case Study Report – [Redefining finance for agriculture: green agricultural credit for smallholders in Peru](#) (En) by Global Canopy (April 2019)
2. Case Study Report – [Redefiniendo el financiamiento para la agricultura: crédito agrícola verde para pequeños productores del Perú](#) (Es) - Global Canopy (Abril 2019)
3. Case Study Report – [A Case Study of the Chithumba Model: A non-traditional finance mechanism to improve access to farm inputs in Malawi](#) by Agronomy Technology Limited (July 2019)
4. Final Report – [Non-Conventional Collaterals to Leverage Innovation Capital for Smallholder Farmers in Bolivia](#) by CIDRE IFD (Oct 2019)
5. Case Study Report – [Warehouse Receipt Financing: Tackling the Financial Needs of Smallholder Farmers in Pakistan](#) by Pakistan Microfinance Network (Nov 2019)
6. Final Report – [Mobile Money and PAYG Innovation to Scale AgTech Adoption in Smallholder Value Chains](#) by I-DEV International (Nov 2019)
7. Final Report – [Innovation Wallet Learning Project](#) by Dodore Kenya and University of Nairobi (Dec 2019)
8. Final Report – [Non-Traditional Financial Services for Smallholder Farmers in Nepal](#) by iDE Nepal (Dec 2019)
9. Final Report – [Product Testing and Diversification of Bidhaa Sasa’s Range of Products Sold on Credit](#) by Bidhaa Sasa (Mar 2020)
10. Case Study Report – [A Case Study of World Relief’s Agriculture for Life and Savings for Life in Rwanda](#) by World Relief (April 2020)
11. Policy Brief: [Engagement of Financial Institutions for Smallholder Farmers](#) by CARE Bangladesh (April 2020)

#### OTHER PROJECT OUTPUTS

1. Blog: [Experimentation in Smallholder Agriculture](#) (June 2019)
2. Blog: [Measuring What Matters in Smallholder Agriculture](#) (August 2019)
3. Webinar: [A Customer-Centric Lens for Good Agricultural Practices](#) (Sept 2019)
4. Side Event (Nairobi): [Learning Journeys of Smallholder Finance and Innovation Adoption](#) (Sept 2019)
5. Blog: [Smallholders as Customers, Not Pupils](#) (Nov 2019)
6. [Side Event \(New Delhi\) at the 6th World Congress on Rural and Agricultural Finance](#) (Nov 2019)
7. Webinar: [Using Data to Better Understand Smallholder Farmers](#) (Jan 2020)
8. Blog: [A Farmer-Centric Bank in Nepal](#) (Feb 2020)
9. Webinar: NTF4Ag Livestream Recordings (March 2020) – [Day 1](#) and [Day 2](#)
10. Blog: [How to better serve smallholders: key learning from INNOVATE’s 3-year initiative](#) (May 2020)
11. Video: [INNOVATE promotional video](#)

## 7. PROBLEMS, CHALLENGES AND LESSONS LEARNED

In the first year of implementation the project faced delays in the following domains with launching the awarded research projects:

**Country clearance for partners in Kenya, Malawi and Rwanda:** After MEDA announced the final research awards in November 2017, the project received country clearance requirements from IDRC. MEDA actively supported each partner (four in total in Eastern and Southern Africa) to understand the requirements and to work with the respective Coordinating Agencies and

<sup>10</sup> MEDA was expecting the article to be published in March/April 2020 however Practical Action has not yet published the latest issue of *Enterprise Development & Microfinance*.

<sup>11</sup> MEDA is co-authoring a publication called ‘Innovative Agri-Finance Challenge Grant Playbook’ in partnership with the Fund for Rural Prosperity, an initiative funded by the Mastercard Foundation. As a collaborative writing and publication endeavor, the expected launch for this publication is end of May/early June 2020.

Ministries as per the clearance requirements. For three out of the four projects, implementation was delayed due to the time required to obtain the necessary clearance.

The first clearance for the Dodore project was easily obtained because of the project's partnership with University of Nairobi. The second clearance was obtained in Malawi by Agronomy Technology Limited, although waiting for clearance delayed the start of the project and research activities by 1-2 months. The third clearance was obtained by World Relief in Rwanda (this research project originally was going to be implemented in Burundi; however, the research ethics and clearance was very difficult. World Relief proposed pivoting to doing the research in Rwanda, since the topic of interest/inquiry was the same – related to savings and agricultural training for rural communities). The fourth and final clearance was obtained by Bidhaa Sasa in September 2018, which meant a 6-month delay in starting project activities for the company.

A learning from this challenge and experience is to obtain country clearance requirement information from IDRC well in advance, and build in sufficient time for partners to obtain necessary clearances.

**Contracting delays:** On top of the country clearance requirement delays, the project faced a series of contract negotiation delays with partners who requested certain modifications to reporting or reimbursement conditions and clauses in MEDA's standard matching grant agreements. The multiple rounds of questions, feedback and negotiations meant that certain projects were delayed up to 3-4 months than anticipated in the proposal applications.

**Consortia/partnership delays and challenges:** A few projects (for example in Nepal and in Bangladesh) where INGOs like iDE and CARE partnered with commercial financial institutions, these projects also encountered delays with signing of Memorandum of Understanding agreements and navigating the various levels of signoffs required by these financial institutions. The project also faced a series of challenges related to partnerships, especially when launching the research projects in the various countries/regions. We learned early on that building trust through transparent, empathetic and regular communication contributes to mutual understanding and pro-active problem solving.

- 1. Grameen Foundation project in Tanzania faced significant delays and alignment with INNOVATE unclear.** MEDA initially selected eleven projects in 2017-2018. The 11<sup>th</sup> project was pending due to negotiations and country clearance delays as Grameen Foundation sought options for IRB approval in Tanzania. Based on a previous IDRC-funded initiative in Tanzania, MEDA understood the risk of significant delays with obtaining clearance in Tanzania. Despite MEDA's efforts throughout the negotiations with Grameen Foundation, it became clear that the scope change from the original submission was not aligned and proposed timeline was unrealistic. Another major concern was that the expected/potential learning would not contribute to the overall project and objectives and that the matching grant would fund an evaluation of their pilot project. MEDA decided to no longer proceed to the contract agreement stage in the 2<sup>nd</sup> quarter of Year 2, by that time almost all the awarded projects were implementing activities.
- 2. I-DEV International partnership – staff turnover, project scope, external factors impacted delivery and implementation.** With a combination of staff turnover and a broad/ambitious project scope (Pay-As-You-Go, mobile money, solar-powered drip

irrigation systems), MEDA intervened in November/December 2018 with an active and adaptive management approach, recommending to I-DEV to reconsider and narrow its overall scope for the project. The costs alone for BIM integration were over \$10,000 and the types of irrigation systems being promoted would need to be imported and were too costly for the participating farmers. By the time the I-DEV team was on board to revise its approach in early 2019, a terrorist attack occurred in an office complex in Nairobi, Kenya where I-DEV's office was located. The co-founder and CEO of I-DEV, Jason Spindler, who was involved in the design and provided leadership over the initiative, was among the victims who died in the attacks. As a result of this unexpected tragedy, the I-DEV team pivoted its team composition and leadership over the project. MEDA appreciated the leadership of I-DEV co-founder, Patricia Chin-Sweeney who stepped into Jason's role in overseeing the MEDA project, ensuring the project moved forward.

**Varied research capacity and skills among partners:** due to varied research capacity, skills and capabilities among different partners, the quality of the reporting and data MEDA received varied. In most cases, MEDA provided extensive support with editing, reviewing and offered communications/design support for the final deliverables (case study or final pilot learning reports). In other cases, MEDA also provided support with analysis and structuring of the results/lessons into a learning report/output appropriate for an external audience. The challenge with this additional support provided by MEDA, meant a trade off with the level of effort the team could contribute to MEDA's learning series and stakeholder engagement. A lesson learned around this challenge is to identify in advance the research needs and support of each partner and have a roster of technical experts with relevant research skills (qualitative, quantitative) or policy experience to provide tailored support. MEDA achieved this to some degree with customized support to projects like the Pakistan Microfinance Network (PMN), where one of MEDA's consultant's primary role was providing feedback and technical advisory/support to the PMN team in conducting their case study research around warehouse receipt financing.

**Summary of key risks and mitigation strategies:**

**1. Identification of cross-cutting research and common metrics across the project:** in the first year of the project, INNOVATE aimed to identify cross-cutting research themes and common metrics across all research projects. One strategy we tried was during the kickoff workshops MEDA held in each region, where we held discussions with the partners on the potential indicators that could apply across each of the projects. However, because there were two types of projects/awards (pilots vs. case studies), coming up with a common set of indicators for all ten projects was not possible. The cross-cutting themes (learning themes shared earlier in the report) emerged in year 2 and 3, after the projects were underway, and initial results and lessons were evident.

A relevant lesson/practice for future initiatives where there are diverse projects in a challenge fund or research portfolio is to identify common metrics for the pilot projects and a common set of metrics for the case study awards, then identify customized metrics specific to the initiative. For example:

Pilot study common metrics	Case study common metrics
<ul style="list-style-type: none"> <li>Adoption rate (%): # of clients adopted/using product / # of clients targeted</li> </ul>	<ul style="list-style-type: none"> <li># of reports/policy briefs shared with policymakers or stakeholders</li> </ul>

Pilot study common metrics	Case study common metrics
<ul style="list-style-type: none"> <li>• Time to convert: # of days from promotion to purchase/use</li> <li>• Net Promoter Score: On a scale of 1-10, how likely are you to recommend X product/service to a friend or colleague?</li> </ul>	<ul style="list-style-type: none"> <li>• # of engagements (email, phone call, meeting) with key stakeholder or policymaker</li> <li>• # of inquiries from stakeholders on project results, lessons, or recommendations</li> <li>• # of stakeholders/policymakers or institutions adopts recommendations from case study/policy brief</li> </ul>

- **Leverage advisory committee members for strategic direction, stakeholder engagement and alignment with other initiatives:** as part of the grant agreement with IDRC, MEDA invited key individuals from strategic organizations in the smallholder finance landscape to participate in the project advisory committee. The range of organizations with representatives on the advisory committee included: ISF Advisors, Inter-American Development Bank (IDB), African Rural and Agricultural Credit Association (AFRACA), Institute of Peruvian Studies (IEP), Global Affairs Canada (GAC) and CGAP. The advisory group contributed throughout the life of the project: evaluated research proposals, participated in update calls, reviewed and provided feedback on project outputs, participated the mid-term review meeting and in learning events as speakers or panelists.
- **Delivery of project learning agenda:** At the start of year 3, MEDA recognized our team was at maximum capacity in fulfilling roles like project management, technical advisory, and research support. The learning agenda (publications, events, stakeholder engagement) required additional support and resources to enable the project to deliver on these aspects of the project. Through a competitive process, MEDA awarded a sub-contract to MarketShare Associates (MSA) as a learning partner, to support the project’s learning agenda activities. We learned through this year-long partnership that it takes about three months to develop a cadence to the work and identify the strengths and skills that each team member can contribute to the learning agenda. MSA’s editorial, design and communications activities were a value add to the project, while MEDA maintained overall oversight, strategic direction and technical inputs of the learning agenda.

## 8. ADMINISTRATIVE REFLECTIONS AND RECOMMENDATIONS

*What would you do differently as a result of this experience, and what lessons can be derived for improving future projects?*

**Focus on a smaller number of countries and regions for research awards:** MEDA awarded 10 organizations/companies with research grants across 8 countries and 3 regions. While there are benefits to having a diverse research portfolio and partners (interesting insights, varied results, diverse country and regional perspectives), there are also limitations with connecting the research results and findings to a wider ecosystem. Also, because the project lacks a critical mass of research projects in a single country, this makes it challenging to incentivize stakeholders to have an interest in utilizing the research for policy considerations or programming for smallholder farmers. From this experience, MEDA recommends for future projects with a similar research objective and global scope to conduct upfront scoping and selection of countries where there is greater potential for influence and uptake of the research.

**Identify a roster of local technical consultants:** The design of INNOVATE included a portion of the budget allocated for three types of consultants: gender consultant, agricultural finance,

and local consultants. The local consultant line was intended for event organization and coordination, which MEDA did not utilize until planning for the final event in Ottawa started in year 3. While having a roster of technical consultants has benefits such as additional resources and support, the technical expertise of the contracted consultants may not always be aligned to the needs of the funded research projects. MEDA hired a local consultant to support iDE Nepal with a specific technical area (crop insurance), this approach could be replicated if there were 3-4 maximum countries where partners implemented projects.

**Integrate and streamline the project learning agenda activities (events, dissemination and promotion, stakeholder engagement) within each partner's individual project plan.**

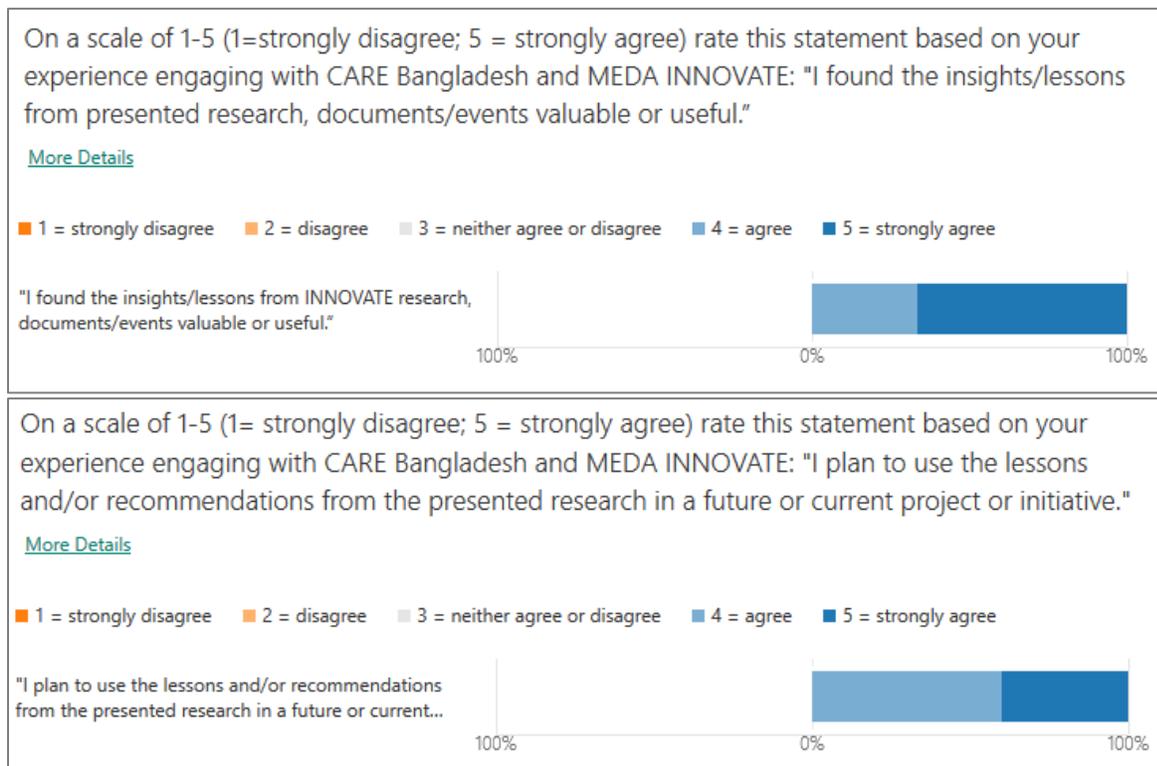
The overall INNOVATE learning agenda was formulated between MEDA and MSA (learning partner) towards the end of Year 2 and early into Year 3. While the learning themes were generated based on the trends and insights MEDA observed across the ten projects in the research portfolio, at times there was a disconnect between the dissemination efforts and stakeholder engagement activities led by MEDA and the role/influence each partner has in their respective countries and contexts. For example, in Peru, Global Canopy engaged stakeholders and held a roundtable event with financial institutions, government representatives and cooperatives. While MEDA participated in the event (in February 2019), we realized afterwards that coordination between Global Canopy's dissemination efforts and MEDA's stakeholder strategy could have been improved.

For future projects that include a learning agenda as a key component, MEDA recommends:

- Work with partners to contribute to the learning agenda strategy and design specific dissemination activities/events for partners to lead and execute in local contexts. Include as necessary and appropriate in the sub-grant agreements, which makes expectations around dissemination and stakeholder engagement clear and upfront.
- Reflecting on this experience, MEDA recognizes that partners have an incentive to promote and disseminate the lessons and results from their projects because of their co-investment in the project and ownership of the successes and learnings. In future projects, implementers like MEDA can build on partners' networks and relationships to gain traction by sharing and disseminating successes and lessons learned to build/enhance credibility among stakeholders such as the government, funders/donors, or similar implementing organizations.
- The dissemination efforts should be a partnership between MEDA and partners from identification and strategy development, engagement, to follow up/encouraging uptake of results/information. Involve partners in the learning agenda strategy and activities, for an increased likelihood of stakeholder uptake and sustainability of promotion and dissemination of results after the project is over.
- The design and objective of INNOVATE aimed to 'inform policymaking and programming on agricultural development' over a three-year period (36 months), which is an ambitious timeline to achieve such meaningful policy/programming-related change or impacts.

Towards the end of the project, MEDA piloted this approach of having a partner disseminate results/lessons by convening stakeholders with CARE Bangladesh and intended to do so with World Relief, but World Relief had to cancel their event due to COVID-19. CARE Bangladesh organized and hosted a policy roundtable event with key stakeholders including representatives from the Central Bank and financial institutions in early March before events/convenings were no longer deemed safe. CARE Bangladesh was responsible for organizing the logistics, sending

invitations, and facilitating the discussion during the roundtable event. Following the event, CARE Bangladesh shared a post-event feedback survey and circulated the [policy brief](#) generated based on the discussions and content from the event. Below are samples of positive feedback regarding the usefulness and applicability of the lessons and recommendations from CARE Bangladesh and INNOVATE's research.



This approach was successful because CARE Bangladesh tapped into their networks and convened key stakeholders to learn about their pilot and discussed policy and regulation issues that women and men smallholders face in Bangladesh. For future projects similar to INNOVATE, MEDA recommends dissemination and stakeholder engagement activities utilize partner networks, for an increased likelihood of uptake of recommendations and lessons and to promote sustainability of the learning, results and findings.

*What recommendations would you make to IDRC with respect to the administration of the project, related to the scope, duration, or budget?*

**Administration:** MEDA appreciated the support, feedback and flexibility provided by IDRC's Agriculture and Food Security team (Project Officer, Team Leader, communications etc), especially with the pivots required due to COVID-19. The response and support from IDRC were welcomed and appreciated, as MEDA quickly pivoted to organizing a virtual version of the online learning event. One area of reflection/recommendation where MEDA could have leveraged IDRC's network of researchers, partners and stakeholders (such as policymakers) for the dissemination of its learning agenda, especially in regions where IDRC has a regional office (Nairobi, Kenya for example). As a research organization and funding institution, IDRC could introduce or link organizations like MEDA with organizations/partners implementing projects with

similar themes or research objectives, to maximize the learning outcomes, results and funding in terms of value for money and impact.

**Scope and duration:** Measuring uptake/influence of the research: it would have been more realistic to focus the 3 years on the research (“assess the potential of non-traditional financial services to enable large scale adoption of agricultural innovations among women and men smallholder farmers”) and then have an additional 6-12 month period focused on dissemination, stakeholder engagement efforts, and the learning agenda. Due to the series of delays outlined above, several of the partners were concluding their research projects in early 2020. Therefore, with the delayed timeline of concluding the projects, this also impacted the timeline of writing, producing, designing and disseminating the final outputs from each project. Also, the final synthesis report had a rushed timeline for writing and production and was launched 1.5 weeks after the online learning events, which left two weeks for dissemination through various channels and the project’s network of stakeholders.

As for the country and regional selection: as mentioned above, a key lesson learned is if the research projects were concentrated in certain countries (3 projects in Kenya; 3 projects in Peru; 3 projects in Nepal) - the broad scope/goal of the project could have been refined and the learning agenda activities could have targeted key stakeholders and actors in a specific country context.

**Budget:** The total budget from IDRC was CAD \$2,351,010. By the end of the project, MEDA spent 99.3% (\$2,333,757) of the budget. The research expense category, the largest portion of the budget (65%) was dedicated for the research awards/grants; workshops and events, the learning agenda (publications, hiring MSA as the learning partner; communications). The budget design and allocation of key costs/resources in the research category enabled MEDA to support the research partners and develop and deliver the series of learning agenda activities.

## APPENDIX 1 – STAKEHOLDER ENGAGEMENT

Below is a summary of stakeholders INNOVATE engaged with throughout the life of the project.

Organization	Stakeholder Type	Region(s)	Period	Engagement Type(s)
UNCDF Nepal	<b>Development community</b>	<b>South Asia</b>	June 2018; May 2019	In-person meeting
DFID Nepal	Development community	South Asia	Jun-18	In-person meeting
CGAP	Development community	Global	2018-2019	In-person meeting; Conference Calls;
Mastercard Fund for Rural Prosperity	Development community	Sub-Saharan Africa	October 2019- April 2020	In-person meeting; Conference Calls; Request for advice and support
MercyCorps AgriFin Accelerate	Development community	Sub-Saharan Africa	2018-2019	In-person meeting
AFRACA	Policymakers	Sub-Saharan Africa	2017-2020	In-person meeting; Conference Calls; Request for advice and support
FSD-Kenya	Private sector	Sub-Saharan Africa	Dec-18	In-person meeting
ANDE East Africa	Development community	Sub-Saharan Africa	2018-2020	In-person meeting; Conference Calls; Request for advice and support
AMFI Association of Microfinance Kenya	Private sector	Sub-Saharan Africa	Dec-18	In-person meeting
Press Trust Malawi	Development community	Sub-Saharan Africa	Dec-18	In-person meeting
WFP Malawi	Development community	Sub-Saharan Africa	Dec-18	In-person meeting
Dalberg Design Impact Group	Development community	Sub-Saharan Africa	2019-2020	In-person meeting; Conference Calls;

Organization	Stakeholder Type	Region(s)	Period	Engagement Type(s)
CSAF	Private sector	Sub-Saharan Africa	Jan-19	In-person meeting; Conference Calls;
OikoCredit Peru	Private sector	Latin America and the Caribbean	Feb-19	In-person meeting
Root Capital Peru	Private sector	Latin America and the Caribbean	Feb-19	In-person meeting
Aliazna Cacao Peru	Development community	Latin America and the Caribbean	Feb-19	In-person meeting
Fundacion Sembrar Sartawi	Private sector	Latin America and the Caribbean	Feb-19	In-person meeting
Innovision	Development community	South Asia	May-19	In-person meeting
Asia Development Bank - Bangladesh	Development community	South Asia	May-19	In-person meeting
Kenya Markets Trust	Development community	Sub-Saharan Africa	Oct-19	In-person meeting
CARE Rwanda	Development community	Sub-Saharan Africa	Oct-19	In-person meeting
ICCO Rwanda	Development community	Sub-Saharan Africa	Oct-19	In-person meeting
Urwego	Private sector	Sub-Saharan Africa	Oct-19	In-person meeting
Access to Finance Rwanda	Research community	Sub-Saharan Africa	Oct-19	In-person meeting; Request for advice and support
MCC Rwanda	Development community	Sub-Saharan Africa	Oct-19	In-person meeting; Request for advice and support
APRACA	Policymakers	East Asia and Pacific	Dec-19	Conference call
Lutheran World Relief	Private sector	Sub-Saharan Africa	Feb-20	Request for advice and support
MCIC - FIT	Development community	Global	2019-2020	Request for advice and support; Conference Call

## APPENDIX 2 – INNOVATE PORTFOLIO SUMMARIES

Project	Hypothesis	NTF Component	Key Results/Progress
Agronomy Technology Limited (Malawi   Case Study)	It is possible to develop a holistic and financially sustainable model that bundles to address the customers' problems via the Chithumba model based on access to quality inputs (seeds and inoculant), access to quality extension services, and access to fair markets	Bundled services / inputs on loan	The Chithumba model was built based on the assumption that stated preferences would translate into action if "unlocked" but this study revealed that there are more barriers than anticipated to drive adoption and achieve the targeted outcomes.
Bidhaa Sasa (Kenya   Pilot Study)	Test whether Bidhaa Sasa's distribution and finance model works for the adoption of agricultural tools and goods, amongst rural women farmers in Western Kenya	Affordable agricultural goods/tools on credit via group liability and peer-to-peer learning model	<ol style="list-style-type: none"> <li>1. Added five new ag tools to the product catalogue with minor adjustments to the operational model.</li> <li>2. Sold most of the newly added products in most regions and measured uptake and repayment behaviour.</li> <li>3. Women clients still represent the vast majority of clients (70%+) and are the main users and the payers of the ag tools purchased.</li> </ol>
Dodore Kenya Limited (Kenya   Pilot Study)	Smallholders farmers will buy more innovation and increase their production and income when they have a mobile Innovation-wallet which makes it easy to save and borrow funds specifically earmarked for innovation.	Mobile wallet – targeted savings and borrowing for innovation (specific purpose savings account)	The study revealed farmer willingness to use agri-wallet financial services if they understand how using it will lead to increasing farm productivity.
World Relief (Rwanda   Case Study)	Linking female smallholder farmers with agricultural training, input suppliers, and VSLA groups will improve investments in agriculture inputs/innovations, raise production, and improve access to more diverse food.	Savings groups combined with agricultural training and farmer field schools	Main Conclusion: Implementing the farmer field school model and the village savings and loan association model simultaneously allows households to save and gives them the capacity to invest, educates them on nutrition and agricultural innovation, and improves joint decision making. Together, these direct impacts allow households to agriculturally innovate more often, improve their economic situation, and improve their nutrition.
CIDRE IFD (Bolivia   Pilot Study)	The dissemination of a financial technology that enables the use of non-conventional collaterals to back innovation capital lending operations AND the implementation of the required legal regulatory setting will enable farmers to access innovation capital.	Registration and management of non-conventional collateral for innovation capital loans	<ol style="list-style-type: none"> <li>1. Empirical evidence review seems to validate the hypothesis that NCC have a positive relation with access to finance and, hence, help promoting financial inclusion for smallholder framers.</li> <li>2. Clients and loan officers shared positive feedback on the use of the pilot registry for NCC.</li> </ol>
I-DEV International (Peru   Pilot Study)	If smallholders are provided with support to adopt an affordable pay-as-you-ago mobile money payment scheme, they will purchase, adopt and reap the benefits of agricultural technologies (i.e. precision drip irrigation).	Cooperative-managed revolving loan fund for agricultural technology such as drip irrigation	Switching the focus from "agtech centered" solution to a "customer-centered" one moved the project away from the technical complexities of agtech/mobile money integration to focus on real-life issues farmers face in geography, climate, lack of tech access and cash flows.

Project	Hypothesis	NTF Component	Key Results/Progress
Global Canopy (Peru   Case Study)	By integrating smallholders' perceptions and needs, then the design of rural green credit lines can be improved and therefore enhance the uptake by smallholders.	Green finance (loan products) for smallholders to transition to sustainable agricultural practices	<ol style="list-style-type: none"> <li>1. Presented results of the research to FIs on current conditions to agricultural credit in Peru and discuss how these conditions must change to meet the need of the farmers</li> <li>2. Global Canopy invited to participate in the Working Group led by the Ministry of Environment in Peru to discuss financial mechanisms for the agricultural sector.</li> </ol>
iDE (Nepal   Pilot Study)	Utilizing community managed rural collection centers to act as “business correspondents” on behalf of a commercial bank will profitably increase smallholder access to rural finance and crop insurance and therefore increase uptake of innovative technologies to improve production.	Embedded financial services (agricultural input loans) in collection centers	<ol style="list-style-type: none"> <li>1. The successful testing and formal adoption of the NTFS business correspondent model was adopted by partner Muktinath Bikas Bank to utilize and compensate collection centers for managing climate smart agriculture non collateral loans for small farmers</li> <li>2. The successful testing of the collection center managed crop insurance with farmers using Muktinath Bank loans for their premium payments and subsequent interest of crop insurance companies to utilize collection centers as crop insurance agents</li> </ol>
Care Bangladesh (Bangladesh   Pilot Study)	Nesting both commercial banking and insurance services into the existing Krishi Utsho value chain will improve the financial stability and livelihoods of smallholder farmers.	Embedded bundled commercial banking services in input supply shops	Developed a unique financial product bundle model for farmers by merging an agro loan with weather index-based insurance and distributed this product from a single agent. CARE will continue this initiative through other projects and expect private sector companies will be encouraged to see such merger as this reduces their distribution cost.
Pakistan Microfinance Network (Pakistan   Case Study)	The current regulatory framework and the existing ecosystem for Warehouse Receipt Financing Scheme can be adopted for smallholder farmers in Pakistan through the microfinance institutions.	Warehouse receipt systems	WRF holds substantial opportunities for SHFs to improve crop yields, increase earnings and enter new markets. However, the research also exposed the limited existence of required warehouse infrastructure, government regulations and quality assurance measures and limited collaboration among key sector actors to adopt it. A more structured system and removal of certain barriers such as asymmetric information, lack of collaboration and lack of incentives to achieve the target are required for scaling for small producers.

## APPENDIX 3 – QUANTITATIVE RESULTS / ANALYSIS

### Agricultural Innovations (24 products total)

No.	Product	Total units (M+F)	Total units (F)	Total units (M)	Country/Project
1, 2	1 canvas + 4 bags	3178	2320	858	Kenya
3	Grain silos	82	62	20	Kenya
4	Water tanks	328	253	75	Kenya
5	Pressure sprayer	73	39	34	Kenya
6	Milking machine	1	1	-	Bolivia
7	Water tank construction	1	-	1	Bolivia
8	Cattle	2	2	-	Bolivia
9	Cattle food	3	3	-	Bolivia
10	Cattle storage	1	1	-	Bolivia
11	Drip irrigation	245	-	-	Nepal, Peru
12	Sprinkler	553	-	-	Nepal
13	Improved seeds	1615	-	-	Nepal, Kenya, Rwanda
14	Plastic Pond	24	-	-	Nepal
15	Plastic House	250	-	-	Nepal
16	Hail Net	16	-	-	Nepal
17	IPM	2495	-	-	Nepal
18	Thai Jar	65	-	-	Nepal
19	Mini Tiller	17	-	-	Nepal
20	Sunflower pump	1	-	-	Nepal
21	Chaff	-	-	-	Bangladesh
22	Oil Cake	-	-	-	Bangladesh
23	Cattle Mat	-	-	-	Bangladesh
24	Fertilizer	-	-	-	Rwanda
Total		8950	2674	987	

Throughout the life of the project, almost 9,000 total units of agricultural innovations, inputs and products were purchased by participating women and men smallholder farmers across 6 countries: Kenya, Bolivia, Nepal, Peru, Rwanda, Bangladesh. The data above is based on what was reported to MEDA from partners, however it is likely the number of goods purchased exceeds the figure we report here. MEDA did not receive complete data from all parts, therefore, certain products (#21-24) do not have the number of units purchased.

The top 3 products purchased were the drying canvas and hermetic storage bags in Kenya, with over 3,000 units purchased by Bidhaa Sasa clients. Integrated Pest Management (IPM) products were second (nearly 2,500 units purchased in Nepal); and improved seeds (over 1,500 units) in Nepal, Kenya and Rwanda.



### Agricultural Innovations



A grain silo and knapsack sprayers sold by Bidhaa Sasa (Kenya)



iDE Nepal clients showcase a pest trap (left) and a hailstorm net and mulching (right)



On the right, a drying canvas for women customers of Bidhaa Sasa to dry maize and other grains; and a water tank on the left, for improved water access for the home and farm.



## APPENDIX 4 – AGRICULTURAL AND NUTRITIONAL OUTCOMES STRATIFIED BY AFL AND SFL INTERVENTION GROUPS ACROSS BASELINE AND ENDLINE

Agricultural and Nutritional Outcomes stratified by AFL and SFL intervention groups across baseline and endline

\*The table presents mean  $\pm$  standard deviation unless the variable specifies %, in which case the proportion of farmers with the specified outcome is reported.

Variable	SFL & AFL		AFL Only		SFL Only		Neither	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Agricultural Production Outcomes</b>								
N	147	150	75	75	75	74	75	75
Total Crop Productivity, kg	246.4 $\pm$ 496.7 (0-3900)	263.9 $\pm$ 873.3 (2-10020)	132.2 $\pm$ 213.4 (1-1100) (74)	102.81 $\pm$ 135.1 (6-700)	242.2 $\pm$ 439.4 (10-3220)	168.1 $\pm$ 186.2 (0-760)	868.8 $\pm$ 1808.1 (5-10020)	952.8 $\pm$ 3506.5 (10-30000)
Main Crop Productivity, kg	185.3 $\pm$ 434.5	225.2 $\pm$ 866.2	104.4 $\pm$ 162.9	73.8 $\pm$ 87.7	193.1 $\pm$ 427.7	120.1 $\pm$ 125.9	777.4 $\pm$ 1801.3	525.1 $\pm$ 765.3
Crop Diversity	2.0 $\pm$ 0.9	1.7 $\pm$ 0.8	1.5 $\pm$ 0.7	1.4 $\pm$ 0.8	2.3 $\pm$ 1.0	2.1 $\pm$ 0.9	1.7 $\pm$ 0.9	1.7 $\pm$ 0.6
<b>Agricultural Innovation &amp; Spending</b>								
N	150	150	75	75	75	75	73	75
Agricultural Spending, USD	52.4 $\pm$ 100.4 (0-799)	45.6 $\pm$ 72.8 (0-571)	31.3 $\pm$ 48.1 (0-286)	23.9 $\pm$ 36.1 (0-171)	72.1 $\pm$ 85.2 (2-457)	45.0 $\pm$ 50.9 (0-343)	131.4 $\pm$ 215.6 (0-1109)	93.3 $\pm$ 125.8 (1-914)
Any Saving in the Last Month, %	23.3	96.7	22.7	29.3	20.0	98.7	29.3	41.3
Saving amount in the prior Month, USD	1.1 $\pm$ 3.9	6.8 $\pm$ 11.3	1.0 $\pm$ 2.8	1.0 $\pm$ 3.0	0.9 $\pm$ 3.5	3.8 $\pm$ 3.8	6.0 $\pm$ 22.0	10.8 $\pm$ 24.4
Any loan use on Agriculture among all, %	10.7	40.7	4.0	24.0	2.7	40.0	16.0	29.3
Loan Users, N	28	110	6	31	4	59	22	23
Any loan use on Agriculture	57.1	55.5	50.0	58.1	50.0	50.8	54.5	95.7



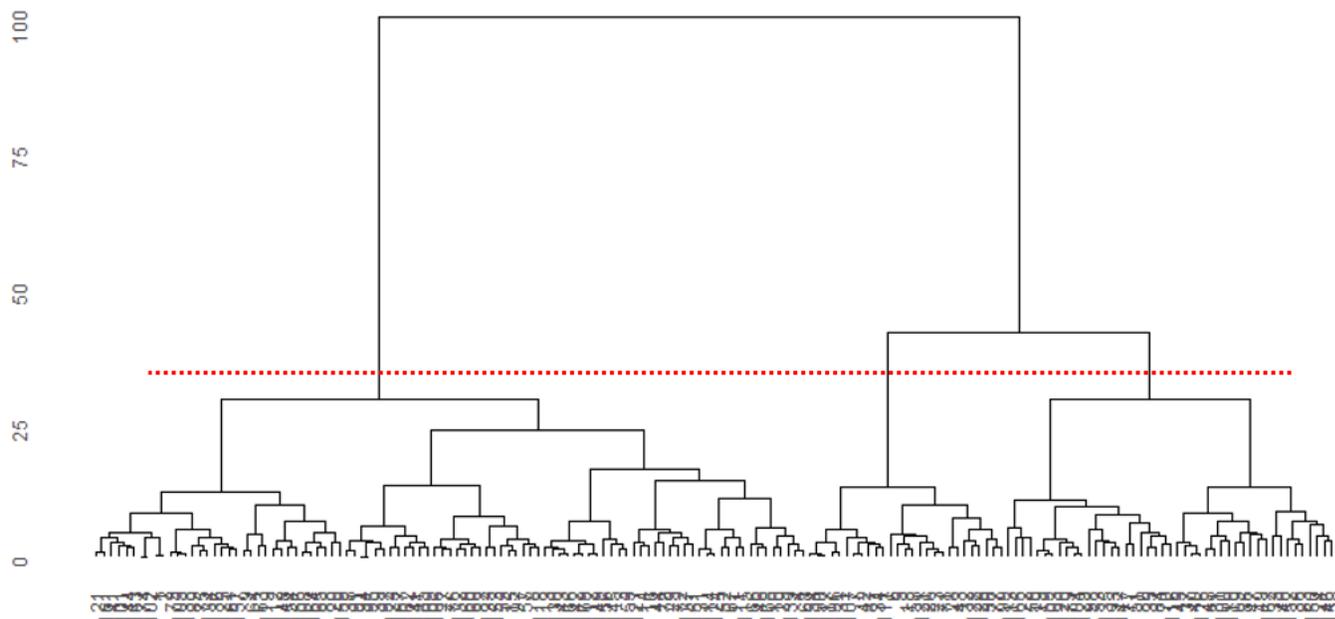
Variable	SFL & AFL		AFL Only		SFL Only		Neither	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
among loan users, %								
<b>Food Security and Dietary Outcomes</b>								
	150	150	75	75	75	75	75	75
Household Food Security, %								
Food Secure	1.3	16.0	0.0	2.7	1.3	2.7	6.7	13.3
Mildly Food Insecure	1.3	6.0	2.7	6.7	1.3	1.3	0.0	1.3
Moderately Food Insecure	5.3	22.7	20.0	25.3	10.7	10.7	2.7	17.3
Severely Food Insecure	92.0	55.3	77.3	65.3	86.7	85.3	90.7	68.0
Youngest Child N	39	33	20	23	10	7	29	16
Youngest Child 6-23 Food Groups Consumed	2.7 ± 1.4	3.4 ± 1.0	2.6 ± 1.1	3.1 ± 0.9	3.1 ± 2.0	2.1 ± 1.1	3.9 ± 1.7	3.7 ± 1.4
Youngest Child 6-23 months Minimum Diet Diversity, %	17.9	45.5	10.0	26.1	50.0	0	65.5	50.0
Women Head of Household N	148	146	75	74	75	38	75	60
Women Head of the Household Food Groups Consumed	3.6 ± 1.3	4.5 ± 1.7	3.6 ± 1.1	4.0 ± 1.8	4.6 ± 1.4	3.8 ± 1.5	5.3 ± 2.0	5.3 ± 1.9
Women Head of the Household Minimum Diet Diversity, %	22.3	49.3	18.7	33.8	56.0	36.8	62.7%	73.3
<b>Other</b>								
<b>N</b>	106	150	74	75	72	75	73	75
Locus of Control	11.9 ± 5.3	25.0 ± 3.8	11.3 ± 4.7	26.5 ± 4.7	14.1 ± 4.6	19.9 ± 3.6	12.9 ± 8.0	17.9 ± 4.5



Variable	SFL & AFL		AFL Only		SFL Only		Neither	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
<i>Self-Report Economic Situation Compared to 1 year ago, N</i>	150	150	75	75	74	75	73	74
A little, or much, better, %	32.7	91.3	28.0	76.0	23.3	60.0	27.0	51.4
Much better, %	3.3	27.3	0.0	12.0	0.0	4.0	2.7	6.8
<i>Factor leading to Economic Improvement, N</i>	-	137	-	57	-	45	-	38
Increase in Agricultural Production, %	-	50.4	-	43.9	-	26.7	-	50.0
Selling of Agricultural Production, %	-	14.6	-	3.5	-	17.8	-	15.8
Decrease household expenditures on Food, %	-	19.7	-	38.6	-	17.8	-	47.4
Initiated Income Generating Activity, %	-	20.4	-	5.3	-	21.4	-	4.8

## APPENDIX 5 – AGRONOMY TECHNOLOGY LIMITED DATA

Euclidean technique - identifies 3 clusters



	Yield				Seed rate					
<b>Average s per Cluster</b>	1	1085.			1	56.3				
	2	1025.			2	70.2				
	3	1270.			3	72.8				
<b>ANOVA</b>		Df	Sum Sq	Mean Sq		Df	Sum Sq	Mean Sq	F val	
	F value		Pr(>F)			ue	Pr(>F)			
	cluster	2	1367150	683575	2	cluster	2	9979	4990	16.8
		.651	0.0736	.			2.26e-07	***		
	Residuals	166	42810670	257896	Residuals	166	49294	297		
<b>Signif. codes:</b>	0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1									

### Cluster 1

First.Name	District	Gender	GPS.Ha	
Length:97	Lilongwe: 2	Min. :1.000	Min. :0.2268	
Class :character	Mchinji :92	1st Qu.:1.000	1st Qu.:0.3442	
Mode :character	Ntchisi : 3	Median :2.000	Median :0.4303	
		Mean :1.598	Mean :0.4795	
		3rd Qu.:2.000	3rd Qu.:0.5751	
		Max. :2.000	Max. :1.1340	
SeedRate_ha	Yield_kgsha	Ridge.Spacing	Row.Type	Row.Spacing
Min. :23.06	Min. : 178.9	Min. :1.000	Min. :2	Min. :4
1st Qu.:44.09	1st Qu.: 708.4	1st Qu.:1.000	1st Qu.:2	1st Qu.:4
Median :55.28	Median : 995.6	Median :2.000	Median :2	Median :4
Mean :56.34	Mean :1085.0	Mean :2.062	Mean :2	Mean :4
3rd Qu.:66.73	3rd Qu.:1416.7	3rd Qu.:3.000	3rd Qu.:2	3rd Qu.:4
Max. :90.84	Max. :2674.9	Max. :3.000	Max. :2	Max. :4
Plant.Spacing	Seeds.Per.Hole	Crop.Rating	Fertility	Disrict
Min. :2	Min. :1.000	Min. :1.000	Min. :1.000	Min. :1.00

1st Qu.:	2nd Qu.:	3rd Qu.:	4th Qu.:	5th Qu.:
1st Qu.:	2.000	1.000	1.000	2.00
Median :	2.000	2.000	2.000	2.00
Mean :	2.454	2.072	1.639	2.01
3rd Qu.:	3.000	3.000	2.000	2.00
Max. :	3.000	3.000	3.000	3.00

cluster  
 1:97  
 2: 0  
 3: 0

## Cluster 2

First.Name	District	Gender	GPS.Ha
Length:27	Lilongwe:25	Min. :1.000	Min. :0.05265
Class :character	Mchinji : 2	1st Qu.:1.000	1st Qu.:0.18832
Mode :character	Ntchisi : 0	Median :1.000	Median :0.21870
		Mean :1.333	Mean :0.24165
		3rd Qu.:2.000	3rd Qu.:0.27135
		Max. :2.000	Max. :0.49005

SeedRate_ha	Yield_kgsha	Ridge.Spacing	Row.Type	Row.Spacing
Min. : 44.39	Min. : 105.8	Min. :2.000	Min. :1	Min. :2.000
1st Qu.: 62.25	1st Qu.: 728.7	1st Qu.:3.000	1st Qu.:1	1st Qu.:3.000
Median : 66.96	Median : 987.7	Median :3.000	Median :1	Median :3.000
Mean : 70.16	Mean :1024.6	Mean :2.889	Mean :1	Mean :2.815
3rd Qu.: 75.97	3rd Qu.:1219.5	3rd Qu.:3.000	3rd Qu.:1	3rd Qu.:3.000
Max. :113.96	Max. :2301.7	Max. :3.000	Max. :1	Max. :3.000

Plant.Spacing	Seeds.Per.Hole	Crop.Rating	Fertility	Disrict
Min. :2	Min. :2.000	Min. :1.000	Min. :1.000	Min. :1.000
1st Qu.:2	1st Qu.:2.000	1st Qu.:1.000	1st Qu.:1.000	1st Qu.:1.000
Median :2	Median :2.000	Median :2.000	Median :2.000	Median :1.000
Mean :2	Mean :2.444	Mean :2.074	Mean :1.556	Mean :1.074
3rd Qu.:2	3rd Qu.:3.000	3rd Qu.:3.000	3rd Qu.:2.000	3rd Qu.:1.000
Max. :2	Max. :3.000	Max. :3.000	Max. :3.000	Max. :2.000

cluster  
 1: 0  
 2:27  
 3: 0

## Cluster 3

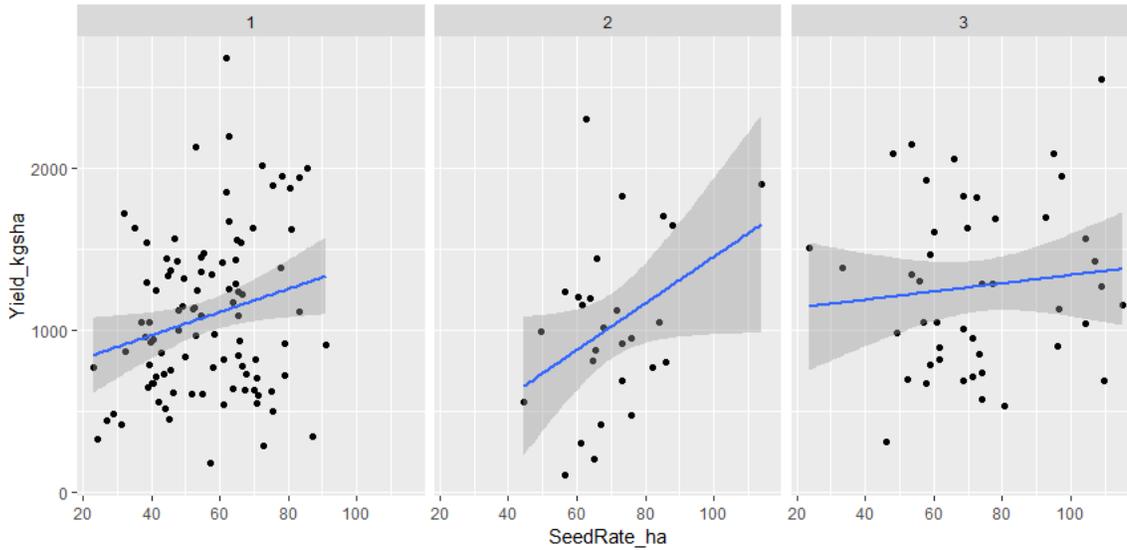
First.Name	District	Gender	GPS.Ha
Length:45	Lilongwe: 4	Min. :1.000	Min. :0.1377
Class :character	Mchinji :34	1st Qu.:1.000	1st Qu.:0.2187
Mode :character	Ntchisi : 7	Median :2.000	Median :0.3847
		Mean :1.667	Mean :0.3915
		3rd Qu.:2.000	3rd Qu.:0.5265
		Max. :2.000	Max. :0.9007

SeedRate_ha	Yield_kgsha	Ridge.Spacing	Row.Type
Min. : 23.79	Min. : 308.6	Min. :1.0	Min. :1.000
1st Qu.: 57.87	1st Qu.: 853.0	1st Qu.:3.0	1st Qu.:1.000
Median : 69.88	Median :1270.9	Median :3.0	Median :1.000
Mean : 72.77	Mean :1269.5	Mean :2.6	Mean :1.022
3rd Qu.: 92.59	3rd Qu.:1630.6	3rd Qu.:3.0	3rd Qu.:1.000
Max. :115.30	Max. :2541.8	Max. :3.0	Max. :2.000

Row.Spacing	Plant.Spacing	Seeds.Per.Hole	Crop.Rating
Min. :1.000	Min. :1.000	Min. :1.000	Min. :1.000
1st Qu.:2.000	1st Qu.:2.000	1st Qu.:1.000	1st Qu.:1.000
Median :3.000	Median :3.000	Median :1.000	Median :2.000
Mean :2.622	Mean :2.511	Mean :1.422	Mean :2.111
3rd Qu.:3.000	3rd Qu.:3.000	3rd Qu.:2.000	3rd Qu.:3.000
Max. :4.000	Max. :4.000	Max. :2.000	Max. :3.000

Fertility	Disrict	cluster
Min. :1.000	Min. :1.000	1: 0
1st Qu.:1.000	1st Qu.:2.000	2: 0

Median	:1.000	Median	:2.000	3:45
Mean	:1.556	Mean	:2.067	
3rd Qu.	:2.000	3rd Qu.	:2.000	
Max.	:3.000	Max.	:3.000	

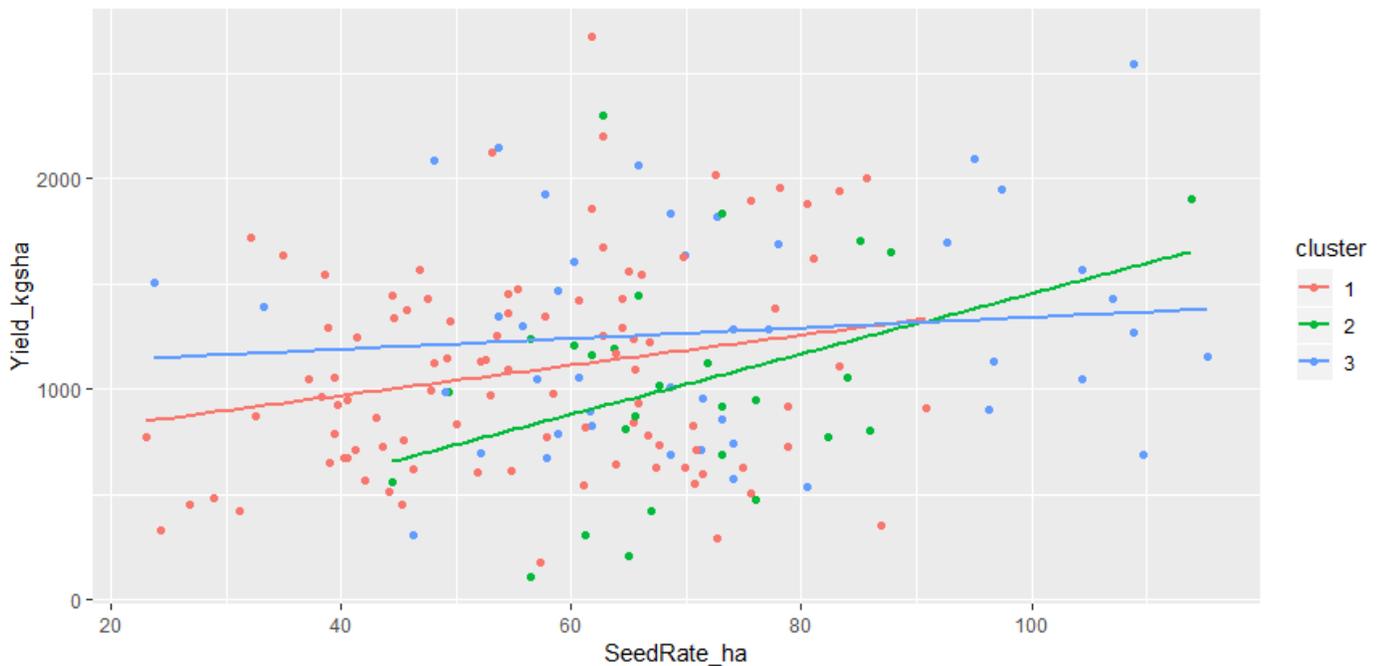


Each cluster has a significantly different relationship between Yield per hectare and Seed rate (kg of seed per hectare).

- Yields are NOT significantly different
- Seed rates ARE significantly different

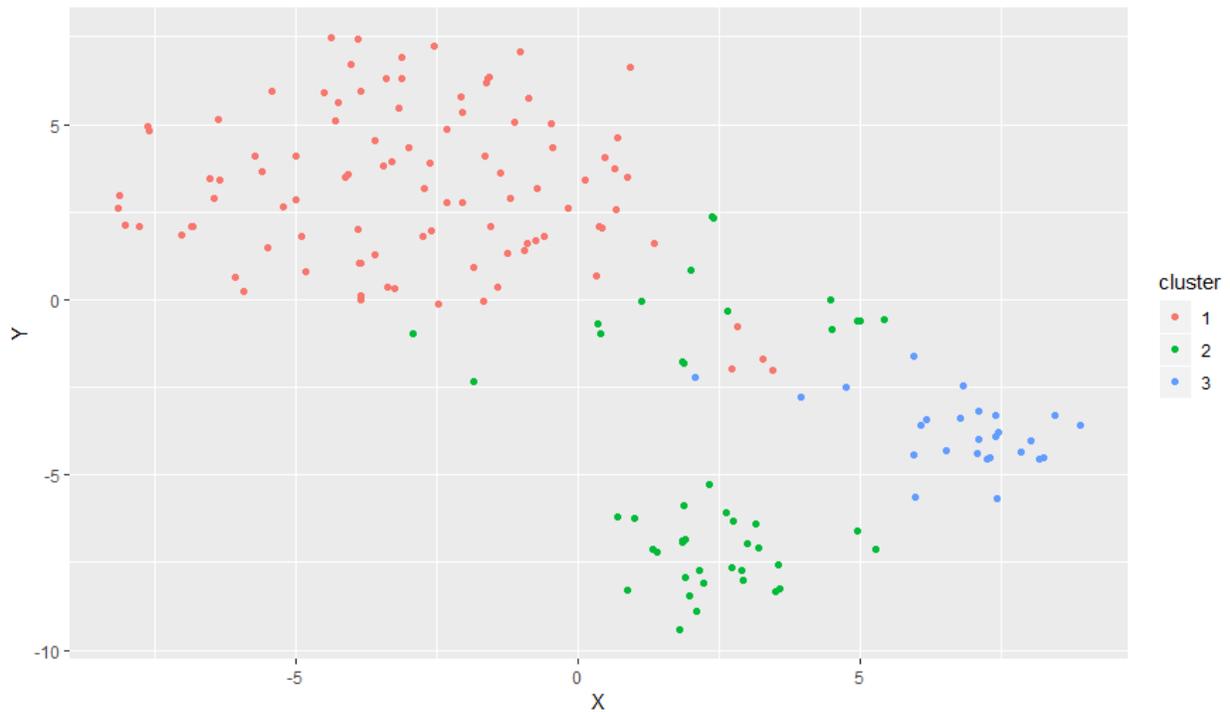
**Slope of lm lines**

c1 = 7.169  
 c2 = 14.344  
 c3 = 2.535



<p><b>Crop Rating (subjective)</b>                  lm(formula = Crop.Rating ~ SeedRate_ha + Ridge.Spacing, data = farmer_field_eucl)</p> <p>Residuals:                  Min 1Q Median 3Q Max                  -1.6729 -0.9069 0.1611 0.8869 1.2411</p> <p>Coefficients:                  Estimate Std. Error t value Pr(&gt; t )                  (Intercept) 2.171092 0.302556 7.176 2.28e-11 ***                  SeedRate_ha 0.007929 0.003705 2.140 0.03380 *                  Ridge.Spacing -0.251232 0.083835 -2.997 0.00315 **                  ---                  Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1</p> <p>Residual standard error: 0.9001 on 166 degrees of freedom                  Multiple R-squared: 0.07145, Adjusted R-squared: 0.06026                  F-statistic: 6.387 on 2 and 166 DF, p-value: 0.002127</p>	<p><b>Yield (kg per hectare)</b>                  lm(formula = Yield_kgsha ~ SeedRate_ha + Row.Type + Row.Spacing + Crop.Rating, data = farmer_field_eucl)</p> <p>Residuals:                  Min 1Q Median 3Q Max                  -886.42 -300.83 -66.04 262.25 1545.55</p> <p>Coefficients:                  Estimate Std. Error t value Pr(&gt; t )                  (Intercept) 1398.000 282.989 4.940 1.91e-06 **                  *                  SeedRate_ha 6.559 2.194 2.989 0.00323 *                  *                  Row.Type 242.388 137.840 1.758 0.08053 .                  Row.Spacing -189.913 91.255 -2.081 0.03898 *                  *                  Crop.Rating -199.334 39.086 -5.100 9.29e-07 **                  **                  ---                  Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1</p> <p>Residual standard error: 464.3 on 164 degrees of freedom                  Multiple R-squared: 0.1996, Adjusted R-squared: 0.18                  F-statistic: 10.22 on 4 and 164 DF, p-value: 2.052e-07</p>
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### Gower Distribution technique



#### Cluster 1

First.Name	District	EPA	Village	Postion
Years	Lilongwe: 0	Mlonyeni :60	Mtsiliza :16	Length:98
Length:98	Mchinji :97	Mulonyeni :33	Mkweza :13	Class :cha
Min. :1.000	Ntchisi : 1	Malomo : 1	Chaluma : 7	Mode :cha
Class :character	MLONYENI : 1	Kachilala: 7		
1st Qu.:3.000	Mlonyeni\r\n: 1	Bakiwe : 6		
Mode :character	MULONYENI : 1	Jusi : 6		
Median :3.000	(Other) : 1	(Other) :43		
Mean :2.969	Follow.Reccomendations	Gender	GPS.Ha	Land.Ty
3rd Qu.:3.000	Fertility	Crop.Rating		
Max. :3.000	Divorced: 3	No :86	Female:35	Owned :9
Marital.status	Average:46	Average:42	Male :63	1st Qu.:0.3442
pe	Married :90	Yes:12		Median :0.4455
Fertility	Good :43	Good :12		Mean :0.4805
Crop.Rating	Single : 3	Poor :44		3rd Qu.:0.5781
Follow.Reccomendations	Poor : 9			Max. :1.1340
Gender	Widowed : 2			
GPS.Ha				
Land.Ty				
Owned :9				
Rented:				
Mean :0.4805				
3rd Qu.:0.5781				
Max. :1.1340				
Ridge.Spacing	Row.Type	Row.Spacing	Plant.Spacing	Seeds.
Per.Hole	weeding	<20cm: 1	<5cm	: 0
<75cm:32	Double: 4	>20cm: 1	>5cm	:97
:1.000	Min. :1.000			Min.
>75cm:28	Single:94			1st Qu
.:2.000	1st Qu.:2.000			

75cm :38	20cm : 2	5cm	: 0	Median
:2.000	Median :2.000	None :94	Not possible to determine: 1	Mean
:2.439	Mean :1.949			3rd Qu
.:3.000	3rd Qu.:2.000			Max.
:3.000	Max. :3.000			
Other.Inputs	Labour.Cost	Tpt.Cost	SeedRate_ha	Yield_kgsha
Position	cluster			
No :90	Min. : 2000	Min. : 400	Min. :23.06	Min. : 290.5
Member :68	Min. :1			
Yes: 8	1st Qu.:10000	1st Qu.: 4000	1st Qu.:44.79	1st Qu.: 709.7
Secretary : 7	1st Qu.:1	Median : 5550	Median :56.46	Median :1048.8
Chairman : 6	Median :1	Mean : 5383	Mean :57.13	Mean :1109.9
Treasure : 6	Mean :13896	3rd Qu.: 7000	3rd Qu.:67.57	3rd Qu.:1429.7
Chairperson: 2	3rd Qu.:20000	Max. :10000	Max. :97.47	Max. :2674.9
Lead Farmer: 2	Max. :34000	NA's :68		
(Other) : 7	NA's :74			

## Cluster 2

First.Name	District	EPA	Village	Postion
Years				
Length:45	Lilongwe:30	Ukwe :30	Mgora : 8	Length:45
Min. :2.000				
Class :character	Mchinji : 8	Mlonyeni : 7	Mchoka : 5	Class :character
er 1st Qu.:3.000	Ntchisi : 7	Malomo : 6	Bakiwe : 2	Mode :character
Mode :character		Jailos : 1	Jusi : 2	
er Median :3.000		Mulonyeni: 1	Kambiri : 2	
Mean :2.933		MLONYENI : 0	Kanyemba: 2	
3rd Qu.:3.000		(Other) : 0	(Other) :24	
Max. :3.000				
Marital.status	Follow.Reccomendations	Gender	GPS.Ha	Land.T
ype Fertility	Crop.Rating			
Divorced: 3	No :43	Female:32	Min. :0.05265	Owned :
39 Average:19	Average:10	Male :13	1st Qu.:0.20250	Rented:
Married :41	Yes: 2		Median :0.25110	
6 Good :22	Good :10		Mean :0.30263	
Single : 0			3rd Qu.:0.40500	
Poor : 4	Poor :25		Max. :0.62370	
Widowed : 1				
Ridge.Spacing	Row.Type	Row.Spacing	Plant.Spacing	Seeds.
Per.Hole	Weeding			
<75cm: 4	Double:41	<20cm: 5	<5cm	: 1
:1.000	Min. :1.000			Min.
>75cm: 6	Single: 4	>20cm: 8	>5cm	:41
.:2.000	1st Qu.:2.000			1st Qu



75cm :35  
 :2.000 Median :2.000  
 :2.222 Mean :1.978  
 :3.000 3rd Qu.:2.000  
 :3.000 Max. :2.000

20cm :28  
 None : 4  
 5cm  
 Not possible to determine: 0

: 3 Median  
 Mean  
 3rd Qu  
 Max.

Other.Inputs	Labour.Cost	Tpt.Cost	SeedRate_ha	Yield_kgsha
Position				
No :42	Min. : 2000	Min. : 500	Min. : 38.36	Min. : 105.8
Member	:28			
Yes: 3	1st Qu.: 5750	1st Qu.: 1500	1st Qu.: 57.65	1st Qu.: 740.7
Chair ready	: 5			
Chairman	Median : 9750	Median : 2500	Median : 65.84	Median :1122.3
	: 4			
Secretary	Mean :14607	Mean : 4321	Mean : 69.14	Mean :1158.5
	: 4			
Chairready	3rd Qu.:17750	3rd Qu.: 6000	3rd Qu.: 75.97	3rd Qu.:1646.1
	: 1			
Committee Member	Max. :45000	Max. :15000	Max. :113.96	Max. :2541.8
(Other)	: 1			
cluster	NA's :31	NA's :26		
	: 2			
Min. :2				
1st Qu.:2				
Median :2				
Mean :2				
3rd Qu.:2				
Max. :2				

### Cluster 3

First.Name	District	EPA	Village	Postion
Years				
Length:26	Lilongwe: 1	Mulonyeni:19	Mkweza :5	Length:26
Min. :2.000				
Class :character	Mchinji :23	Mlonyeni : 4	Jusi :4	Class :charact
er 1st Qu.:3.000				
Mode :character	Ntchisi : 2	Malomo : 2	Kachilala:2	Mode :charact
er Median :3.000				
Mean :2.846		Ukwe : 1	Khombe :2	
3rd Qu.:3.000		Jailos : 0	MKweza :2	
Max. :3.000		MLONYENI : 0	Mtukwa :2	
		(Other) : 0	(Other) :9	
Marital.status	Follow.Reccomendations	Gender	GPS.Ha	Land.Ty
pe Fertility	Crop.Rating			
Divorced: 1	No : 2	Female: 5	Min. :0.1580	Owned :2
3 Average:16	Average:14	Male :21	1st Qu.:0.2157	Rented:
Married :23	Yes:24		Median :0.2989	
3 Good : 9	Good : 1		Mean :0.3824	
Single : 2			3rd Qu.:0.5245	
Poor : 1	Poor :11		Max. :0.9007	
Widowed : 0				

Ridge.Spacing	Row.Type	Row.Spacing	Plant.Spacing	Seeds.
Per.Hole <75cm: 3 :1.000 >75cm: 0 .:1.000 75cm :23 :1.000	weeding Double:26 Min. :1.000 Single: 0 1st Qu.:2.000 Median :2.000 Mean :2.038 3rd Qu.:2.000 Max. :3.000	<20cm: 0 <5cm >20cm: 2 >5cm 20cm :24 5cm None : 0 Not possible to determine: 0	: 1 : 5 :20 : 0	Min. 1st Qu Median Mean 3rd Qu Max.
Other.Inputs	Labour.Cost	Tpt.Cost	SeedRate_ha	Yield_kgsha
Position No :20 Member :20 Yes: 6 Lead Farmer: 3 Chair : 1 Chairman : 1 Secretary : 1 . Treasure : 0 (Other) : 0	cluster Min. : 5000 Min. :3 1st Qu.:10000 1st Qu.:3 Median :14500 Median :3 Mean :15278 Mean :3 3rd Qu.:20000 3rd Qu.:3 Max. :35000 Max. :3 NA's :17	Min. : 1600 1st Qu.: 3000 Median : 4000 Mean : 4540 3rd Qu.: 5000 Max. :12000 NA's :11	Min. : 23.79 1st Qu.: 60.94 Median : 71.30 Mean : 73.98 3rd Qu.: 94.37 Max. :115.30	Min. : 576.1 1st Qu.: 862.2 Median :1044.0 Mean :1120.7 3rd Qu.:1362.4 Max. :2089.3

### Comparison on Key Variables

Cluster	District	SeedRate (Ha)	Yield (Kgs/Ha)	Ridge Spacing	Row Type	Row Spacing	Seeds per hole
1	Lilongwe: 0 Mchinji: 97 Ntchisi: 1	Min: 23.06 1 <sup>st</sup> Q: 44.79 Median: 56.46 Mean: 57.13 3 <sup>rd</sup> Q: 67.57 Max: 97.47	Min: 290.5 1 <sup>st</sup> Q: 709.7 Median: 1048.8 Mean: 1109.9 3 <sup>rd</sup> Q: 1429.7 Max: 2674.9	<75cm: 32 >75cm: 28 75cm: 38	Double: 4 Single: 94	<20cm: 0 >20cm: 97 20cm: 0	Median: 2.0 Mean: 1.95
2	Lilongwe: 30 Mchinji: 8 Ntchisi: 7	Min: 38.36 1 <sup>st</sup> Q: 57.65 Median: 65.84 Mean: 69.14 3 <sup>rd</sup> Q: 75.97 Max: 113.96	Min: 105.8 1 <sup>st</sup> Q: 740.7 Median: 1122.3 Mean: 1158.5 3 <sup>rd</sup> Q: 1646.1 Max: 2541.8	<75cm: 4 >75cm: 6 75cm: 35	Double: 41 Single: 4	<20cm: 5 >20cm: 8 20cm: 28	Median: 2.0 Mean: 2.22
3	Lilongwe: 1 Mchinji: 23 Ntchisi: 2	Min: 23.79 1 <sup>st</sup> Q: 60.94 Median: 71.3 Mean: 73.98 3 <sup>rd</sup> Q: 94.37 Max: 115.3	Min: 576.1 1 <sup>st</sup> Q: 862.2 Median: 1044.0 Mean: 1120.7 3 <sup>rd</sup> Q: 1362.4 Max: 2089.3	<75cm: 3 >75cm: 0 75cm: 23	Double: 26 Single: 0	<20cm: 0 >20cm: 2 20cm: 24	Median: 1.0 Mean: 1.115

Notes: Cluster 3: Highest SeedRate, but smallest Seeds per hole – does that make sense: also has double row type and smaller row spacing (relative to Cluster 1)

## APPENDIX 6 – SAMPLE INTERVIEW GUIDE

### Bangladesh Interview Guide

Pilot hypothesis: If commercial banking and insurance services are embedded into existing Krishi Utsho (input supply) shops, then financial stability and livelihoods of smallholder farmers will be improved.

Learning/Research Goal:

- To understand KU client experiences with financial products offered Bank Asia and Green Delta for agricultural activities
- To understand perceptions of KU franchisee owner in offering new financial products at their store

Research Questions:

- How do farmer clients plan (finances, inputs, labor etc.) for farming activities?
- What are farmer client experiences with financial services / providers?
- What kind of financing for agriculture do clients currently use?
- What types of agricultural technology/innovations do clients currently use?

### INTRODUCTION (PREAMBLE)

Thank you for taking the time to meet with us today and for letting me ask you a few questions. My name is \_\_\_\_\_ and I work with MEDA. We are partnering with CARE/Krishi Utsho on this project.

We've asked to meet with you today to learn more about your recent experience applying for the loan/insurance. There are no right or wrong answers, feel free to tell us your honest thoughts.

Everything you share today will be used by me and my colleagues to support CARE/KU in their project.

If you have no objections, can we proceed with the questions?

### INTERVIEW QUESTIONS: FARMER

1. Can you tell me about your household? What are your main farming activities?
2. What type of finance product did you apply for? loan only OR loan + insurance
3. Was this your first time applying for a loan? Y/N
4. Who did you talk to before applying? Why did you decide to apply?
5. Describe your experience in applying for the loan/insurance.
6. How did this compare with previous experiences of applying for a loan? Describe what you liked / disliked about the process, the terms/conditions etc.
7. When you received the loan – how did you feel?
8. What do you plan to use the loan for?
9. Do you have anything else you'd like to add to our conversation?

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## **INTERVIEW QUESTIONS: KU FRANCHISEE**

1. Can you tell me about your household?
2. I'd like to learn more about your shop. What led you to start this business?
3. Can you describe the types of products you sell?
4. Describe your experience with offering financing to your customers through this project. Has it impacted your business? If so, how?
5. What customer feedback have you heard about the loans/financing being offered at your shop?
6. Do you have anything else you'd like to add to our conversation?

## **INTERVIEW: BANK ASIA**

1. To start off, can you describe Bank Asia's role in this pilot project with CARE Bangladesh and Green Delta Insurance?
2. What was Bank Asia hoping to achieve by participating in this pilot?
3. Although repayment has not started yet, what has the pilot achieved or demonstrated so far?
4. Launching new products/programs don't always go as planned. Can you share a specific experience of how Bank Asia adapted and pivoted throughout this pilot project?
5. There are several reasons why serving rural/farmer customers is risky and costly for a bank. Through this program, what new knowledge or insight did your business learn about women and men farmers as potentially viable customers?
6. From this pilot experience, what feedback from women customers will be considered in new product development?
7. How does Bank Asia plan to continue learning about and serving rural customers?
8. From a systems perspective (financial sector, government, non-government sector) what critical areas need to be addressed to improve greater financial inclusion and productivity gains for women and men farmers in Bangladesh?
9. Is there anything else you'd like to share about your experience?

## APPENDIX 7 – LEARNING AGENDA STRATEGY

# MEDA INNOVATE Learning Agenda and Strategy

### 1. About INNOVATE

INNOVATE – Adoption of Agricultural Innovations through Non-Traditional Financial Services, is a three-year initiative (2017-2020) implemented by MEDA and funded by the International Development Research Centre (IDRC). With a portfolio of 10 research projects, MEDA is assessing the potential of non-traditional finance to enable large scale adoption of agricultural innovations among women and men smallholder farmers in South Asia, South America and East Africa.

### 2. Learning Agenda

About the Learning Agenda: The MEDA INNOVATE learning agenda highlights research assessing the potential of non-traditional finance to promote agricultural innovation adoption among smallholder farmers across East Africa, South America, and South Asia. INNOVATE’s learning resources are tailored to provide policymakers, implementers, and donors with practical insights and forward-looking solutions.

The publications, blog posts and other resources produced by MEDA’s partners cover the following learning themes: customer centricity, agricultural household norms, smallholder products/services, and policy and ecosystems change.

Research Goal: MEDA aims to understand and learn about different products, services, and models of non-traditional finance (NTF) and the role NTF may have in the adoption of agricultural innovations by women and men smallholder farmers in the three target regions: Eastern and Southern Africa; South Asia; and South America

#### Research Questions:

MEDA is specifically interested in the following components of adoption for women and men smallholders:

- **Awareness:** how do women and men learn about non-traditional finance and agricultural innovations available to them?
- **Access:** do women and men have equal access to non-traditional finance and agricultural innovations?
- **Affordability:** can women and men smallholders afford non-traditional financing options and agricultural innovations available to them?
- **Value:** do women and men smallholders perceive available financing and agricultural innovations as valuable and desirable?

#### Key Learning Themes and Learning Questions:

Theme 1: Customer centricity	How does customer centricity enable firms/organizations design and offer products and services that meet smallholder customer needs and demand?
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Theme 2: Smallholder household norms	How do smallholder households prioritize business decisions, purchases and investments for upcoming crop cycles alongside competing household needs?
Theme 3: Smallholder products and services	What are the key features and terms of financial products/services smallholder segments require to adopt new innovations or technologies? What are the key features of new innovations/technologies smallholders require (or prefer) to try and buy?
Theme 4: Policy and ecosystems change	What are the policy implications to enable (incentivize?) firms/organizations to better serve and align products (extension, finance and technologies) to meet smallholders needs?

## 2. Learning Agenda Strategy

MEDA INNOVATE’s learning agenda includes these key components and requires ongoing iteration of activities and engagement strategies relevant for different types of stakeholders:

- Establish a schedule for completing and disseminating learning outputs.
- Align learning output goals and key messages with stakeholder priorities, needs, and objectives.
- Leverage a multi-channel engagement approach which balances capturing attention with facilitating learning and sharing.
- Establish the metrics for tracking success.

The below diagram summarizes three strategic levers to implement a successful learning agenda and dissemination of key results and lessons from the research conducted by MEDA and its partners. They include:

1. INNOVATE learning outputs have clear positioning and wide brand recognition;
2. Project partners engage with and champion INNOVATE learning regionally; and
3. Donors, funders and policymakers support INNOVATE lessons and insights.

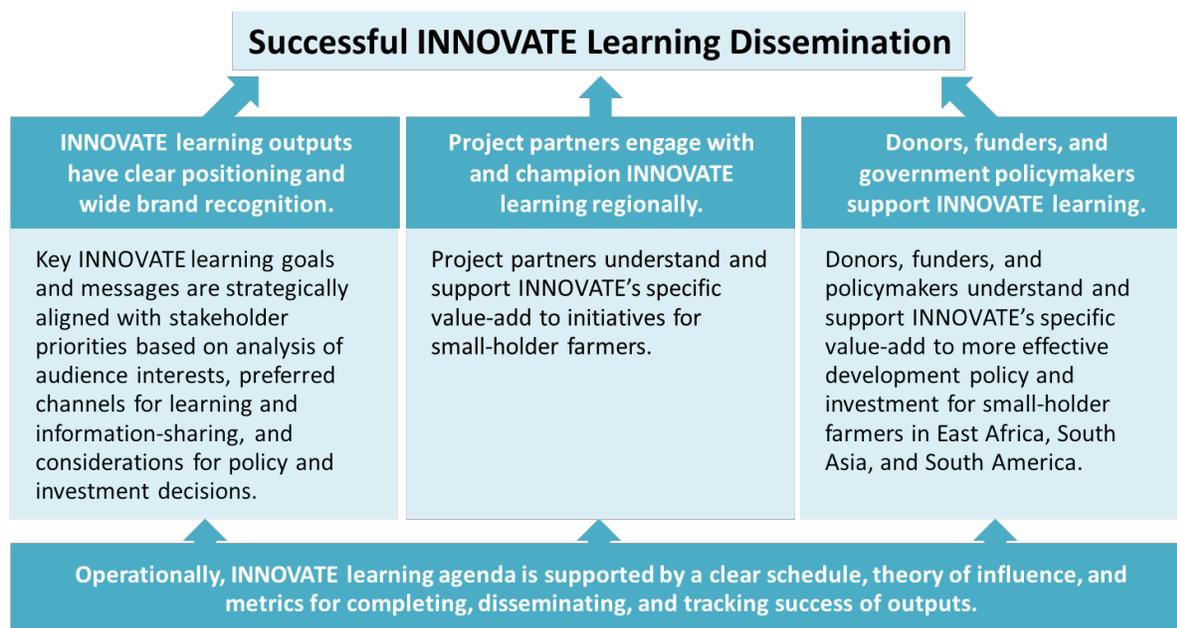


Figure 5 Three key strategic levers for learning dissemination

**Key activities to maximize INNOVATE’s learning agenda and dissemination of results:**

Objective 1 – Build a Strong Foundation for Dissemination	<ul style="list-style-type: none"> <li>• Position INNOVATE learning to complement related initiatives.</li> <li>• Select appropriate platforms and channels for dissemination.</li> <li>• Establish clear timelines and schedule for completing / disseminating outputs.</li> <li>• Understand and segment stakeholders (Stakeholder Mapping).</li> <li>• Articulate links between dissemination activities and desired results</li> <li>• Align learning goals and key messages with stakeholder priorities, needs, and objectives.</li> <li>• Establish metrics for tracking success.</li> </ul>
Objective 2 - Disseminate Learning Outputs	<ul style="list-style-type: none"> <li>• Identify and leverage dissemination partnerships across a broad community of practice on non-traditional finance for smallholder innovation adoption.</li> <li>• Employ a multi-channel engagement approach to complement reach with in-depth learning and sharing.</li> </ul>
Objective 3 – Measure Learning Outputs & Outcomes	<ul style="list-style-type: none"> <li>• Track and measure output and outcome-level dissemination</li> </ul>

**Relevant Related Initiatives**

- **There are a number of initiatives disseminating learning on INNOVATE’s learning themes.** For example: Savings at the Frontier (SatF), Mastercard Foundation’s Rural and Agricultural Finance (RAF) Learning Lab and Savings Learning Lab, the FSD Network, Scale2Save, BEAM Exchange and others.
- **To effectively position the value proposition of INNOVATE’s Learning Agenda as complementary to existing efforts,** MEDA complements the learning from other learning initiatives by focusing on the learning themes where INNOVATE is uncovering new learning (e.g., around the adaptive Good Agricultural Practices; and use of data to understand and know smallholder farmer customers etc.)

**Potential Dissemination Platforms**

- To maximize engagement with prioritized partners/stakeholders, we recommend that INNOVATE’s learning strategy **leverage the networks and readership of other dissemination platforms in addition to MEDA’s existing avenues for knowledge sharing**. E.g. Agrilinks, NextBillion, the SEEP Network, and Marketlinks.
- These platforms tap into global/regional communities of practitioners and policymakers to enhance customer centricity, understand farmer behaviour, and improve non-traditional finance and adaptive management in small-holder agriculture programming.
- In practice, partner platforms would cross-post and cross-promote INNOVATE publications, blogs, social media posts, webinars, and other events.
- The above-mentioned platforms/channels are targeted for cross-posting content based on:
  - Their **ability to reach partners and stakeholders** targeted by INNOVATE;
  - **Lead time** required to disseminate materials;
  - **Willingness to partner** with INNOVATE; and
  - **Alignment of mission**.

*Measuring Success:*

- Establishing clear metrics to track results is essential to accurately assessing the Learning Agenda’s progress and success.
- Measurement indicators confirm that desired results are aligned with the quantity and quality of learning and sharing required to deliver a successful Learning Agenda.
- Measurement targets enable comparisons with industry standards and benchmarks to ensure achievable results that are aligned with INNOVATE’s timeline and strategic objectives.
- Measurement results supports evidence-based assessment of success, informs decisions to course correct if needed, and provides valuable lessons for ongoing/future learning initiatives