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Design: Saskia Zwerver

May 2018
## Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CPDD</td>
<td>Credit Pilot Deep Dive</td>
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<td>FGD</td>
<td>Focus Group Discussions</td>
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<td>FHH</td>
<td>Female-headed households</td>
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<td>HFIAS</td>
<td>Household Food Insecurity Access Scale</td>
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<td>MAHFP</td>
<td>Months of Adequate Household Food Provisioning</td>
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<td>MFI</td>
<td>Micro-Finance Institution</td>
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<td>MHH</td>
<td>Male-headed households</td>
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<td>NPS</td>
<td>Net Promoter Score</td>
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<td>PPI</td>
<td>Progress out of Poverty Index</td>
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<tr>
<td>SACCO</td>
<td>Savings and Credit Cooperative</td>
</tr>
<tr>
<td>STARS</td>
<td>Strengthening African Rural Smallholders</td>
</tr>
<tr>
<td>TLU</td>
<td>Tropical Livestock Unit</td>
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<td>VSLA</td>
<td>Village Savings and Loans Association</td>
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## ICCO Cooperation and STARS

The Strengthening African Rural Smallholders (STARS) program is implemented by ICCO Cooperation and ICCO Terrafina Microfinance in partnership with Mastercard Foundation; targeting 210,000 rural farmers in Rwanda, Ethiopia, Burkina Faso and Senegal. STARS is addressing challenges that smallholder farmers face such as limited skills, lack of credit, minimal access to markets, and limited access to appropriate financial products.

In Rwanda, the aim of the STARS program is “food security and better income” for 44,000 (50% women) smallholders farmers and their households. The program uses a sustainable approach to empower smallholders to get better agricultural skills, and access to suitable financial services so they can create means to better take care for their families, be self-reliant and impact others in their communities.
Executive Summary

Many smallholder farmers struggle to access financial services, and lack opportunities to improve their agricultural activities. Therefore, STARS will facilitate access to financial markets and agricultural services in both structured and unstructured value chains, as well as for subsistence farmers. Recognizing that smallholder farmers comprise a diverse group with differences in attitudes and capacities to access and use credit products, this credit pilot deep dive (CPDD) investigates differences in the uptake and impact of newly developed agricultural credit products on smallholder farmers in Rwanda. The aim is to provide the STARS program, as well as the participating MFIs, a valuable opportunity to enhance their understanding of the client base: their needs, capacities, attitudes, strengths, weaknesses, barriers and catalysts.

More specifically, this CPDD study targeted two main credit products in Rwanda, namely banana loans in the Districts of Kamonyi and Muhanga in Southern Province and Irish potato loans in the Districts of Musanze and Burera in Northern Province. The study used a mixed quantitative and qualitative approach based on a household survey triangulated with focus group discussions (FGDs). The participating farmers have been categorized in three groups to facilitate the analysis of similarities and differences between the groups. The groups are 1) farmers that did not take out a loan, 2) farmers that accessed an informal or semi-formal loan (family, SACCO), and 3) farmers that accessed a formal loan with an MFI or bank. Slightly over half of the farmers in the study do not appear to suffer from high food insecurity year-round, but shortages are certainly present during the lean season. Nevertheless, 11 farmers (5.5%) are classified as severely food insecure. Around three quarters (73%) of all surveyed farmers have at some point taken out an interest-bearing loan, and 92% of them has had a positive experience with it, while 93% would definitely recommend the loan to others.

The findings of this study suggest that farmers are particularly attracted to credit packages when they experience respectful treatment in the process, loans have flexible repayment periods, loan size matches investment needs, and loans are associated with agro-inputs and expert support to learn new techniques. Farmers may be unwilling or reluctant to access credit due to risks related to losing collateral, counterfeit inputs, problems of group loans due to possible mistrust towards other members and unpredictable weather conditions. In addition, poorly educated farmers do not necessarily understand finance and do not therefore find loans relevant for them. Furthermore, youth and poorer farmers struggle to meet the requirements for collateral needed to secure loans.

The potential areas of improvement of MFI loans recognized by the farmers include enhanced communication between farmers and the MFI staff, shorter disbursement periods, possibility to use credit for a range of investments and not only for one single crop, more longer-term loans for fixed assets and a possibility to base the credit on overall cash flow instead of on production of the funded crop. Additionally, there is a need for more transparency, sharing of information among the lenders of already existing loans to prevent over-indebtedness, lower additional fees for the borrowers and alternatives to the group loans since marginalized farmers can have difficulties being accepted as part of the groups. It was also suggested that mobile money could be connected to savings, loans and repayments due to it being one of the most popular financial services.

Kigali, Rwanda

March 2018
Introduction

In June 2017 ICCO Cooperation conducted a small-scale study into the adoption of two newly developed agri-loans in Rwanda. These agri-loans were among a few new credit products being piloted by MFIs, which offered an opportunity for a parallel study to be attached to them. The purpose of this Credit Pilot Deep Dive (CPDD) study is to understand how differences in adoption and impact of new agricultural credit products correlate with differences in farmer characteristics. This would open up the possibility to adapt product features to match the needs of farmers. It is expected that the study can provide the STARS program, as well as the participating MFIs, a valuable opportunity to enhance their understanding of the client base: their needs, capacities, attitudes, strengths, weaknesses, barriers and catalysts.

STUDY DESCRIPTION

The CPDD study focused on two crops targeted by the STARS program (Irish potatoes and banana) in four locations; for banana, these are the Districts of Kamonyi and Muhanga in Southern Province, and for Irish potato these are the Districts of Musanze and Burera in Northern Province, see Figure 1. The STARS program focuses on improving financial

Figure 1. Data collection sites

1 MFI client lists (which consist of active borrowers, passive non-users, and people having a savings account only) were used to do the sampling. This implies that results are not generalizable to farmers in general.
services (and in time also non-financial services) for these smallholder farmers by supporting MFIs to develop appropriate agri-financial services for individuals and groups.

The research aims to investigate four key questions:
1. What are the demographics of the smallholder farmers in the credit pilot?
2. What is current state in farming in terms of productivity, use of products and services, access to markets, and access to finance?
3. What guides a farmer’s decision-making in taking out a loan and how do credit products differ in their advantages and disadvantages to farmers?
4. What are baseline values for impact indicators on wealth and food security used in the STARS program?

The CPDD study used a mixed quantitative and qualitative approach based on a household survey triangulated with focus group discussions (FGDS). A sample of 101 farmers growing Irish potatoes and 100 growing banana were purposely selected from MFI client lists as survey respondents, meaning that this is not a statistically representative randomized sample. Out of these 201 smallholder households, 12 are female-headed households (FHHs) and 50 are youth of 35 years and younger.

The two crops are not yet well organized into tight value chains and were selected according to their market values: “Irish potatoes” with high emerging market value and “banana” with a relatively low market value. The two MFIs included were Duterimbere (Musanze and Burera districts) and CLECAM Ejoheza (Kamonyi and Muhanga districts).

For the quantitative part of the study, a questionnaire was administered to 101 Irish potato farmers and 100 banana farmers. For the analysis related to questions 1, 2 and 4 we investigated differences with respect to crop as well as differences related to current access to finance. For the latter, we grouped the data according to farmers that did not take out a loan, farmers that accessed an informal or semi-formal loan (family, SACCO), and farmers that accessed a formal loan with an MFI or bank.

For the qualitative part of the study and in order to investigate question 3, a total of 8 FGDs were conducted. The categories of farmers that were included are farmers that obtained a loan, farmers that applied but were refused a loan, and farmers that never applied for a loan. Women were invited to participate in a separate FGD. The average number of participants in each FGD was 9.
01 Credit and farm characteristics
DEMOGRAPHICS – GENERAL

The average age of all farmers in this study is 43 years. There is some variation, for example farmers that accessed credit are on average slightly older (around 3 years) compared to farmers that never accessed credit. Banana farmers also tend to be somewhat older (around 5 years) compared to potato farmers. However, these differences are small so we will consider the farmers in this study to form a single demographic group for the purposes of this analysis.

Most of the farmers are married, only very few (1%) in a polygamous marriage. Household size varies between 0 and 13, with a mean of 6 (figure 2). Age and household size are positively related, as can be expected. The share of dependents in the household is 42% meaning that as much as 58% of the household members contribute to household income (figure 3).

The largest share (71%) of farmers has only reached primary school (either finished or unfinished) and 11% has reached high school (either finished or unfinished), while 7% has no schooling (figure 4). Regarding higher education, only 2% of farmers have reached college or university education (either finished or unfinished) and 9% vocational training (either finished or unfinished). About 7% have finished vocational training, but strikingly these are almost exclusively banana farmers in Southern Province.

When we look further into training on farming techniques, 14% of banana farmers and 20% of potato farmers have accessed such trainings. Only one farmer paid to receive training. With respect to training on financial skills, 10% of the banana farmers and 9% of the potato farmers have accessed such trainings. Again, only one farmer paid for this training. In Rwanda, almost all the trainings are provided for free either by government institutions or other development stakeholders (NGOs, CSOs).

2 Or described from a different angle: more young farmers are found among potato growers, with potatoes being a short rotation high value crop.

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Figure 2. Average household size

Figure 3. Average share dependents

Figure 4. Highest level of education in the household (n=201)
DEMOGRAPHICS - FEMALE-HEADED HOUSEHOLDS

Female-headed households (FHH) are slightly older than other households, with an average of 49 years (figure 5). They have a smaller household size averaging at 4.7 instead of 6. The share of dependents in the household is slightly smaller too at 37%. These women are generally widowed as only one instance of a young unmarried woman was recorded.

Similarly, to farmers in general, these women mostly (75%) have not gone beyond primary education. A comparatively large portion of FHHs received training on farming techniques (25%) or financial skills (17%), but this can be due to the small number of FHH included in this study leading to spurious findings.

DEMOGRAPHICS - YOUTH

The youth included in this study (35 years or younger) has an average age of 31 years. They are for the most part married (including a few cases of polygamous marriage) with only 6% that remained single. The household size is 4.7 on average and the share of dependents is 46%.

Youth are no different from other farmers from educational perspective since most (72%) only received some primary education. More youth have received trainings than older farmers; 28% of youth have received training on farming techniques and 16% on financial skills.

AGRICULTURAL PRODUCTION

The survey was used to investigate agricultural production by asking the farmers (n = 201) to compare the size of their harvest during the most recent season to the two previous seasons. Slightly more than half (56%) of all farmers indicated that harvests have declined over the last two years, while 39% indicated harvests have increased. For the rest of the farmers, harvests remained at the same level.

Furthermore, farmers were asked to select the main reasons for their increased (figure 6), or decreased (figure 7), harvest in the most recent season compared to previous seasons. Examining reasons cited for improved harvests,
banana farmers were most likely to attribute these improvements to better farming practices (19%), followed by climate (18%) and new seeds (18%). For potato farmers, climate was the main reason for improved harvests (31%), but 17% of potato farmers attributed the improvements to the use of fertilizers or chemicals and 13% to new seeds. Examining the main reasons for reduced harvest, 43% of both banana and potato producers reporting reduced harvests attributed this to the climate. Another important reason for reduced harvest among banana farmers was lack of seeds, fertilizers, chemicals or other inputs (8%), and among potato farmers, pests and diseases (8%).

Figure 6. Number of farmers having indicated improved harvest citing one main factor associated with the improvement during the current season compared to the two previous seasons based on the survey results.

Figure 7. Number of farmers having indicated reduced harvest citing one main factor associated with the reduction during the current season compared to the two previous seasons based on the survey results.
Overall, the survey results concerning the most common reasons for improved or reduced harvests highlight the effects of climate as particularly influential for potato farmers, and the harvest reducing effects of climate were also equally important for banana farmers. According to climate data of the area, the entire year of 2016 was severely drier for each month when comparing the total monthly rainfalls to average long-term monthly precipitation data. On the contrary, the months of February and March of 2017 were clearly wetter than the long-term average with 140 mm more rain for the month of March, which has most likely had a negative effect on the planting season. The other months of the year of 2017, except for October, were similar to 2016, drier than the long-term average.

Also, according to news reports, Rwanda experienced devastating effects due to the El Niño weather phenomenon in the year of 2016, such as droughts that caused crop losses and severe floods in May 2016 in Muhanga, one of the areas included in this study. In addition, the area of Kamonyi suffered from floods in September-October 2017. The Rwandan Ministry of Agriculture also identifies weather as the number one risk to crops and similarly, the two MFIs included in this study cited weather as the number one risk to farmers (personal communications). Given that most farmers rely on the sale of their crops to repay the loan, a reduction in yields as a result of drought or floods would significantly jeopardize their ability to make repayments. This was indeed mentioned by farmers in the FGDs. In addition to weather, FGD participants also mentioned to have been negatively influenced by accidents and illness, and noted that resilience after such shocks can be a problem.

According to the FGD data, one of the primary ways that farmers ensure stable cash flows is to diversify income sources by cultivating multiple crops in order to spread the risk. Participating farmers expressed high awareness that different types of crops have different levels of climate and pest resilience, different harvesting cycles, and different levels of price volatility. Among the study sample, most farmers that grow Irish potatoes in the North also grow maize, while banana growers in the South would also grow maize, beans and vegetables. It is noteworthy that vegetables are mostly cultivated by women.

The vast majority of farmers invest in multiple inputs. However, there are some differences in investments between the two crops. Table 1 shows the investment priorities, and what stands out is an overall higher number of farmers investing in their potato farm (potato is a high value crop), as well as an overall low investment in trainings. Labor is the most important input, and close to 60% of all farmers indicate that more than half of the farm work is done by hired hands. Based on the data from Figures 6 and 7, we can rank the demand for improved seed varieties next to the demand for fertilizers and chemicals.

<table>
<thead>
<tr>
<th>Input</th>
<th>Potato n= 101</th>
<th>Banana n= 100</th>
<th>Total n= 201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>96</td>
<td>82</td>
<td>178</td>
</tr>
<tr>
<td>Fertilizer/manure</td>
<td>91</td>
<td>69</td>
<td>160</td>
</tr>
<tr>
<td>Chemicals</td>
<td>95</td>
<td>11</td>
<td>106</td>
</tr>
<tr>
<td>Transport</td>
<td>54</td>
<td>36</td>
<td>90</td>
</tr>
<tr>
<td>Equipment</td>
<td>37</td>
<td>26</td>
<td>63</td>
</tr>
<tr>
<td>Trainings</td>
<td>9</td>
<td>4</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 1: Number of farmers using a specific input for farming

Agricultural loans are primarily used to purchase inputs. As noted, the ability to repay the loan is often dependent on the resulting crop yield. Poor yields as a result of low quality (and even counterfeit) inputs will influence a farmer’s ability to repay the loan. A number of farmers indicated to have difficulties in obtaining high quality seeds, fertilizers, and pesticides, both during critical periods in the agricultural calendar and in general. This was more reported by farmers growing Irish potatoes than banana.

Additionally, the utility of inputs very much depends upon their proper application, and it is not uncommon for farmers to apply less than the prescribed amount, or use one type of fertilizer for multiple types of crops which lowers the yield. These application issues were mostly reported by banana growers during the FGDs. Thus, availability, timeliness, quality and proper use of inputs are important factors that determine yield and the ability to repay loans.

A large number of farmers use part of their crop for home consumption (table 2). Aside from home consumption, potato farmers rely mostly on the cooperative and traders to sell their surplus yields. For banana farmers, traders and local spot markets are the most important channels for selling surplus products. Only very few farmers are linked to big buyers like processors, while a few farmers store potatoes or process bananas.

<table>
<thead>
<tr>
<th>Channel</th>
<th>Potato</th>
<th>Banana</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home consumption</td>
<td>79</td>
<td>77</td>
<td>156</td>
</tr>
<tr>
<td>Traders</td>
<td>41</td>
<td>58</td>
<td>99</td>
</tr>
<tr>
<td>Local spot markets</td>
<td>22</td>
<td>59</td>
<td>81</td>
</tr>
<tr>
<td>Cooperative</td>
<td>45</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>Process into banana beer</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Storing</td>
<td>12</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Processor</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 2: Number of farmers citing a specific outlet for their produce
ACCESS TO FINANCIAL SERVICES

Of all farmers included in this study (who were registered with either Duterimbere or CLECAM Ejoheza), around three quarters (73%) actually accessed some form of credit and in 61% of the cases that was through the MFI\(^3\) (table 3). Among FHHs, only around two thirds (67%) have accessed credit. This drops further to 62% for youth. It may be hypothesized that these groups may have a lower demand for credit, or reduced access to it. When scoring how often a particular source of credit is mentioned, the following list emerges:

<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFI</td>
<td>122</td>
</tr>
<tr>
<td>SACCO</td>
<td>36</td>
</tr>
<tr>
<td>Bank</td>
<td>13</td>
</tr>
<tr>
<td>Informal lender</td>
<td>4</td>
</tr>
</tbody>
</table>

*Table 3: Number of farmers accessing specific sources of credit*

It is important to keep in mind when examining the number of farmers accessing specific sources of credit that the sample was purposely selected from MFI client lists, and we therefore anticipate a bias for accessing loans through MFIs. Based on the survey results, only a little informal money lending occurs; only a few loans are mentioned.

Of the farmers that accessed credit, 92% reported having a ‘good’ or ‘very good’ experience. This increases to 94% when just looking at MFI loans. Of these MFI clients, 93% would definitely recommend the loan to others, further pointing to a high satisfaction. Phrased in the terminology of the Net Promotor Score (NPS), 93% is a promoter while 2% is a detractor. This gives a NPS for MFI loans of 91, which is a high score (it can range from -100 to +100). These numbers do not change much for FHH or youth, and loan satisfaction seems to be high overall.

\(^3\) It is important to again note that this is not a representative number for smallholder farmers in general but influenced by the purposive sampling approach.
Factors influencing credit product uptake
FINANCIAL ATTITUDES

Of the farmers that never accessed a loan, 18% do not save part of their income for the future, compared to only 8% of farmers that did access loans. This drop is comparable for youth but stronger in FHH: from 25% down to 0, although this may be related to the small sample size of this group. Similarly, 56% of farmers that never accessed a loan do not keep financial records, which drops to 47% of farmers that have accessed loans. Again, this drop is comparable for youth and stronger in FHH: from 75% to 38%. In addition, out of the farmers that never accessed loans 89% have not received financial training and 75% are not trained in agricultural skills. Thus, financial behavior and access to credit are apparently correlated, possibly in a mutually reinforcing way.

During the study, the sampled farmers expressed risk aversion. Only 5% reported that they would risk their investment if there was the chance of a high return. Most farmers (68%) would accept some risk, while 26% would not take any risk and accept only a low return on their investment. Risk appetite does not change much for youth but more FHH (92%) indicated they would accept some risk in return for a higher return on their investment.

More than half of all farmers sampled (52%) indicated that they would need their investment back in one harvest cycle, while 28% can wait up to 4 harvest cycles. As much as 17% of the sample could wait even longer than that. In particular, FHH tended to have a longer horizon, given that 33% indicated willingness to wait more than 4 harvest cycles.

According to the study sample, farmers in Rwanda try to spread their risk by diversifying their income through ‘side businesses’. This can involve growing and selling vegetables, or engaging in animal husbandry. A number of the farmers that were interviewed, indicated that they also operate other small-scale businesses such as selling charcoal, operating a taxi bicycle or working for other farmers (weeding, planting and harvesting).

According to our findings, women appear to be prudent money managers who are less prone to misuse loans for anything other than the intended purposes. They also indicated that they would experience a stronger sense of shame if they were unable to repay the loan. During FGDs, women explained that they need their husbands to co-sign the loan application and allow them to use household collateral for a credit application, which can be a problem if there are differences of opinion on the purpose of a loan.

Overall, youth show similar trends as farmers in general, but more youth were encountered in the sample of potato farmers than in banana farmers. Potato is a high value crop that takes less time to establish compared to a banana plantation. Youth come in with more modern perspectives and an ambitious mindset. This also means that they will consider leaving agriculture if more profitable alternatives arise.

CATALYSTS AND BARRIERS IN ADOPTING A CREDIT PRODUCT

During the FGDs, a range of perspectives emerged reflecting on the attractiveness of an MFI’s credit product, and farmers’ willingness to access them.

Factors that farmers find attractive in a credit product (catalysts)
Farmers are particularly attracted to credit packages when the following conditions are met:

- Farmers prefer to take loans with associated agro-inputs, for a range of reasons including:
  - Higher quality of inputs
  - Availability of inputs
  - Lower risk of misusing the loan by spending it on other essentials, leading to inability to repay. For some farmers, it would be very attractive to not receive the loan amount in cash for fear of misusing it for other purposes. They would rather receive the required farm inputs directly
  - Access to agricultural extension workers and/or agronomists supporting beneficiaries to implement new techniques, which supports the MFI lending
  - Flexible repayment periods. Some farmers prefer to make repayments more frequently (e.g. every two weeks) to prevent misspending, while others prefer to repay in lump sums in accordance with agricultural cycles. The repayment period must be appropriate for the farmers’ needs. For example, 6 months repayment period is suitable if the farmer owns the plot and if the loan is small. Flexible options are particularly palatable to wide audiences.
  - The loan size must match investment needs
  - Lower interest rates are considered attractive, nevertheless access and product features like disbursement time and repayments options are more likely to inform farmers’ decision-making
  - Treatment of the farmers and having a sense of respect and understanding, as well as physical proximity, translate into customer loyalty

Factors contributing to an inability or unwillingness to access credit (barriers)

FGD participants explained why some farmers are less willing than others to take credit:

- Group loans can be considered problematic. This includes issues around trust, member credit-worthiness, joint liability, risk of inability to secure future loans based on actions of others. Self-selection and informal due diligence are seen to mitigate risks to
some extent, effectively creating conditions of self-regulation. This can however exclude farmers who are not well-known or deemed to be responsible, reliable and hard-workers
• Past experiences of neighbors and friends informs decision-making. For example, some may be reluctant to take a loan because members of a neighboring cooperative lost property when they were unable to repay a loan
• The risk of losing collateral is two-fold: both the financial loss of the asset, but also the humiliation associated with the repossession and subsequent reputational damage for both the individual and their community. Both aspects are considered to be very grave risks and negative examples can continue to inform the decision-making of nearby communities for years. For group loans this is even more risky. Defaulters are also asked to leave the group, will be unable to borrow inputs in future, and lose market for their goods
• Poorly educated farmers do not understand finance (e.g. interest rates) leading to poor financial decision making, unwise investments, etc. Farmers perceive loans as not relevant to them, they don’t see how it can benefit them
• Farmers do not always understand the relative costs associated with different loans and/or interest rates, and therefore make decisions based on ‘soft’ factors such as friendliness, reputation, recommendations etc. even when costs are high. Many focus on the amount due at the end of each month, instead of the overall price of credit
• Women loan applicants are sometimes unable to secure permission from their husbands
• Mandatory savings of 20% of the required loan restricts the access of low income groups
• Prior non-payment of debts limits access to future loans, as well as a limited current savings base
• Limited access to markets reduces farmers’ opportunities to sell produce and increases risks associated with non-repayment of loans. Banana and potato value chains are loose (no contracts, high risk), there is limited market information and access (poor infrastructure, limited transport).
• Weather conditions are unpredictable, especially with climate change considerations, and there is reported to be a significant associated risk of losing crops and being unable to make repayments. There are limited insurance options due to the high risk of crop failure resulting from adverse weather conditions.
• Counterfeit inputs increase risk of crop failure, and therefore farmers are unwilling to take loans if they are unsure about the quality of inputs. Additional factors like late delivery of inputs and insufficient quantity of stock are external factors beyond farmers’ control which can inform their ability to repay loans.
• The use of mobile money is widespread and is one of the most popular financial services. This could be connected to savings, loans and repayments.

POTENTIAL AREAS FOR IMPROVEMENT OF MFI LOANS

Farmers highlighted several areas for potential improvements in the MFI’s service provision. These weaknesses do not result in unwillingness to access loans, but they do indicate potential areas for improvement. These include:
• Communication can be poor:
  - Farmers noted that loan amounts may be reduced without explanation (it was suggested during this study that this may be due to lack of liquidity)
  - Interest rates can increase without warning
  - MFI staff sometimes use ‘aggressive’ language
  - Lack of transparency in the process, e.g. expectation management around waiting times and hidden costs
  - Documents are not provided, and there is reliance on verbal explanations of procedures, fees and interest rates
  - Available documents are mostly written in English or French, not the local language Kinyarwand
  - Documentation distributed was found to be out of date, and key information was not clear
• Customers pay additional fees for:
  - Booklet that comes with opening an account
  - Property evaluation needed for each collateral
  - Notification fees for signing contracts. It was noted that the contract document sometimes contains errors, and the customer must pay notification fees twice to have it signed again at the notary
  - Disbursement periods are too lengthy, and time between applying for and receiving credit can be around 3 months.
• Distance to the branch office, associated with travel time and expenses
• Scarcity of longer-term loans for fixed assets reduces opportunities for investment, thereby inhibiting greater productivity and profitability for farmers. Risk aversion by farmers and insufficient liquidity on the side of MFIs will however present obstacles in developing loans for fixed assets
• Credit is often based on production of the funded crop and not on overall cash flow
• Credit is provided for one purpose (e.g. a particular crop) but farmers want to utilize funds for a range of investments (like fertilizer for the main crop as well as purchasing livestock) instead of a single purpose.
In fact, such diversification is a mitigation strategy for many farmers in order to spread the risk of crop failure due to climate change, as well as a strategy to increase the likelihood of being able to repay the loan (it is less likely that all activities will fail)
• Defaulters often run away from their village. Individuals will sell their own assets, go without food and remove their children from school to avoid defaulting on loans as reputational risk is so great
• Some borrowers take more loans to repay an existing loan, and lenders do not share information to identify these cases, leading to over-indebtedness
UPTAKE OF CREDIT BY MARGINALIZED FARMERS

Decision-making associated with loans is critically not based on relative assessment of financial costs. Less educated or experienced farmers rely on hearsay, reputation, reported experiences of others, and at most on the monthly repayment amounts (and not interest rate or total repayment):

- Less educated farmers place their trust in leaders whom they think understand better financial matters. Leaders are even relied upon to interpret details of previous loans and their impact on the group, as well as make decisions on future loans.
- There appears to be a fundamental difference between the first loan and subsequent loans. First timers are often overwhelmed by the experience, do not focus on the details and may accept conditions or repayment options that are not appropriate for them.
- Marginalized farmers also might be less able to access MFI loans. Elaborating on earlier observations:
  - Group self-selection can exclude farmers who are not deemed to be responsible, reliable or hard-workers, thus restricting membership of poorer households. Community groups have an incentive to include only the most financially stable members of the community, as failure to meet repayments has implications for all members of the group.
  - It was repeatedly stated during FGDs that there were more smallholder farmers in nearly every community who wanted to take credit but were not allowed to join a group, as other members considered them less creditworthy or dishonest.
  - As mentioned by MFI managers, MFIs are only willing to offer loans to groups for two reasons: (1) lending to a group allows for greater economies of scale to offset the high transaction costs of serving rural farmers; and (2) the joint liability provision that accompanies almost all group loans allows financial institutions to lower their own risk. It is noteworthy that there have been cases where certain group members did not repay their portion of the loan. Such events not only increased the risk that other members are not able to collectively repay the group loan, but also that the whole group may not qualify for another loan the following season.
  - Fees for property valuation (as collateral for loans) is reported at Rwf 35,000. Farmers providing more than one form of collateral, e.g. several lower value assets, must pay the fee for each of the assets assessed. This is likely to disproportionally affect poorer farmers and those with less consolidated assets.
  - It was noted that customers who are unable to complete forms personally must pay a local consultant to complete the forms on their behalf, costing between Rwf 2,000 and 5,000 each time. One solidarity group interviewed reported paying Rwf 15,000 in total simply to complete the loan appraisal form. More educated, literate and numerate farmers would not need to incur these expenses as they could complete the form independently, so these costs disproportionately affect more vulnerable farmers.
  - Farmers need to come up with acceptable business plans access loans, but this capacity is limited especially among less educated farmers.
  - A low current savings base as well as mandatory savings of 20% can restrict access of low income groups, for whom this can be a high threshold.
  - Distance to the branch office, associated with travel time and expense, can provide additional challenges for poorer farmers and women.
Comparing sources of credit
To compare the different sources for a loan, we have created an overview with loan characteristics:

### MFI

122 respondents (61%) indicated to have previous experience with this type of source of credit.

**Characteristics of the loan product**
- Weekly or monthly repayments or ‘bullet’ payments at the end
- On application, must submit: (i) Civil status certificate; (ii) ID of the applicant and spouse (if applicable); (iii) collateral (mainly notarized land title with valuation report); (iv) well-designed business plan, pledge 10 percent of the loan amount to savings (money saved on the applicant’s account that can only be withdrawn upon total repayment of the loan)

**Benefits mentioned**
- Where ‘bullet’ payments are available, farmers prefer MFI loans (even when MFI loans are more expensive than other options)
- Customers are loyal to MFIs who treat them well
- Interest rates are lower compared to other lenders (e.g. Duterimbere pilot notes 18%)

**Disadvantages mentioned**
- Short-term loans do not always match harvest cycles
- Unfavorable repayment options for seasonal farmers (weekly or monthly payments)
- Slow processing and provision of loans. Time between application and signing is acceptable (up to 1 month) but between signing and disbursement is long (up to 2 additional months)
- Interest rates can be increased without warning
- Associated fees can be high (signing contract, property valuation)

### INFORMAL MONEY LENDERS

4 respondents (2%) indicated to have previous experience with this type of source of credit.

**Characteristics of the loan product**
- In some cases, private lenders accept repayment in crops. While extremely expensive if one were to convert to a rate of interest, it is nevertheless very easy for smallholder farmers to understand this exchange
- Private lending however seems uncommon

**Benefits mentioned**
- Loans can be accessed rapidly
- No formal contract, easier to understand for non-literate farmers
- Less paperwork
- No security necessarily required

**Disadvantages mentioned**
- Very high costs, even referred to as “exorbitant prices and interests”

### SACCO

36 respondents (18%) indicated to have previous experience with this type of source of credit.

**Characteristics of the loan product**
- SACCO loans seem popular (25% of CPDD sample)
- Includes a local system known as “Ibimina” which operates as an informal loans and savings group

**Benefits mentioned**
- Closer proximity to farmers
- Accessible, perceived as non-threatening, lower risk

**Disadvantages mentioned**
- Slow processing and provision of loans
- Very small loan amounts, insufficient for large investments and innovations

### COMMERCIAL BANK

13 respondents (6%) indicated to have previous experience with this type of source of credit.

**Characteristics of the loan product**
- No data

**Benefits mentioned**
- Interest rate seems to be comparable. The Banque Populaire du Rwanda gives a loan on 18% to farmers, payable per month

**Disadvantages mentioned**
- Slow processing and provision of loans

**Distance to the rural farmers**
- Lack of respect for/interest in rural farmers living in poverty. Perception that they ‘don’t care’
Baseline for impact on income and food security
By providing farmers with access to finance, the STARS program aims to enable them to access the right inputs and improve their farming. As a result, they will improve their income and food security. To gauge such changes over time, we measured their starting point with respect to income and food security.

**WEALTH AND INCOME**

Income is hard to measure, but changes in income will be reflected by wealth, which we therefore focused on in this study. A household’s wealth was approached by determining the following characteristics: land size, an index for the household assets as well as an index for livestock\(^4\) owned by the household, and finally by establishing the poverty likelihood of the household\(^5\).

There are differences in wealth between the farmers of different crops (table 5). Both have about the same areas of land at their disposal, but banana farmers have more household assets, more animals and a lower likelihood of falling below the national poverty line (even though bananas are lower value crops). Potato farmers generally appear to be poorer.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Land size (ha)</th>
<th>Asset index</th>
<th>TLU (ha)</th>
<th>PPI 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
<td>1.1</td>
<td>9.6</td>
<td>1.5</td>
<td>14.2</td>
</tr>
<tr>
<td>Potato</td>
<td>1.0</td>
<td>4.5</td>
<td>0.6</td>
<td>27.5</td>
</tr>
</tbody>
</table>

Table 5: Wealth indicators per crop

When looking at the different farmer groupings in relation to loan access, things become more complicated (see Table 6). Our data show that farmers that accessed formal loans through MFIs or commercial banks are wealthier than farmers that accessed informal or semi-formal loans only. However, farmers that did not access a loan take up an intermediate position. This could be caused by this group being composed of a mixture of poorer farmers unable to access loans, as well as wealthier farmers that did not need a loan. However, this cannot be determined from our data. Sampling effects from the differently sized groups may also play a role.

<table>
<thead>
<tr>
<th>Farmer grouping</th>
<th>Number included</th>
<th>Land size (ha)</th>
<th>Asset index</th>
<th>TLU (ha)</th>
<th>PPI 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not access a loan</td>
<td>55</td>
<td>0.8</td>
<td>6.9</td>
<td>0.8</td>
<td>20.9</td>
</tr>
<tr>
<td>Informal and semi-formal loans</td>
<td>17</td>
<td>0.7</td>
<td>4.9</td>
<td>1.0</td>
<td>23.0</td>
</tr>
<tr>
<td>Formal loans</td>
<td>129</td>
<td>1.2</td>
<td>7.4</td>
<td>1.1</td>
<td>20.6</td>
</tr>
</tbody>
</table>

Table 6: Wealth per farmer grouping

Looking at FHHs, the survey data suggests that these are generally poorer than other households (table 7). It is interesting to see that the Poverty Probability Index does not reveal a difference between FHH and other households, while data on farm land, livestock and household’s assets shows clear and significant differences.

<table>
<thead>
<tr>
<th>FHH</th>
<th>Land size (ha)</th>
<th>Asset index</th>
<th>TLU (ha)</th>
<th>PPI 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1.1</td>
<td>7.3</td>
<td>1.0</td>
<td>20.9</td>
</tr>
<tr>
<td>Yes</td>
<td>0.5</td>
<td>2.8</td>
<td>0.6</td>
<td>20.3</td>
</tr>
</tbody>
</table>

Table 7: Wealth indicators for FHH and non-FHH

Youth appear to be slightly poorer than the average farmer household, but differences are not very pronounced (table 8). In both FHH and youth households, sampling effects from the differently sized groups may play a role.

<table>
<thead>
<tr>
<th>Youth</th>
<th>Land size (ha)</th>
<th>Asset index</th>
<th>TLU (ha)</th>
<th>PPI 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1.1</td>
<td>7.2</td>
<td>1.1</td>
<td>20.3</td>
</tr>
<tr>
<td>Yes</td>
<td>0.9</td>
<td>6.7</td>
<td>0.9</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Table 8: Wealth indicators for youth and non-youth

**FOOD SECURITY**

To understand better how food security changes over the course of the year, the tool Months of Adequate Household Food Provisioning (MAHFP)\(^6\) was employed. The tool consists of two simple question asking (1) whether there were months in the past 12 months in which the respond-

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\(^4\) The Tropical Livestock Unit (TLU) is used for an indication of the livestock resources. It is acquired by converting the body weight into the metabolic weight and can be used as an ‘exchange ratio’ among livestock species (Chilonda, P. & Otte, J. (2006). Indicators to monitor trends in livestock production at national, regional and international levels. Livestock Research for Rural Development, 18(8), 117).


ent did not have enough food to meet the family’s needs and (2) if that is the case, which were the months in the past 12 months during which the respondent did not have enough food to meet the family’s needs. Based on the results, around 70% of the farmers report that they do not always have sufficient food (differentiating into 65% for banana farmers and 75% for potato farmers). The months in which larger numbers of farmers experience shortages coincide with the bimodal rainfall pattern and concurrent lean seasons in Rwanda. The minor lean season centers on April and May, and the major lean season occurs during October, September and November. This pattern can be recognized in the below histogram based on MAHFP data collected in this study (figure 8):

When focusing on the 70% of the farmers that indicate to face shortages, we find that on average, people experience shortages for slightly over 3 months. The probability of farmers to not be able to afford sufficient food is close to 8% (PPI Food Line).

In addition to MAHFP, the tool Household Food Insecurity Access Scale (HFIAS) was used to collect more in-depth information on food insecurity. HFIAS is composed of a set of nine questions to assess whether households have experienced problems with accessing food during the last 30 days. This is evaluated with HFIAS household score that can range between 0 and 27. The average HFIAS household score for the whole sample is 6 which is not very severe.

The HFIAS household score also can be translated into four food security categories. When combining the data from all 201 farmers, the following classification of farmers in this study emerges:

<table>
<thead>
<tr>
<th>Food security category</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food secure</td>
<td>103</td>
<td>51.2%</td>
</tr>
<tr>
<td>Mildly food insecure</td>
<td>51</td>
<td>25.3%</td>
</tr>
<tr>
<td>Moderately food insecure</td>
<td>36</td>
<td>18.0%</td>
</tr>
<tr>
<td>Severely food insecure</td>
<td>11</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

Table 9: Numbers of farmers classified into food security categories

A total of 11 farmers (5.5%) are classified as severely food insecure. When looking at these farmers we find that they experience shortages during 4 months of the year and have an overall likelihood of 12% of not having enough money.
to buy sufficient food. On the other hand, 51% of all farmers are food secure at the time of the survey, even though they may still experience shortages at other times throughout the year (notably the major lean season). There are no striking differences for FHH or youth in terms of food security.

Results further indicate that food insecurity is stronger with farmers who have never accessed loans or only accessed informal loans, compared to farmers who accessed semi-formal or formal loans.

Strikingly, when husband and wife together answer survey questions on food security the reported food insecurity turns out higher than when only one of them answers questions. The data do not show a difference in actual poverty level though, so this effect remains unclear.

CONCLUSIONS

Key findings

- Farmers are particularly attracted to credit packages when they experience respectful treatment in the process, loans have flexible repayment periods, loan size matches investment needs, and loans are associated with agro-inputs and expert support to learn new techniques.
- Some farmers are unwilling or reluctant to access credit due to risks related to losing collateral, counterfeit inputs, problems related to group loans due to possible mistrust towards other members and unpredictable weather conditions related to climate change.
- Poorly educated farmers do not necessarily understand finance and do not therefore find loans relevant to them. Furthermore, particularly women struggle to access formal credit due to sometimes being unable to secure permission from their husbands.
- Slightly over half of the farmers in the study do not appear to suffer from high food insecurity year-round, but shortages are certainly present during the lean season. Nevertheless, 11 farmers (5.5%) are classified as severely food insecure.
- Around three quarters (73%) of all surveyed farmers have at some point taken out an interest-bearing loan, and 92% of them have had a positive experience with it and 93% would definitely recommend the loan to others.
- The potential areas of improvement of MFI loans recognized by the farmers include enhanced communication between farmers and the MFI staff, shorter disbursement periods, possibility to use credit for a range of investments and not for only one single crop, more longer-term loans for fixed assets and a possibility to base the credit on overall cash flow instead of on production of the funded crop. Additionally, there is a need for more transparency, sharing of information among the lenders of already existing loans to prevent over-indebtedness, lower additional fees for the borrowers and

alternatives to the group loans since marginalized farmers can have difficulties being accepted as part of the groups. It was also suggested that mobile money could be connected to savings, loans and repayments due to it being one of the most popular financial services.

NEXT STEPS

The data collected as part of this study will be further used to conduct a deeper level of analysis targeting especially catalysts and barriers for adapting a credit product, identification of differences in farmer types, sociological differences and other topics of interests that can help in understanding, for instance, farmers’ needs and capacities. Moreover, a follow-up study, using the same questionnaire as for this study, will be performed in 2019. Ideally the same target group will be revisited at that point. In addition, qualitative data will be collected using FGDs and participatory methods, such as Most Significant Change workshops.
What are your reflections as STARS microfinance manager on the CPDD report?

When looking at the entire report, do you support the findings or do you want to add some nuances, or correct the information? What is the relation with the pilot evaluation, do findings concur or conflict?

Overall the report seems to be a good reflection of the situation and shows in detail the challenges of smallholder farmers. The main issues observed are in line with the outcome of the pilot evaluation. The pilot evaluation showed a good appreciation of the new credit procedures, including the analysis tools such as the Agri-Credit Assessment Tool. The clients appreciated the tailored product and the fact that they now had a good ‘negotiation tool’ regarding agri-loans through proper, crop-specific agricultural analysis. The clients also appreciated fast disbursement procedures, larger loan sizes for individual loans and flexible collateral arrangements. The key constraint is related to non-financial services such as access to inputs and access to markets, which is especially significant for vegetable producers. The critical factors regarding loan procedures indicated high similarity with the pilot evaluations. These factors are, for instance, rapid processing of loans, flexible lending and repayment terms, flexible collateral requirements and access to larger loans with faced disbursement, especially to finance labor peak requirements. Some adaptations to the lending procedures have already been made through discussions with MFIs.

What are the key learnings that you find most relevant in the CPDD study?

Which elements in the report are most relevant in your opinion with respect to the MFI’s outreach (especially women and youth), scale-up plans, and potential impact with farmers?

• Similar to the results of the credit pilot review, also the CPDD confirmed the lack of access of farmers to good inputs and profitable markets. Loans accompanied with access to inputs (or in-kind loans) and access to sustainable market outlets were highly appreciated by farmers.
• The CPDD pointed out some relevant issues regarding female clients, such as women being more active in vegetable cultivation and perceived as better managers of money both in terms of savings and loan management. Yet it appears from the data on credit outreach that women are more likely to access smaller group based lending rather than larger individual loans. Thus, it is clear that active promotion strategies for women to access larger loans have to be developed.
• A critical reason for reduction of harvest appears to be changes in climate conditions resulting in sudden floods or droughts. Farmers apply diversification strategies for risk management and are avoiding to rely to a too large extent on only one crop. In the long run, this could provide some limitations to further commercialization. In addition, any systems that could provide weather alert messages could be relevant to explore.

For all MFIs access to refinancing is a very critical factor to improve outreach of MFIs.

What is the feedback on these key learnings from implementing partners?

Which do partners agree with and want to work on in STARS? What do they not agree with and would oppose to work on?

All findings of the pilot evaluation and the CPDD have been discussed with MFI partners one by one as part of the detailed discussions regarding their plans for 2018 and 2019. The partner MFIs would like to work on the suggested strategies including improved products for women and on creating links to input supply and markets.
Key requirements to accomplish the suggested implementation and outreach are:
1. Continuous good access to refinancing from different investors
2. A well-functioning MIS system preferably with the option to usage of a digitalized client assessment tool

How are you taking these learnings forward, what is your plan of activities?

How do we incorporate these findings in our intervention? How are we using them for stimulating adoption and impact, especially with women and youth?

1. Farmers generally expressed high need for access to good inputs and markets. This can be further developed in the STARS program for the rice and maize value chain, especially in collaboration with WFP. However, for other agricultural crops it is suggested to create a link with programs of other parties such as with FAO and Spark for input supply and marketing of potato; and creating a link with SNV’s new program on horticulture for creating a link for inputs and markets in horticulture.
2. Especially in Rwanda, the effects of climate change were mentioned by farmers and it will be very relevant to explore any link to weather services and weather alert messages that could prevent potential disasters.
3. Since the STARS program aims to integrate women in all parts of the program and participation of women in the higher loans segments still lacks behind, it is suggested to pilot test some specific agri-loan features targeting women such as:
   • Larger loans for small groups e.g. with max. 3-5 members. This will be especially provided to long term female clients (trusted customers). The loan size will exceed the normal group loan cycle and it is a path for women to move gradually into individual loans.
   • Individual loans for women with a peer guarantee construction, as alternative to collateral
   • Individual loans to women based on past performance, partly in collaboration with other types of flexible credit.
4. In order to increase outreach and larger funding, the STARS team will explore collaboration with e.g. KCB and Bank Populaire. The aim is to increase larger funding for cooperatives and to investigate the usage of possible new applications related to farmer finance, such as mobile wallets or farmer sales tracking.
5. Furthermore, the STARS team will start proactive negotiations for refinancing in 2018 and 2019. Currently ongoing contacts are established with Rabobank Foundation, Oikocredit, Lendahand, Grameen Credit Agricole and Ceniarth.
Partner
to enterprising
people.