

Farmers' Access and Utilization of Microcredit in Kianganda, Kenya



Written by Aveline Bies, Elena Allegri, Katrine Lindholm, Signe Jensen & Steve Tapley

Supervised by Christian Pilegaard Hansen & Lise Tjørring

Submitted on 05.04.2018

Final word count: 10.876

Table of Contents

TABLE OF AUTHORS.....	4
ABSTRACT	5
ACKNOWLEDGEMENTS.....	6
INTRODUCTION	7
MICROFINANCE IN KENYA	9
METHODOLOGY	10
Participant observation and casual conversations	10
Questionnaires & GPS mapping	10
Semi-structured interviews & PRA exercises	12
Focus group and PRA exercises	13
Transcription and coding	13
Collaboration with local translators	14
RESULTS & DISCUSSION	15
Microcredit sources and farmers	15
General features of farmers	15
Microfinance institutions in Othaya	18
Characteristics of loan-takers	20
Access to microcredit	22
Unregulated mechanisms	27
The ability to benefit	28
Usage requirements for microcredit	30
Usage requirements set out by the microfinance institutions	30
Implications on practices	31

Utilization of microcredit in agriculture	33
Seasonal investments	34
Long-term investments	34
Implications of loan size on investments and agricultural practices	36
CONCLUSION.....	39
REFERENCES.....	40
APPENDICES.....	43
Appendix I - Final synopsis	43
Appendix II - Overview of applied methods	70
Appendix III - Revised questionnaire	72
Appendix IV - Pseudonyms SSI and informal conversation participants	77
Appendix V - PRA results focus group discussion	78
Appendix VI - PRA result example SSI	80
Appendix VII - Coding method used for analysing data	81
Appendix VIII - Recommendation poster feedback meeting Othaya	82

Table of Authors

Chapter	Leading authors(s)	Contributing author(s)
Abstract	Signe	All
Acknowledgements	Steve	All
Introduction	Elena	All
Microfinance in Kenya	Elena	All
Methodology	Steve	All
Results & Discussion: Microcredit sources and farmers	Aveline	All
Results & Discussion: Access to microcredit	Katrine & Signe	All
Results & Discussion: Usage requirements for microcredit	Elena & Aveline	All
Results & Discussion: Utilization of microcredit in agriculture	Katrine & Signe	All
Conclusion	Aveline	All

Abstract

The quest to alleviate poverty and vulnerability to shocks from climate change for example, has highlighted the importance of access to microcredit. This, along with utilization of money by farmers in agricultural practices plays a vital role in this regard, as it can have direct impact on livelihoods. Through 12 days of fieldwork in Kianganda, Kenya, we have investigated the access and utilization of microcredit by farmers in the region with the aim to explore its implications on agricultural practices. Our methodology consisted of a range of methods, including questionnaires, interviews, focus groups and participatory rural appraisal, and triangulation of these to provide a reliable analysis. We have uncovered a variety of microfinance institutions to be present in the study area and as a result, access is not restricted by the prevalence of these, but more so the credit requirements set out by them and the ability to live up to these. Farmers use a range of mechanisms to obtain credit, such as pooling resources and trust-based relationships within the community. However, the common requirement of collateral tied to obtaining large loans from banks and SACCOs is heavily associated with the risk of losing collateral for the farmer, as incomes to repay loans are often heavily dependent on weather. We argue that the investment in long-term farm improvements is undermined by the risk of obtaining a loan, and as a result, farmers with off-farm incomes are more likely to obtain these loans than farmers without supplementary income sources.

Written by

Aveline Bies (cq374)

Signe Jensen (khp963)

Elena Allegri (mlx904)

Steve Tapley (fpb812)

Katrine Lindholm (czt910)

Acknowledgements

Our group and fellow classmates are undoubtedly filled with thanks and gratitude after completing this course, for the abundant amount of support, help, and hospitality provided by so many people throughout the duration of our field work and the SLUSE course. Beginning with our three host families, Joseph and Mary, Veronica and Regina, and Mama Njuguna, Ben and Nora. We were welcomed with open arms and treated like family during our whole stay. Secondly, our translators Daniel and Maureen, provided fantastic guidance and translations throughout all of our research methods and time in Othaya. We would like to thank our colleague from the University of Nairobi, Elmah O. Geoffrey, for being a contributing member of our group and for all of his efforts throughout our field work. Lastly, we would like to thank our supervisor from the University of Nairobi, Jane Mutheu Mutune, as well as our supervisors from the University of Copenhagen, Christian Pilegaard Hansen and Lise Tjørring, for the exceptional guidance, support and availability during this course. The field-based part of the course was a collaboration between the Wangari Maathai Institute for Peace and Environmental Studies at University of Nairobi, Roskilde University and University of Copenhagen. The inputs and efforts of lecturers from the Wangari Maathai Institute, University of Copenhagen and Roskilde University are highly appreciated. This field work and design of the project was collaboratively done by students from University of Nairobi, University of Copenhagen and Roskilde University. Villagers of Othaya hosted the students and freely contributed to the information in this report through several interviews and informal communications. Their contribution is acknowledged and much appreciated. We are grateful to the chief and the community leaders in Othaya for logistical support in the implementation of the training.

Introduction

Increasing global population, the consequent rising demand for food, changes in dietary consumption and the forthcoming climate risks have raised the urgency of investing in agricultural development to make food security more resilient and safe (World Bank, 2018). To accomplish these objectives and reduce poverty and hunger, agricultural credit and access to finance play a leading role. For this reason it is important to expand and facilitate the access of agricultural producers to credit, especially in developing countries (IFC, 2014). In this perspective, alleviating poverty, promoting empowerment and enabling the poor has been the main purpose of microfinance institutions (MFIs) across developing countries since the 1970's. Microfinance is a combination of loans, savings, investment opportunities and insurance, aimed at establishing inclusive financial systems to integrate specific services that fulfill the demands of the poor (Rahman, 2010). Target recipients generally use MFIs to raise income, build assets and to decrease their vulnerability towards stresses and shocks (Rahman, 2010). Facilitation of the access to credit is expected to increase the investments in the sector, beyond improving the living conditions of smallholder farmers.

Limited or no access to credit prevents small-scale farmers to invest in technology, farm activities and in effective tools to cope with risks, all aspects of primary importance to sustain global agricultural development and f global challenges of the next decades (Kohansal et al., 2008). Historically, some reasons have prevented access to agricultural finance: firstly, the lack of financial branches across territories that provide credit, insurance and savings, even though nowadays in Kenya and Tanzania this concern has been solved through initiatives such as mobile money-transferring services (M-Pesa). Other current and more pressing factors are natural and weather risks of agricultural activities and the consequent difficulties of paying back debts (World Bank, 2014).

In the African context, agriculture is the main economic production sector, providing an income to 70% of the population. The majority of them are smallholder farmers, who face the foremost challenges of production and to which access to financial services is mainly precluded (MFW4A, 2012). The occurrence of poverty as a main issue and the necessity to alleviate it have raised the concern and awareness of the pivotal role that microfinance can play in this regard. Indeed, it is widely recognized that African socio-economic improvement begin with the enhancement of microfinance services (UN, 2013).

In Kenya, the microfinance sector is one of the most prevalent in Sub-Saharan Africa, and includes a wide range of institutional forms and networks to reach rural areas (FSD Kenya, 2012). From previous studies it emerged that only 40% of the Kenyan population has access to credit, while the majority is excluded. This is mainly due to the long distances to credit providers and high credit costs (Mwangi et al., 2011). The gap is wider between highly educated persons and less well-off individuals, the latter to whom access is reduced and consequently the income level (Mwangi et al., 2011).

Based on the prevalence and complexity of different institutions, we find it relevant to explore how microcredit, the money-lending component of microfinance, can affect people's livelihoods in rural Kenya. Specifically, with agriculture dominating the area that we are looking at, our knowledge could help assess the ability of microfinance to live up to its preconceived potential, as mentioned above. Although significant research has been conducted exploring peoples access to microcredit, (Schörghofer, 2008; FSD Kenya, 2012; Vizcarra et al., 2017; Kaburi et al., 2013) as well as connections between rural agricultural finance and production, the impact of this is difficult to assess and compare across studies, due to the lack of consistent measures (Biscaye et al., 2015). In addition, the relationship between access and utilization of rural financial services and the adoption of sustainable land use practices is subject to a wide debate (Ruben & Clerex, 2003).

It is recognized that in Kenya, agriculture is the main sector that has the potential to alleviate poverty and promote growth (Kalunda, 2014). This generates the need to uncover how finance in agriculture and factors that influence the utilization of finance, influence sustainable and productive agriculture, especially in Nyeri, Kenya (Kalunda, 2014). Therefore, we see the need to further investigate access to microcredit in Nyeri sub-county Othaya, as well as what prevents and allows for it. Secondly, we will investigate how these aspects and the MFIs impact utilization of microcredit, and the extent to which sustainable land use practices are influenced in our study area. Based on this, the following research question and immediate research questions are formulated on the next page.

Research question

How does access to and utilization of formal and informal microcredit influence agricultural practices of farmers in Kianganda?

Immediate research questions

1. What are the current sources and user characteristics of microcredit among farmers in Kianganda?
2. In the context of microcredit and smallholder agriculture, how is access determined?
3. What are usage requirements for smallholders receiving credit, set out by the microfinance institutions and what effect does this have on farmers' agricultural practices?
4. How is the utilization of microcredit manifested in agricultural land use practices?

Proceeding the findings of the immediate research questions, they will be discussed and eventually drawn together in a reflection aimed at bridging them with the concept of sustainable land use trends in the study area. We hope that the insights obtained from this report will prove useful for MFIs and policy makers, when wanting to improve accessibility to microcredit by farmers and to stimulate economic growth in the research area. It can also provide insights for those working in the agricultural development field on how it can affect agriculture in the short and long run.

Microfinance in Kenya

According to the Kenyan Microfinance Act of 2006, microfinance services are provided by three types of sources: formal, semi-formal, and informal institutions. In Kenya, each of the three categories has multiple players. Formal institutions involve banks and Deposit Taking Microfinances, which are both regulated and supervised by the Central Bank of Kenya. Savings and Credit Cooperative Organizations (SACCOs), which take deposits are regulated and supervised by the SASRA (SACCO Societies Regulatory Authority) and are also part of this category. Semi-formal institutions include non-deposit-taking SACCOs, which are supervised by the Ministry of Co-operative Development and Marketing. Institutions with no legal form of registration or supervision such as moneylenders and financial services associations are categorized as informal institutions. (FSD Kenya, 2012).

Informal microfinance services have existed in developing countries since the 17th century, while semi-formal and formal forms of MFIs are relatively recent, beginning in the early 1970's. Between the 1980's and 2000's, Kenya's MFIs consisted of NGO's and the co-financing of multinational agencies, such as Kenya

Women Finance Trust (KWFT). Their main focus was to alleviate poverty, create jobs, promote entrepreneurial activity, as well as pushing for a general increase in incomes of the poor and improving availability and access to resources. Previously, the absence of proper regulations made possible to set up microfinance services without barriers and rules (i.e. define the capital to invest, the timespan, the repayment) (FSD Kenya, 2012).

Methodology

The methods used during our fieldwork are questionnaires, GPS mapping, semi-structured-interviews, focus group discussions, participant observation and several PRA methods. All of these are outlined and discussed below.

We did fieldwork in Kianganda, Kenya from the 1st until the 13th of March, 2018. Kianganda is situated near the town Othaya, which is the administrative centre of Nyeri South sub-county. Nyeri South is one of four sub-counties within Nyeri. The GDP per capita of Nyeri county in 2015 was \$1,503 compared to a national average of \$1,350 (World Bank, 2015; World Bank Data, 2018). The majority of the people are Kikuyus, hence Gikuyu is the main spoken language, followed by the national language, Swahili. This prompted the need for translators during our fieldwork.

Participant observation and casual conversations

Living with host families in Kianganda for 12 days made it easy for us to carry out participant observation without much effort in scheduling. We have done participant observation during farming practices, such as milking of cows and picking tea in the fields, and other everyday activities. Furthermore, we have had numerous informal conversations with our host families, informants inviting us in for a cup of tea, and with our guides (who are also involved in farming). With these methods we have gained knowledge on details about people's everyday lives that we triangulated with data from other methods. We discussed topics that were outside the preliminary focus of our research, which helped us to uncover aspects of our topic, the importance of which was unknown to us prior to entering the field.

Questionnaires & GPS mapping

Our sample population did not have any specific criteria aside from needing to be part of a household which participated in some level of farming. Although the questionnaire had been formulated beforehand, the questions underwent 3 pilot tests which yielded a significant amount of changes. These included

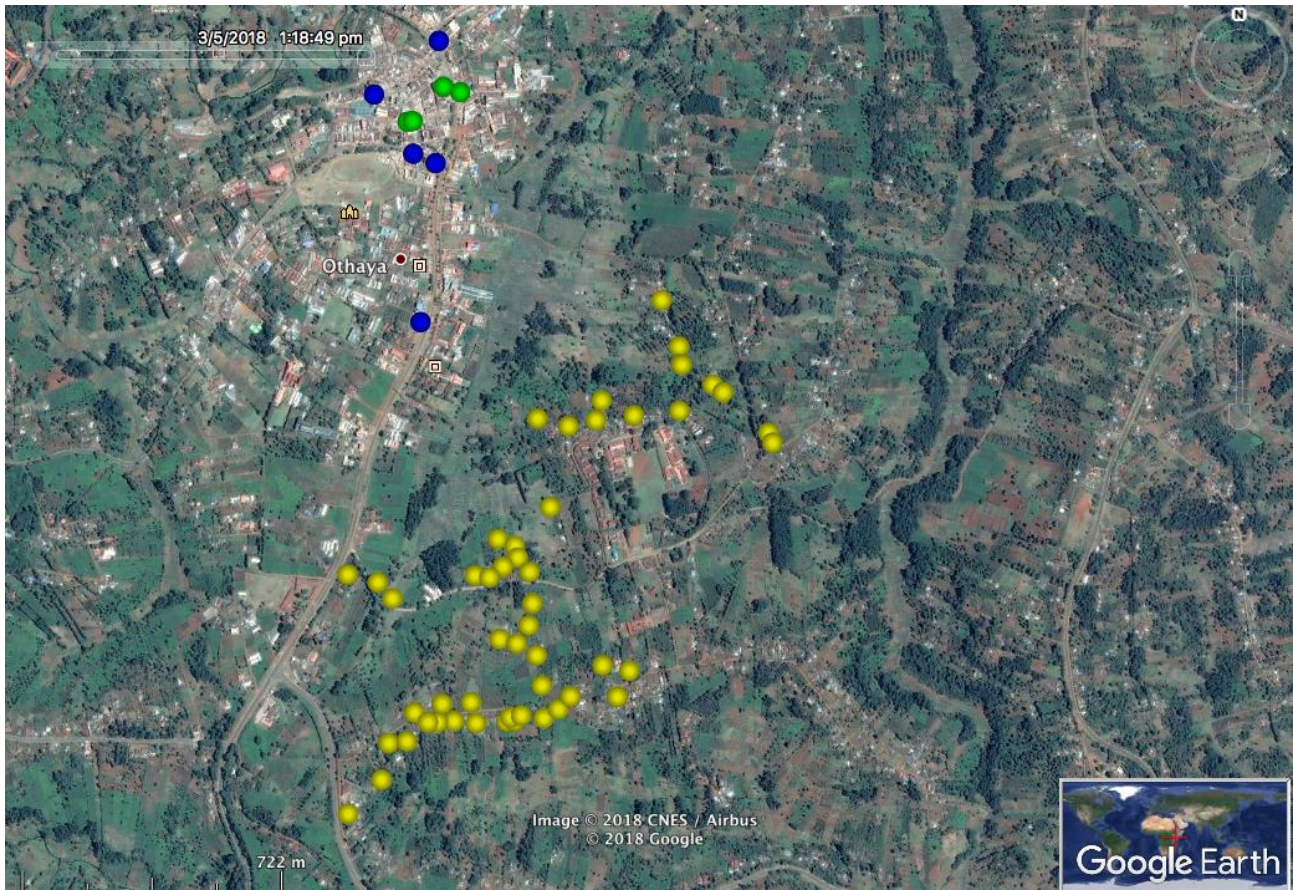


Figure 1. Representation of MFIs and questionnaire respondents. Blue dots represent banks, green dots represent SACCOs and the yellow dots represent questionnaire respondents. This is based on GPS data and a transect walk with Frederick, the sub-chief in Othaya.

wording changes, adjusted response options and rearranged question order. After the pilot test and adjustments (Appendix III), we set out in 2 groups with one translator per group and conducted the questionnaire on 50 farmers, 18 of which were men and 32 were women. This took place over two days, by going door to door/farm to farm and asking the farmers available. That is, we did convenience sampling, and by using GPS, we made sure that we had an even spatial distribution of farmers in Kianganda, as shown in Figure 1. Furthermore, we used the GPS method to get an overview of the MFIs present in Othaya.

Despite pilot-testing and adjusting our questionnaire, we encountered an issue involving one of the important questions for our research; “Have you ever taken a loan?”. We noticed that many farmers were responding to this question with a quick “no”. We realized that this was not an effective way to ask the question in order to capture all the forms of borrowing money/credit that we were interested in. To achieve this, we needed to ask the question more loosely, mentioning the word “borrowing” instead of “taking a loan”, as well as asking if they were members of any self-help groups (SHGs) or SACCOs. By doing this and

asking the question twice with slightly different wording then showed a higher response rate of people who had taken some form of loan. This may have produced some bias for that question, but in order to navigate different understandings of the question, this was necessary.

Although there were some shortcomings of our questionnaire, it had advantages. These include its ability to collect quantifiable farm/household characteristics of people in the area, as well as for people who borrow money. This, coupled with the semi-structured interviews (SSIs), allowed us to pinpoint these characteristics and discussed them in our results. Another advantage was that it opened the possibility to return for an interview.

Semi-structured interviews & PRA exercises

SSIs were also conducted with a predetermined set of guidelines. Due to the given timeframe we did not do any pilot test interviews. This was also because of the flexible nature of interviews where we were able to make changes between respondents. The interviews were conducted on 13 farmers, 9 of which were women and 4 were men. We also conducted 5 interviews with institution representatives (Appendix II). We did two transect walks with farmers through their farm, as well as with the sub-chief, Frederick, through the town of Othaya, where we were able to pinpoint all of the MFIs using the GPS.

As expected, the interviews allowed us to ask follow up questions that were more thorough compared to the questionnaire, which allowed us to collect insightful responses. With the interview inevitably requiring more time, we noticed the respondents would sometimes appear to be restless by the end of the interview which may have encouraged us to rush or exclude questions and therefore affecting the responses. Interviews allowed us to invite respondents to participate in our final method, focus groups. There were two PRA exercises (Appendix VI for an example) that we had arranged beforehand to be included in the interview process:

- Farm/Asset Mapping: respondent draws a rough sketch of the farm/farm assets/income sources.
- Input/Output Exercise: listing of farm inputs/associated annual cost and farm output/associated annual income generated.

We used this PRA method to produce supplementary data in an interactive/visual way, complementing the responses to our questions. We also hoped that this process would stimulate a discussion on their farms financial situation but we often felt that the exercise was time consuming and didn't lead to that.

Focus group and PRA exercises

Our first focus group consisted of farmers used in the SSIs, as well as other farmers from the study area. Aside from the attendees arriving to the meeting an hour and a half later than the planned time, the discussions were productive. We divided the attendees into two groups for two PRA exercises (Appendix V):

- Pros & Cons - groups of participants list pros and cons of institution names given to them (Banks, SACCOs, Tea Cooperative (KTDA), Coffee Cooperative)
- Spending Task - groups of participants theoretically spent three different loan amounts.

The second focus group meeting at the SHG was intended to start with an observational period during the member's weekly meeting where the KU students would observe usual group interactions. This however turned into an interview, because the attendees wanted us to ask them questions. After the meeting, we asked the attendees what they had spent money loaned from the group on their farms. Then we carried out a PRA exercise based on their answers:

- Preference Matrix - group ranking agricultural investments against one-another and determining which is the most valued.

Due to the amount of people that ended up being present (~ 20), there was a lack of participation from some of the members during the exercise. We had hoped to encourage all members present to make comments and have discussions but the amount of people was almost too big for a focus group. If we had been aware of this amount of participants beforehand, we would have prepared to divide the whole group into two. This being said, the exercise was still helpful, such that it produced results that were similar to other methods, allowing for triangulation when it came time to analyse the data.

Transcription and coding

After completing the transcriptions from our SSIs, we had a substantial amount of information. This is why we decided to analyse the data with coding. This method involved going through each research question and identifying a common theme or general response, that had been given frequently by our respondents (Appendix VII for an example). This theme was then given a name (and a color) that embodied the description of that theme. We then went through all interview transcriptions while highlighting text that should be categorized under each of the corresponding themes. Lastly, we compiled all of the highlighted text from each code and summarized conclusions for our research questions. This system was very helpful for extracting data and making conclusions from our interviews.

Collaboration with local translators

In the field, we worked together with two local translators from Kianganda, and throughout our field research we have reflected on how this has affected our data. The translators would sometimes answer our questions themselves instead of asking the respondent and giving us the farmers answer. Thus, sometimes they were more informants than translators. A second issue we encountered was a competition between our two translators seeing who would conduct the most questionnaires in a day. This resulted in a few rushed meetings and potentially misunderstood questions or responses. Another obstacle that our group faced was the initial interaction with respondents. There may have been some confusion or lack of coordination with our translators regarding the introductory conversation with the farmers, and this may have led to concealed responses. After discussing as a group whether they were fully aware of their role as translators, more instruction on what their job was, might have been necessary.

Lastly, one of our guides is the child of the sub-chief in Othaya. This guide had shared with us that the respondents were fully aware of his family relations and the position of his father. This might have affected our data, if local power-relations or conflict affected the way farmers were responding to us, given our translators presence.

Throughout this report, we use pseudonyms for the farmers participating in our research (Appendix IV).

Results & Discussion

This chapter presents and analyses our results obtained during the research and will be structured in such a way, that they answer the four sub-questions. Figure 2 presents the sub-sections in this chapter. Our results will be discussed throughout, where appropriate.

Microcredit sources and farmers

What are the current sources and user characteristics of microcredit among farmers in Kianganda?

To begin answering this question, we will first provide an overview of the study area, including common farmer features and present MFIs. This analysis is important since it assists us in grasping how access and utilization of MFIs in Kianganda are determined and thus is being built upon in the next chapters.



Figure 2. Flow chart illustrating the sub-sections in the results & discussion section. Current section is highlighted in teal.

General features of farmers

Respondents in our research are farmers residing in Kianganda, as geographically visualized in Figure 1. Farmers included in our research represents different age groups, ranging from around 20 to around 80 years old, with 46% of the questionnaire participants between 40 and 60 years old.

Generally, most of the farmers in our dataset base their income on cash crops (Figure 3), mainly tea and coffee. This income is sometimes supported by income derived from off-farm labor, such as being a taxi driver, carpenter, tea picker or clothes vendor.

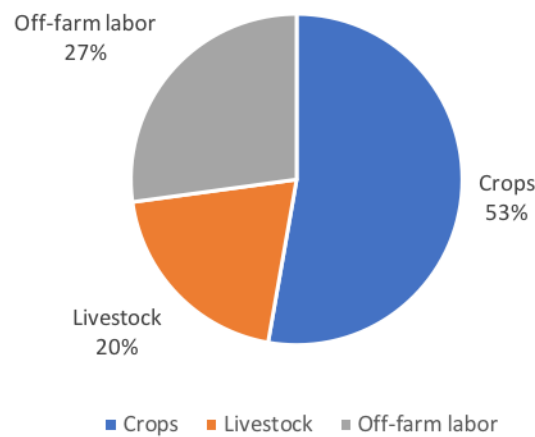


Figure 3. *Income distribution showing income derived from off-farm labor, crops and livestock as a share of the total yearly income of farmers, based on questionnaire data.*

Based on data from questionnaires and SSIs, most farms include subsistence crops such as maize, beans, potatoes and cabbages on their farm besides growing coffee and/or tea. These subsistence crops are sometimes intercropped and rarely irrigated. The three most common trees grown are Eucalyptus (48%), Grevillea (28%) and Macadamia (9%). In addition to income from crops and off-farm labor, income from livestock products play a significant role in the income distribution. According to questionnaire data, 66% of farmers have cows, 62% have chicken and 42% have goats. Income generated from cows provides around 80% of the total livestock income. Chicken and cows are mainly kept to provide a direct source of income by selling eggs and milk, whereas goats provide cash when sold for meat, as explained to us during the interviews. We observed, that most of the livestock is kept in a zero-grazing system and many farmers grow napier grass for consumption by their own livestock.

Farmers included in the questionnaires have farms with different sizes, ranging from $\frac{1}{8}$ to 6 acres, with an average of 1,6 acres (equivalent to 0,65 hectare). In terms of acreage, subsistence crops hold the largest share of farmers' plot size, followed by tea as shown below in Figure 4. Subsistence crops include primarily maize, beans, and cabbages. In the graph, maize is included under the subsistence crops although maize was occasionally referred to as being a cash crop as well.

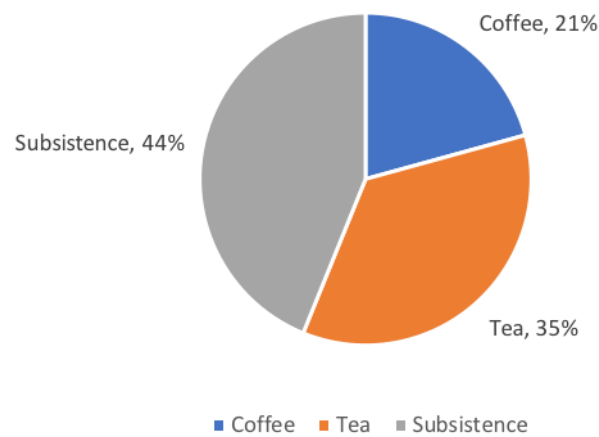


Figure 4. *Most important crops in terms of acreage coverage, based on questionnaire data.*

Many, but not all of the households have a water tank and this water is mainly used for household needs. Other farming practices in terms of input usage are depicted in Figure 5. Worth noting is the fact that all farmers in the questionnaire stated that they use manure as a farm input, and more than 80% use fertilizer.

The farmer characteristics described above serve as the general picture of the people whose statements are used as the basis for further analysis on utilization and access of microcredit in Kianganda.

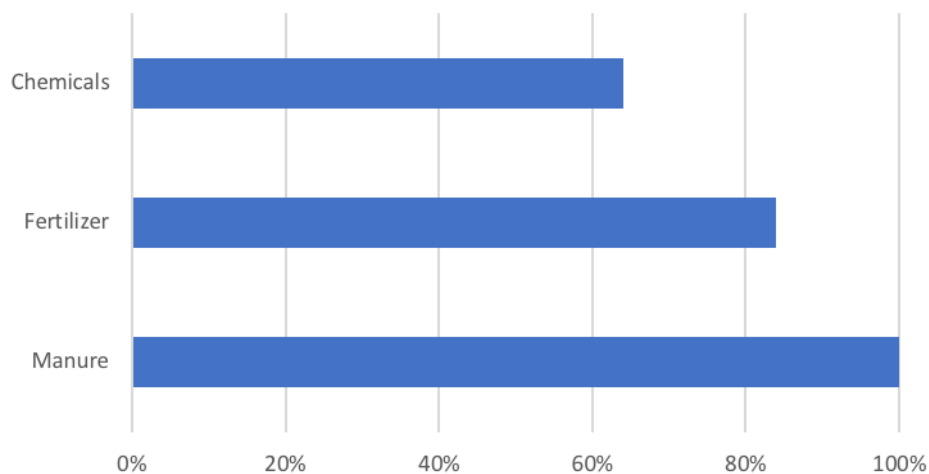


Figure 5. *Input usage by farmers, where the X-axis represents the number of farmers in percentages of the total number of farmers who took part in the questionnaire.*

Microfinance institutions in Othaya

There are several institutions in Othaya region that provide microcredit services. For our research, we have chosen to focus on the four types found most relevant, based on the responses obtained in our questionnaires and interviews. These are banks, SACCOs, cooperatives (tea and coffee) and SHGs (see Figure 6 for a geographic distribution of banks and SACCOs in Othaya). The different groups represent different forms of organization, formalization and accessibility. As stated previously, the Kenyan Microfinance Act 2006 differentiates between formal, semi-formal and informal MFIs. All banks and SACCO's in Othaya that are geographically represented in Figure 6, are formal. The co-operatives and registered SHGs, we argue, are semi-formal, because they are non-deposit taking, and the unregistered SHGs are informal. Banks provide loans of relatively large amounts to people in the study area and some, like Family Bank and Equity Bank, have specific branches for the agricultural sector. SACCOs provide microcredit only to its members who have a saving history with them up to a maximum of three times the equivalent of the current savings. In addition, the interest rate is lower: 14% for banks and 12% for SACCO's, and terms of repayment are more flexible at SACCOs. The tea and coffee cooperatives provide credit to only members as well. The size of the loan is based on the most recent production and the interest rate is comparable to that of SACCOs. The data in this paragraph has been compiled using all of our methods.

SHGs are heavily present in the Othaya region (SSI-Frederick), however we were not able to obtain data on the exact amount of groups present, due to the nature of the groups often being informal. They vary in size, and the degree of how organized and formalized they are. Based on our compiled SSI data, a common system that SHGs use is a merry-go-round. This is where everyone in the SHG puts in the same amount of money on a regular basis (around 300 Ksh per month) and in some groups this amount is sometimes re-evaluated, to meet the changing financial situations of the farmers (SSI-Margaret). The pool of money will then be given to a different member each time (usually every month).

It can be argued that money obtained via a merry-go-round is not considered a loan but rather a pay-out of one's savings. In spite of this, throughout this report, we have chosen to analyse all forms of payouts from SHGs. This, because it provides people with more capital at once, than they would have had themselves at that particular moment in time, and allows for investment in assets which might have been more difficult to do otherwise. We find it interesting to investigate how these payouts are utilized, since it could have an impact on land use practices. In addition, many SHGs also provide loans to their members from a common pool of savings, for instance the Gitari SHG who offer loans of up to 10.000 KSh (Focus Group-Gitari SHG).



Figure 6. MFIs in Othaya: Blue dots represent banks and green dots represent SACCOs.

Data is based on a transect walk with Frederick, the sub-chief in Othaya.

Based on 50 questionnaires, 44% of the participants took out loans at either a bank, SACCO, SHG or cooperative. However, this result might be skewed since people might not have mentioned that they took a loan. For example, a respondent pointed out to be part of a SHG and to use its services during a SSI, which followed up on a questionnaire, in which the respondent had answered not to take a loan from a SHG. Thus, our data on how many took loan via SHG could be smaller than reality. Also, we found out that some respondents said they weren't a part of a SHG, only a women's group, a men's group or a merry-go-round, therefore when we asked for a SHG, they might have answered no.

People use different kinds of MFIs based on their ability to obtain and to repay the loan. Loan conditions, such as low interest rate and flexible repayment period, were mentioned by farmers as being characteristics of institutions when obtaining a loan. These play a role for farmers when deciding where to apply for a loan. A bank has a higher interest rate and stricter repayment periods, but is able to provide a larger loan, which

was seen by farmers as a positive characteristic and is taken into consideration when applying for a loan (PRA with focus group). Additionally, in the SHG and “in the SACCO you have a sense of belonging” (SSI-Geoffrey) and trust. This is experienced by farmers as a positive feature which can make it more likely to prefer and use these institutions over other institutions, such as banks, where farmers might perceive them as less trustworthy.

Characteristics of loan-takers

When looking at Figure 7 and comparing the size of loans obtained at SACCOs, cooperatives, banks and SHGs, we can see that loans obtained at the SHGs and cooperatives are usually of the smallest size. Our data shows one SHG loan being significantly bigger than the other SHG loans. This is because it was not obtained via the merry-go-round, but as an actual loan which was spent on the respondents’ wife’s cancer treatment. Given that this response represents 25% of our SHG data points, one might speculate whether or not the “big loan” is an outlier. However, when triangulating with the data from interviews and PRA methods, we find that loans obtained from SHGs are usually of a much smaller size. The unusually big loan makes the SHG “average loan in KSh” value in Table 1 higher than what we find, when triangulating with the data from interviews and PRA methods.

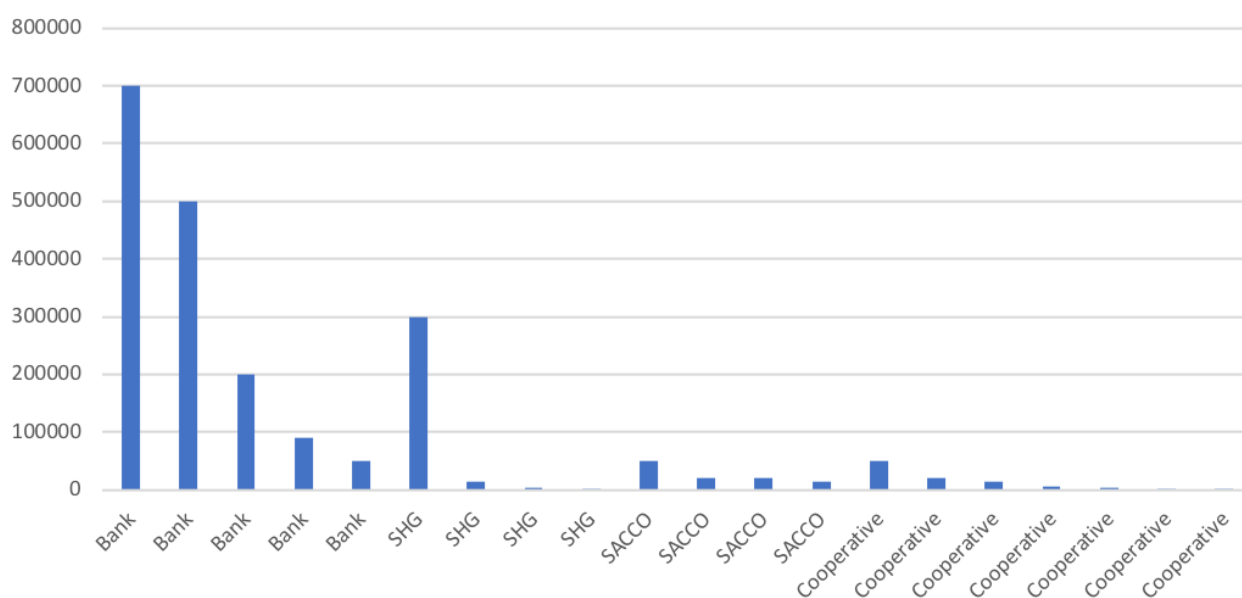


Figure 7. The Y-axis represents the size of the loans in KSh. The X-axis represents at which institution the most recent loan was obtained. Data is based on questionnaire data.”

	Average plot size (acres)	Average loan (KSh)	Average income (KSh)
Cooperative (non-monetary)	0,63	3.337	55.800
Cooperative (monetary)	2,83	28.333	633.167
Cooperative (monetary and non-monetary)	1,59	14.300	242.411
SACCOs	1,63	26.250	186.500
Banks	2,10	308.000	310.600
SHGs	0,38	80.000	128.750

Table 1. Average plot size, loan and income of people who took their latest loan at either the cooperatives, SACCOs, banks or SHGs.

These numbers are based on questionnaire data and rely on estimations of participants. The non-monetary loan, i.e. fertilizer, is converted into KSh by multiplying the amount of fertilizer bags with the price of these bags.

As seen in Table 1, loans obtained at SACCOs are a bit bigger and loans obtained at banks are the largest. Loans at banks are taken by those who have a relatively high income on average and have a relatively larger plot size. Loans taken at SHGs are taken by those who have a relatively low income on average and have a relatively small plot size. People who use fertilizer bag loans at the cooperative are different from those who take out a monetary loan in the sense that the former has an average income eleven times lower and an average farm size of 2 acres smaller than the latter. The average income from people taking monetary loans from cooperatives is very high due to an outlier. If we exclude this, the average income is instead 124.250 KSh. SACCOs are being used by people who have a slightly higher average income and slightly higher average land size compared to the averages of the whole data set. The average loan size is smaller than that for banks but comparable to that of cooperatives.

Based on the data in Table 1, the size of the land owned by farmers can to some extent be tied to the household income. This in turn seems to follow the size of loan obtained from the MFIs. We therefore suggest a possible connection between the size of land owned by farmers, the household income and the size of loan obtained from MFIs. We do stress however, that this suggestion is not derived from a mathematical analysis, and in order to fully uncover the relationship between these variables, further analysis is needed.

Banks	SACCOs	Co-operatives	Self-help groups
<ul style="list-style-type: none"> - KCB - KWFT - Equity Bank - Cooperative Bank - Family Bank 	<ul style="list-style-type: none"> - Taifa SACCO - Biashara SACCO - Wananchi SACCO - NewFortis SACCO 	<ul style="list-style-type: none"> - Tea (KTDA) - Coffee 	<ul style="list-style-type: none"> - Registered - Unregistered

Table 2. MFIs found to be present in Othaya based on data from questionnaires, transect walk with Frederick, the sub- chief in Othaya and SSI with Ruffus, the Agricultural Officer of Nyeri South sub-county.

In our research we have found that there is a variety of MFIs present in Othaya as summarized in Table 2, and thus a variety of options available to the farmers. Historically, the absence of these institutions has been a main problem of accessing microcredit (World Bank, 2014), but according to our research this is not the case in Othaya.

Access to microcredit

In the context of microfinance and smallholder agriculture, how is access determined?

In this section we will investigate and discuss small-scale farmers' access to microcredit in Kianganda. We define access as "(...) the ability to benefit from things—including material objects, persons, institutions, and symbols" (Ribot & Peluso 2003:153). Ribot and Peluso point out that: "Access retains an empirical "... focus on the issues of who does (and who does not) get to use what, in what ways, and when (that is, in what circumstances)" (ibid.:154). In line with this, we have examined the access to microfinance by investigating who is able to take what kind of loan and under what circumstances. Firstly, we will discuss factors that can prevent access to loans and secondly we will discuss what mechanisms can give access to loans (Figure 8).



Figure 8. Flow chart illustrating the sub-sections in the results & discussion section. Current section is highlighted in teal.

Preventing factors for accessing credit

In this section, we will outline the requirements for taking a loan set out by the different MFIs and triangulate this with farmers' views. Secondly, we will elaborate on these requirements in terms of how they can prevent access.

Institution requirements for credit

To access a loan in Family Bank, you need to have an active account for 6 months. They base the loan on individual savings - your savings need to be 20% of the amount applied for. They also do a SWOT (Strength Weaknesses Opportunities and Threats) analysis of the loan applicant to determine if they will have the ability to pay back that loan (SSI-Family Bank). Loans via SACCO's are also accessed via savings. This means that farmers have to be members of the SACCO and having saved money on that account. SACCOs also demand collateral in terms of production of the farm, for instance Biashara SACCO checks logbooks of tea/coffee production (SSI-Biashara). Taifa SACCO requires members to have saved for 6 months and show a minimum saving of 500 KSh (SSI-Taifa). Both banks and SACCO's require guarantors. This means, that a person must sign on behalf of the applicant as the guarantor, and if the loaner is unable to repay, the guarantor will have to cover the repayment. In general, SACCO loans are perceived by farmers to be easier to obtain than bank loans (PRA with focus group, SSI with farmers). The dialogue below exemplifies this:

- K: Why would you join the SACCO and not ask for a loan in a bank for instance?
A: The interest is higher in the bank than in the SACCO.
S: Other reasons?
A: It's much faster.
S: Did you ever try to apply for a loan in the bank or is it just what you have heard.
A: According to my husband, it takes a lot of time.
D: The husband took a loan in Equity bank.
S: So, you would definitely prefer the SACCO before the bank?
A: Yes.

(SSI with Elizabeth)

In order to obtain a loan from the tea or coffee cooperative, you must hold a membership, meaning that you are required to deliver tea/coffee every month (SSI with KTDA, coffee cooperative). The Senior Business Development Officer at KTDA states: "As long as you pick tea, you are qualified [for a loan]" (SSI-KTDA). Membership of SHGs can be based on a variety of requirements, ranging from clan- or village associations,

entrance payment, trustworthiness and personal character or collateral. The latter being exemplified by the conversation below:

St: Do you know anybody who wasn't able to get microcredit - like, a loan?

C: Yes, because when you join a group, people want to know your background. Even if you give 10 shillings, they want to know. People cannot trust you. You have to show your tea, your cow, all of your assets. Anything you can sell.

(SSI-Mary, Rugi SHG)

The Rugi SHG has a ledger of all members, where they list the assets of each member. This is an example of a SHG that requires a form of collateral in terms of personal assets, and thus, lack of this can be a restricting factor.

To summarize, we have found that the primary requirements to microcredit are membership, guarantors, savings and collateral. Below, we will discuss these factors and the implications they can have for accessing credit.

Membership and guarantors: Trustworthiness, personal character and social relations

A farmer's ability to live up to requirements for becoming a member of SHGs and SACCOs, as well as finding a guarantor, we argue, is based on the applicant's social identity and relations. Access via social identity, we define as, "Access (...) mediated by (...) membership in a community or group (...)" (Ribot and Pelusio 2009:170) and social relations as providing "Access via the negotiation of other social relations of friendship, trust, reciprocity, patronage, dependence, and obligation (...)" (ibid:172). The manager from Taifa SACCO underlines the trustworthiness of a person as the most important factor in deciding if the person is eligible for a loan (SSI Taifa). Also Thomas, who is a member of a men's SHG, explained the importance of drinking responsibly, guiding family members in a meaningful way and having a vision for improving one's farm, when determining if the person is an eligible candidate for the group (SSI-Thomas). In general, we found that personal characteristics and trustworthiness are common prerequisites for becoming a member of SHGs (SSI-farmers).

The manager from Taifa SACCO also mentioned the use of alcohol as a limiting factor when issuing loans (SSI Taifa). This points to personal character as potentially being a limiting factor for access to loans, both in formal and informal institutions.

At the PRA session with farmers, they wrote “difficult to find a guarantor” as a negative aspect of SACCO loans (PRA focus group). Thus, the requirement of a guarantor can be difficult to fulfil. Access in this case, we argue, is determined by a person’s social relations. That is, the person’s ability to find someone who has the economic means to guarantee and who is also willing to take the risk associated with being a guarantor. The dialogue below is an example of guarantors facilitating access.

St: So if we walk in together, [Signe] has nothing - she’s a very poor farmer and I have 100.000 shares in my name, I could sign as a guarantor?

P: Yeah you can guarantee it.

St: And then all the risk is on me then?

P: It’s on you! [Laughs] But then again, you have to see how she operates that account.

(SSI with Biashara SACCO)

The examples used in this section underline the importance of social relations in regards to accessing credit.

Savings: demand for cash

Accessing credit via savings, both in SACCO’s, Family Bank and in some SHGs, demands monetary input (SSI Family Bank, Taifa, farmers). Cash savings require accumulation of income derived from farm production, selling of assets or other off-farm income sources. Thus, if a farmer is not able to do so, this can be a limiting factor for accessing microcredit. This is the case of our informant Maureen, who would like to be member of a SHG, but she doesn’t have the money to contribute (SSI-Maureen).

In spite of the preventative factor explained above, we have found that people in Kianganda do have access to some sort of credit: most of our informants are tea or coffee farmers, meaning that they will have access to credit from the cooperatives. Also, most of them would be able to provide the collateral needed for bank loans and SACCOs in the form of land or production from tea/coffee. Furthermore, many of our informants are members of SHGs (SSI farmers). However, we also found that many did not take a loan: from our questionnaire data, 46% of the farmers have never taken a loan. Of those farmers, 43% stated that they didn’t because it was too risky. Thus, we have identified an overall theme of risk concerning loans as a main obstacle for farmers. This, is associated with the fear of not being able to pay back the loan, hence, collateral being at risk (SSI farmers). We elaborate on this, below.

Risky loans

For many farmers in Kianganda loans are risky because of the consequences of not being able to pay back the loan. We will exemplify this with the following conversation with our informant, Margaret:

S: And then what will happen if you can't pay back the money?

R: If you don't pay that money your bank [account] can be closed, that is you can't save any money anymore. You can't get a loan when you're asking. And they spoil your name.

K: Do you know someone where that happened?

R: Yeah. [Translated] When you're defaulting the bank, the bank would go to an extent of doing something that will just embarrass you.

J: Like, she is saying "pulling off your own roof". Someone suffered that, they just came in the house.

R: Even your clothes.

(SSI Margaret)

In this conversation, we perceive Margaret as expressing fear in not being able to pay back a loan. Many farmers interlinked this fear with unpredictability in farming. Especially weather unpredictability was generally expressed as an issue when considering a loan, because crops, and thereby income, depend on weather. Some farmers stated water and rain as the main difficulty on their farm, because many do not have irrigation systems and rely only on rainfall. Margaret's explanation for why she has never taken a loan at a bank, was as follows: "[Laughs] I can say a good reason. The way you'll be paying it is sometimes difficult. Because you can depend on tea, and because of lack of rain it might, drop you in a way. This chicken also, where it comes a time when they are sick" (SSI Margaret). Thus, weather unpredictability and other unforeseen happenings that decrease the income are interlinked with perceptions of loans as being risky.

Mechanisms for obtaining credit

Although access to credit can be prevented through the above-mentioned factors, there are ways in which farmers organize themselves in order to overcome them. Based on our data, these mechanisms are characterized by group-effort, where farmers work together in both formal and informal frameworks to acquire credit with minimized risk.

Pooling of resources

One of the mechanisms farmers use in order to claim credit, is to involve themselves in a SHG. Some of the SHGs have bank accounts, and through funds accumulated here, they are able to apply for loans much bigger than what would be possible as individuals. During our fieldwork we attended a meeting with one of the SHGs in Kianganda, where they explained their future plans for investing in a large plot for them all to share, through funds accumulated at their common bank account. Furthermore, within the same group, members could receive loans of up to 10.000 KSh. This serves as an example of how the pooling of resources can grant access to small loans for individuals, with a minimized risk in terms of losing their land and possible access to larger loans.

Negotiating social relations

As previously mentioned, the loan application process typically involves provision of collateral. This requirement can restrict access for some, but can in some cases be overcome or supplemented through a guarantor. Finding a guarantor involves social relations of trust, as argued previously. The importance of trust and a good reputation extends to the SHGs, as the lack of this can be an access-limiting factor. If a person is able to (re)build their trust and good reputation within the community, this may therefore serve as another mechanism through which credit can be obtained either through membership in a SHG or recruitment of a guarantor.

Institutional memberships

Where lack of membership can serve as a restricting factor to accessing credit, obtaining membership can consequently facilitate it. As with the case of the KTDA and Coffee Cooperative, members are able to apply for non-monetary loans, in the form of fertilizer (SSI KTDA, farmers). Repayment of the “loan” occurs through deduction from the income that the farmers would otherwise receive from the same cooperative for their crop yield, and hence eliminates the need to provide savings ahead of time.

Unregulated mechanisms

Going into the field, our literature review primed the concept of informal intermediation in the shape of individuals within the community acting as lenders for others unable to obtain credit from formal institutions. Based on our data, however, we did not record any instances of this specific kind of intermediation.

During the SSI with the Agricultural Officer of Nyeri South County, he mentioned a case where farmers, eligible for receiving fertilizer from the KTDA, sometimes would replace the fertilizer with cash upon

collection from the co-operative. This practice was not following the rules set out by the co-operative themselves, but in his statement occurred as a result of the KTDA employees handing out fertilizer, not caring about what kind of loan was distributed – monetary or non-monetary. Neither the farmers nor the cooperatives mentioned this practice, although again this could be a sensitive topic, not necessarily reachable for us in our position and time frame.

To sum up our analysis in this section, we have constructed Figure 9 to visualize the different steps which can be taken in order to access microcredit.

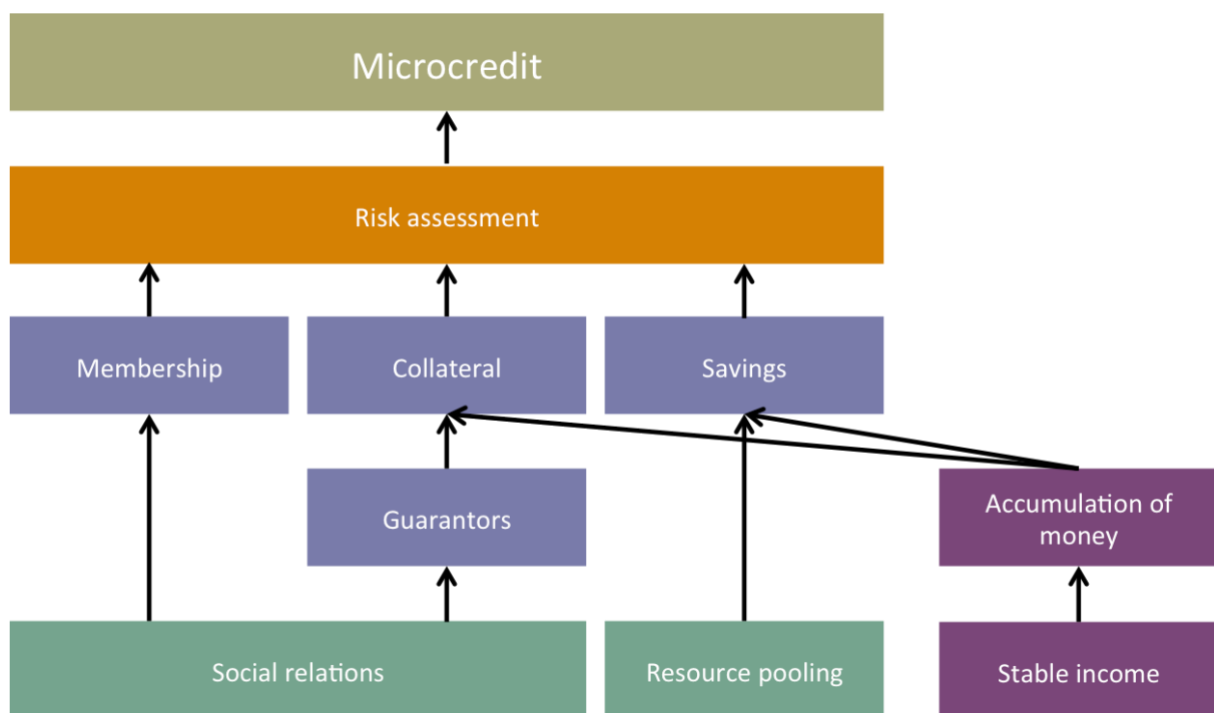


Figure 9. Representation of possible mechanisms which can be used to access microcredit.

The ability to benefit

Access is not only a question of who has access and who has not, but just as much a question of who has access to what - in our case who has access to what kind of microcredit. Based on our data, the question of access can be viewed in line with Ribot and Peluso (2009) as “the ability to derive benefits from things” (ibid.: 153).

According to Ribot and Peluso (2009), the structural and relational mechanisms refer to the ways in which “technology, capital, markets, knowledge, authority, social identities, and social relations can shape or

influence access” (Ibid.:165). Based on our data, access is highly shaped through social identity and negotiation of social relations. This is explicitly evident in our findings, where social networks and identities can mediate access through guarantors and group memberships, and where the continuous negotiation of trust within the community and groupings influence the inclusion or exclusion from the same.

Furthermore, someone might have the ability to obtain a loan from a MFI but may be unable/unwilling to do so because of the risk associated with this. In our example, the access to the loan is influenced by the farmers’ own perception of the risk associated with obtaining it, in case they are unable to pay it back. We argue, that this implies a link between the financial stability of the household and their access to credit.

One of the ways that farmers increase their financial stability is through income sources that are not weather dependent, such as off-farm labor. Thus, people with other incomes than agriculture might have better access to larger loans, because of the reduced risk, when the income is not solely dependent on agriculture. This is evident when comparing the distribution of income sources between all farmers (Figure 3) and farmers taking the most recent loan in a bank (Figure 10), where the proportion of off-farm labor as a share of the annual income is bigger than the former. In this respect, we come to the same conclusion as the World Bank in that a preventing factor of accessing credit is natural and weather risks of agricultural activities and the consequent difficulties paying back loans (Worlds Bank, 2014).

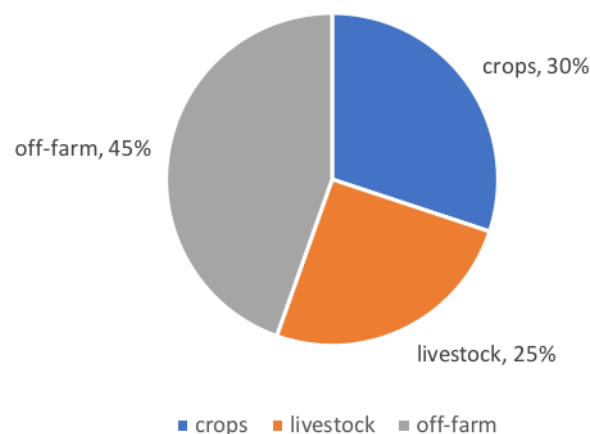


Figure 10. Income distribution among farmers who obtained their most recent loan at a bank.

Based on 5 respondents from the questionnaire dataset.

In this section, we have identified different aspects of access to microcredit for farmers in Kianganda. Firstly, access depends on institutional requirements and the ability to live up to those. Secondly, access depends

on a farmers' ability to cope with risks associated with credit. This, we have argued, depends on the farmers income stability, which is determined by the sources of income, off-farm income being less dependent on whether uncertainties. Therefore, we see an unequal ability among farmers to benefit from microcredit.

Usage requirements for microcredit

This chapter explores the usage requirements set out by the MFIs for smallholders receiving credit and how they affect agricultural practices (Figure 11).

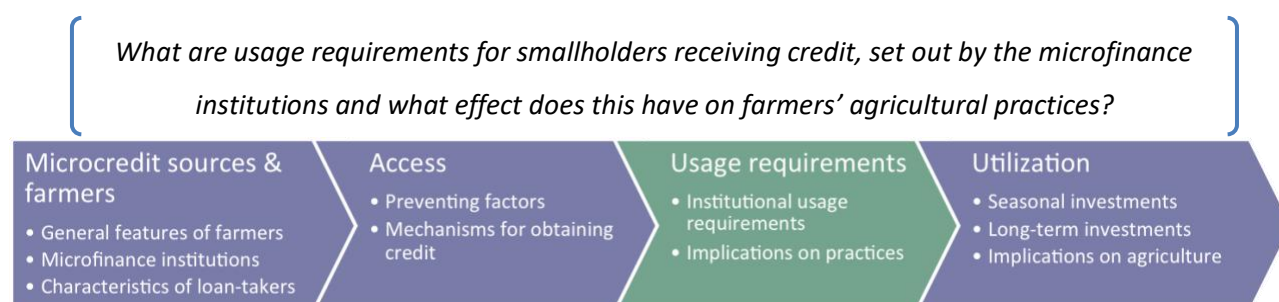


Figure 11. Flow chart illustrating the sub-sections in the results & discussion section. Current section is highlighted in teal.

Usage requirements set out by the microfinance institutions

Our findings show that usage requirements for credit are fairly non-existent among the institutions that we interviewed. From these interviews, the banks, SACCOs and cooperatives mainly require an assessment and explanation/plan of how the credit will be spent.

When evaluating whether a credit applicant will be approved or not, Family Bank requires a precise proposal of the expenditures so that they can then assess the repayment feasibility of those practices. Secondly, they will follow-up with the tea cooperative to evaluate and control the productive ability of the farmer. Lastly, randomized farm visits take place, where the bank can check-in with the farmer and evaluate their progress and see, weather they are sticking to the original plans they had given when applying for the loan. During these random check-ups, advices are provided from the agricultural credit officers if they see that the progress is not sufficient or that they are not spending the money as they said they would.

Taifa SACCO requires a rough plan for the expenditures of the loan, which is followed by a random check of the investment progress on the farms. However, if there is a discrepancy between what was originally planned and what the credit is being spent on, Taifa might recall the loan.

On the other hand, Patrick, the Branch Manager at Biashara SACCO, stated that the applicant has to come up with a proposal of the expenditure and how to pay back, but Biashara does not require a precise plan of investments. They may however, perform randomized check-ups to control the production and expenditures three months after the farmer receives the credit, and this claim is backed up by the farmers' statement: if "you don't pay [the loan] back they will come for you" (SSI-Geoffrey). Mostly, they come by those farmers that are "doing extremely better" and those whose production "has not increased [...], so we go and see where they really invest the money we gave him" (Branch Manager of Biashara SACCO, SSI). Therefore, there is subsequent control of how loaners are administering and investing the money. The coffee cooperative act similarly to SACCOs, unless credit is given in the form of agricultural inputs (i.e., seeds, fertilizer bags), in which case it is automatically invested in declared and monitored scopes. The KTDA requires the loaner to provide an explanation for taking the loan and they encourage the applicants on what and how to spend the money, but they do not check-up on it.

Likewise happens for the SHGs, in which not many usage requirements are stated, rather they try to give advice on how to invest the money (Focus group with Gitari SHG, SSI farmers). On the contrary, Margaret's SHG implements a new procedure of expenditures and members are encouraged to not spend the money on "eating, money for the stomach, buying clothes" (SSI-Margaret). This attitude arises from the desire and purpose of this group to grow, expand and save money to invest in projects (i.e., buying poultry, large pieces of land).

Before going into the field, our group was under the impression that usage requirements set out by the institutions would have been a direct reason for farmers choosing a particular institution. This however, was not the case; whenever we asked respondents about institutional usage requirements, they would often respond with answers related to access, rather than usage/utilization. These responses would include loan requirements such as interest rate, loan size, collateral needed, and the overall process. This being said, the Agricultural Officer explained to us that people rarely take loans via government supported projects, because these projects have strict usage requirements.

Implications on practices

As stated above, there are no strict usage requirements set out by MFIs on how to spend a loan when using it for agricultural practices. Nevertheless, institutions provide advice on how to manage finances and how to improve farm productivity. For example, Taifa SACCO offers training for farmers on loan utilization to maximize farm production and on usage of manure and fertilizers. KTDA advises their members on how and why to save, and how to borrow and invest (SSI-KTDA). During a farmer SSI, Margaret explained how the

KTDA also visits her in the field and tests the soil to give advice on what fertilizer to use. She said to have learned more about how and when to apply fertilizer and manure on her tea plants from the agricultural extension officer of the tea cooperative. This has resulted in a higher production, which according to her was a result of proper application of fertilizer. The coffee cooperative visits farmers in the field too, to check how people are taking care of the coffee. They provide information about coffee production and advice on pruning, how to weed and how often farmers are supposed to spray and use fertilizer (SSI-Grace). Besides, the cooperatives and SACCOs functioning as a platform to access advisory services. During the SSI with Grace, she pointed out that the Kenyan Women Finance Trust, referred to as being a SHG, serves as a place to exchange information, where “we assist one another” on how to farm and how to market products. Besides providing advice, some institutions, e.g. Taifa SACCO and Family bank, organize field days in which farmers visit a productive farmer in the area to learn from. It is important to note that we did not hear many examples of farmers participate in these activities (SSI Taifa, Family Bank).

Thus, although there are no strict usage requirements in place to steer farmers towards sustainable land use practices, there are advisory bodies in place in each type of institutional organization which deal with land use practices. The effect of providing advice, trainings, activities and projects could stimulate farmers to adapt other land use practices which can be sustainable or unsustainable. For example, people are stimulated by the cooperatives to use pesticides (Focus group interview) which can render economic benefits in the short run but can be viewed as environmentally degrading in the long run. However, the extent to which advice is being adopted by farmers and the exact impact of this goes beyond the scope of this report and thus is found valuable to further investigate in the future.

Utilization of microcredit in agriculture

How is the utilization of microcredit manifested in agricultural land use practices?

Based on our questionnaire and SSI data, we will first provide an outline of what we have found the farmers to spend money from loans on in general, followed by what the farmers spend money on in the farm. We will triangulate this with PRA exercise data from the focus group discussions. This will include a discussion on expenditures both in long-term and seasonal investments (Figure 12).

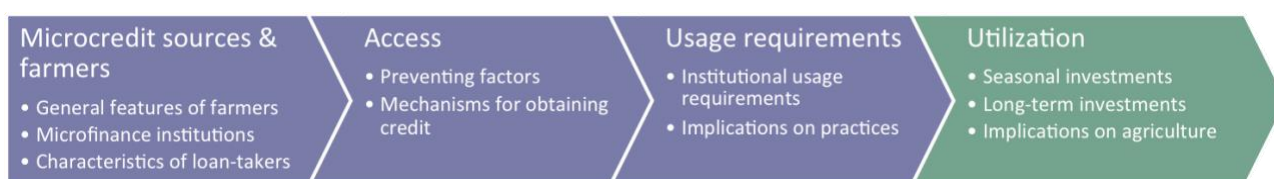


Figure 12. Flow chart illustrating the sub-sections in the results & discussion section. Current section is highlighted in teal.

In general we have found that people borrow money from a range of institutions and invest money in a variety of ways. According to our data from questionnaires, (Figure 13 below) most people have spent loans on agriculture followed by family needs (food, house improvements, utensils, etc).

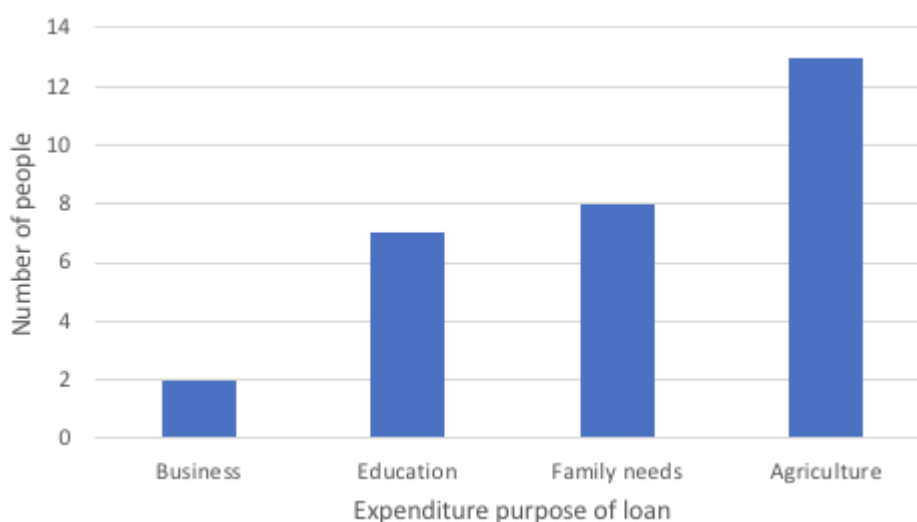


Figure 13. Loan-takers and their different expenditure purposes of the most recent loan, based on the questionnaire data.

Note that people can have more than one expenditure purpose.

From our data set, 7 of interviewed farmers (57%) and 7 farmers (40%) subject to the questionnaire, have borrowed money for the purpose of paying for school fees. This can suggest an overall interest in investing in education, which we found to be of high importance to farmers, throughout all of our methods.

When asking about money loaned from self-help groups, improvements for the house, utensils, food and clothes were common expenditures. In some cases however, these kinds of expenditures were not encouraged, like in the instance of Margaret's SHG. Although most people invest in on agricultural purposes, the total amount of money invested in this category is a lot smaller than what is being spent on education and family needs. This is in line with our findings from SSIs that money spent on agricultural purposes is commonly seasonal investments.

Seasonal investments

Based on our questionnaire and SSI data we have found that money borrowed for agricultural purposes was rarely spent on long-term investments, but rather on seasonal farm expenses, most commonly pesticides, fertilizer, seeds, and casual labour for picking tea. Mary explained: "For the shamba, not really [take loans]. Because you know, the merry-go-round when you get your 500 that is enough for the shamba" (SSI-Mary). Many farmers borrow fertilizer from the cooperatives and the price is then taken off the payment for their tea. These investments hold the potential to increase the yield of the crops, and thus can be perceived as potentially productive.

Long-term investments

Across all data acquired from our methods, an investment receiving special attention by farmers both in terms of previous and future investments is livestock. During the SSIs, numerous farmers reported previous investments in livestock and this is further backed up by 10 out of 13 interviewed farmers expressing the intention of investing in livestock in the future. Secondly, farmers showed a notable interest in various livestock forms when given a theoretical loan spending exercise during the focus group (Appendix V). Frequently mentioned examples during SSIs include investment in cows, which produce milk once matured, thereby providing a source of income; chickens which produce eggs and can be consumed, in addition to goats which can be sold if need be. This shows an incentive by farmers to invest in livestock because it can serve as a source of subsistence products, as well as a non-monetary form of saving.

In general, we found that farmers consider livestock as a safe investment that require less space, labor and attention on the farm, as exemplified by Geoffrey during the SSI: "When you have cattle, you don't have a



Figure 14. Two calves in a zero-grazing system in Kianganda, Kenya.

hassle. You only need a vet and you feel more independent. Coffee and tea require a process (harvest, selling, processing, auctioning). Milk production is different."

Livestock is also viewed as security, because the farmers can sell an animal if they need quick cash. When farmers were asked about loan expenditures on agriculture during the SHG focus group, dairy cow, dairy goat, calves (Figure 14), sheep, water tank, chicken, pig, seeds, fertilizer (and school fees) were listed. This alone clearly highlights the importance of livestock to farmers, and when consequently asked to rank them by importance, livestock ranked second only surpassed by water tanks. Secondly, livestock was acknowledged over seeds as an investment, due to weather dependence of crops and the risk associated with crop farming. Lastly, in the case of Elizabeth (SSI) and Jason (informal conversation), generational land segmentation and the resulting smaller land sizes has influenced the way farmers plan to invest. Elizabeth and her husband have 18 chickens and 2 cows and plan to continue investing in livestock, with the money received from SHG merry-go-rounds, because their plot of land is too small in terms of cash crops. With that, livestock can be seen as a better investment option compared to cropping, due to smaller fields. Contrary to this opinion, Grace stated that livestock can be more risky than crops, since farmers rely on rain for their napier grass production, for cows feed. This is an interesting comment that highlights that farmer investments, interests and opinions are highly subjective and based on farmers experiences and their farms.

"When the crops thrive, the livestock do not. But when the crops fail, the livestock thrives."

(SHG Focus group discussion)

From our methods, we found only a handful of farmers that invested a loan in long term agricultural improvements. Thomas had previously loaned 1.000.000 KSh from Barclays Bank, while having off-farm employment at Kenya Airways. 50% of this loan was allocated to his children's education, 30% was spent on his farm and 20% was spent on his home. Of the farm expenditures, a security fence around his entire farm was built because of problems with trespassers destroying his tea plants and stealing trees. There was a portion also spent on Thomas' "motito", a small forest where he fosters tree growth and is developing a place for himself, as a farmer, where he can go and find peace and solitude. Since building the fence, his tea production has improved and increased his income, therefore proving this investment to be effective in the long run. The size of Thomas's loan was larger than the average, allowing him to make larger investments. This point will be discussed further in the section below.

Implications of loan size on investments and agricultural practices

Based on the above examples, it is clear to us that although most farmers have access to some kind of microcredit, the loan size determines to some extent what they can invest in, and thus their agricultural practices. We have uncovered a general perception of banks being the only institutions providing loans for large investments in assets such as plots and water tanks, these being long-term investments that increase the flexibility of the agricultural practices of the farmer.

As mentioned above, the water tank ranked highest in the preference matrix exercise during the SHG focus group where the comment, "water is life" explained their preference. Everything on their farm, from the basic needs of the household to the crops and livestock, depends on water. Hence, this provides the platform upon which their livelihood is built. However, not every household represented in the SHG we visited had a water tank, but they told us that it is a future goal for the group that everyone has one. Grace wanted to invest in a water tank, because she wanted to grow other vegetables, which can be harvested in a shorter period of time, but these demand more water than coffee and tea. To buy a water tank she needed 1.000.000 KSh, but the Taifa SACCO would only provide 200.000, based on her savings (SSI Grace). We argue that farmers with access to larger loans have better access to long-term investments, which increase this flexibility, like the ones mentioned in this section. This means that they can more easily change and adapt their agricultural practices to more beneficial practices, such as other crops, livestock, trees and water tanks. Farmers eligible for a large loan typically include those holding a title deed for a large piece of land, and those with a stable income/production level. Their willingness to take the loan is further influenced by how risk averse the farmer or person is, which in turn relates to their financial stability prior to taking the loan, as already argued. We have observed that this dependency has created a group of farmers with assets and

stability needed to obtain large loans, while other farmers are left with access to loan for smaller investments. This, we argue, has the potential of creating a gap between the “worse” and “better” off farmers, where the latter can develop and adapt to changing conditions much faster than the others.

Joan expressed that she would like to take a loan to invest in a plot of land and increase crop production, but stated she would not be able to pay back the loan. Consequently, she only receives credit from a SHG, which she spends on fertilizer, pesticides and seeds (SSI Joan). The Gitari SHG however, has been collecting savings from their members to buy a common plot of land. As with Joan, this holds the potential to provide additional income sources for the farmers involved. Furthermore, this might imply a shift of SHGs, from helping members with day-to-day expenditures and smaller investments, towards larger, long-term investments either as a group, or individually by encouraging members to make farm investments like in Thomas’ mens SHG (SSI-Thomas).

The extent, to which these investments and resulting changes in agricultural practices are environmentally sustainable, can be debated. Our research has arrived at a similar conclusion of Ruben & Clerex (2003), which highlights the difficulty in showing the relationship between access and utilization of rural finance and the adoption of sustainable land use practices. That being said, some instances of farmers in Kianganda demonstrated clear efforts in moving in this direction. For example, Thomas’ investment plan with tree planting, maize irrigation and biogas, exemplifies a sustainable land use shift. This however, cannot go without mentioning the complexity behind what “sustainable” land use practices are, depending on the context in which it is used in people's lives.

As stated by Rahman (2010) the target recipients of MFIs use these to raise income, build assets and to decrease their vulnerability towards stresses and shocks. We can support this statement with our own findings, which indicate that people aim to build assets when using microcredit. We have seen that these investments have a varying degree of prudence, depending on the size of the loan that is being received. This in turn can affect the sustainability of practices adopted via these funds. In terms of decreasing vulnerability, one of the strategies adopted by farmers is diversification of income sources. Hence, microcredit holds the potential to decrease vulnerability towards stresses and shocks. However, our findings point towards an increased vulnerability, when the obtainment of a loan is followed by the inability to repay it. Risk perception, the ability to cope with this risk and institutional requirements are factors, which can prevent people from accessing a loan, and therefore limit the potential of microcredit. This prompts the need for financial options and measures towards reducing the risk associated with taking a loan.

Hazell (1992) found, that farmers with insurance are more likely to take greater risks to increase income. They also found, that agricultural insurance can reduce the risk of loan default, which enables banks to provide bigger loans. Olaosebikan and Adams (2014) find that micro-insurance can assist in reducing the risk of loan defaults, stimulating an increased return on savings and decreasing the costs of debt. Therefore, we argue, access to affordable insurance could lower the risk of being deprived of production assets, since production failure is partially covered and therefore stimulate farmers to take loans, invest in their assets and improve their livelihood stability. Agricultural insurance is available in Othaya, though it was not explored in this research. However, the agricultural officer pointed to the lack of insurance, which covers agricultural credit, as a main challenge in the region (SSI Ruffus). Also, our informant Michael explained that farmers do not insure their crops, because they do not trust the insurance companies, to actually cover the damages economically (informal conversation with Michael).

In this light, we find it interesting to further look into agricultural insurance in the region, and to investigate its potential for reducing risk, as well as its implications on access to and utilization of (bigger) loans and the loan taking process.

In line with this, we suggest looking into the potential of combining loans with insurance, to minimize the risk of crop fail, hence minimize the risk of taking a loan. If the access to larger loans is improved, an increase in farmers' income might be the associated result, possibly improving financial stability, which is essential to decreasing poverty, in line with the UN Sustainable Development Goals (UN, 2013).

Conclusion

Based on our results we can conclude that farmers in Kianganda have access to a variety of MFIs for obtaining loans. The way access to credit is determined is dynamic and differs for each farmer, based on several interdependent contextual factors. These factors include the ability to fulfil requirements set out by MFIs, to be eligible for taking a loan as well as the risk perception of taking a loan by farmers themselves.

Although literature has previously stated that access to microcredit has been limited due to long distances from institutions and high credit costs, we have reached a different conclusion. In our study area, access is partly based on the ability of farmers to fulfil institutional requirements. The primary institutional requirements identified, in order for farmers to be eligible for taking a loan, are membership of the institution, guarantors, savings and proof of sufficient collateral. There exists a general perception of having easier access to a loan at SACCOs, cooperatives and SHGs since requirements are easier to satisfy. Being able to fulfil the institutional requirements, depend on ones assets, as well as one's social identity and ability to negotiate social relations. Forming groups is a mechanism to pull resources together and access a bigger loan and spread risks. Other mechanisms we find influencing access are of highly relational nature. The access through social identity and negotiation of social relations can mediate access, through guarantors and group memberships, where the continuous negotiation of trust within the community and groupings influence the inclusion or exclusion from the same. Unregulated mechanisms to obtain credit were not observed in our study area, however can exist.

Besides the ability of farmers to fulfil institutional requirements and use mechanisms to access credit, the risk perception of taking a loan can be a limiting factor in terms of accessing microcredit. As for agriculture, investing in crops is associated with a high risk of being unable to pay back the loan due, to weather dependence. The research has shown that many farmers will prefer to invest in livestock over cropping systems largely because of the risk associated with the latter. Loans obtained via microcredit primarily manifests in agricultural practices as seasonal investments, mainly being pesticides and fertilizer. Furthermore, microcredit spent on livestock generates a wide variety of products including manure, encouraging the use of this, as an agricultural practice. Based on our perception of sustainability in this context, the degree of how long-term an investment is can to a certain extent be linked with the sustainability potential of that investment. These investments depend heavily on the size of the loan, which again is determined by the level of access the farmer has, to microcredit sources.

References

- Barrett, C.B., Bezuneh, M., Aboud, A., (2001). *Income diversification, poverty traps and policy shocks in Cote d'Ivoire and Kenya*. Food Policy 26, 367–384.
- Biscaye, P., Clark, C., Harris, K. P., Anderson, C. L., Gugerty, M. K., & Anderson, L. (2015). *Review of Rural and Agricultural Finance in Sub-Saharan Africa*.
- FSD Kenya (2012). Transforming microfinance in Kenya, the experience of Faulu Kenya and Kenya Women Finance Trust. Online: <https://www.microfinancegateway.org/sites/default/files/mfg-en-case-study-transforming-microfinance-in-kenya-the-experience-of-faulu-kenya-and-kenya-women-finance-trust-feb-2012.pdf>, accessed on: 14-02-2018.
- Hazell, P.B.R., (1992). The appropriate role of agricultural insurance in developing countries. *Journal of International Development*. Vol. 4, No 6. 567-581 Available at <http://web.a.ebscohost.com.ep.fjernadgang.kb.dk/ehost/detail/detail?vid=0&sid=b63a5014-a361-47e9-9391-467aa007320f%40sessionmgr4007&bdata=JnNpdGU9ZWWhvc3QtbGl2ZQ%3d%3d#AN=18387587&db=bth> Accessed on 03-04-2018
- International Finance Corporation (IFC), (2014). Access to Finance for Smallholder Farmers. Learning from the experiences of Microfinance Institutions in Latin America. World Bank Group, Washington, D.C.
- Kaburi, S.N., Ombasa, B.B., Omato, D.N., Mobegi, V.O., and Memba, F., (2013). An Overview of the role of microfinance in eradicating poverty in Kenya; A lesson to be learnt from the emerging economies. *International Journal of Arts and Commerce*.
- Kalunda, E., (2014). Financial inclusion impact on smallscale tea farmers in Nyeri County, Kenya. *World Journal of social Sciences*, Vol.4, No.1, pp. 130-139.
- Kohansal, M.R., Ghorbani, M., and Mansoori, H., (2008). Effect of credit accessibility of farmers on agriculture investment and investigation of policy options in Khorasan-Razavi Province. *Journal of Applied Sciences* 8 (23): 4455-4459, 2008.

Making Finance Work for Africa (MFW4A), (2012). Policy Brief on Agricultural Finance in Africa. African Union Commission.

Mathenge, M. K., and Tschirly, D.L., (2015). *Off-farm labor market decisions and agricultural shocks among rural households in Kenya*. Agricultural Economics. Available at: <https://doi-org.ep.fjernadgang.kb.dk/10.1111/agec.12157>, Accessed on 28-03-2018

Mwangi, I.W., and Sichei, M.M., (2011). Determinant of access to credit by individuals in Kenya: a comparative analysis of the Kenya National FinAccess Surveys of 2006 and 2009. *European Journal of Business and Management* 3 (3).

Olaosebikan, O., and Adams, M., (2014). Prospects of micro-insurance in promoting micro-credit in Sub-Saharan Africa. *Qualitative Research in Financial Markets*, 6(3), 232-257. Available at <https://search-proquest-com.ep.fjernadgang.kb.dk/docview/1633964324?accountid=13607> Accessed on 03-04-2018

Rahman, W.A.A., (2010). An overview of microfinance: history and evolution, definition and practice. *The free library*. Online: <https://www.thefreelibrary.com/An+overview+of+microfinance%3A+history+and+evolution%2C+definition+and...-a0374921305>, accessed on: 14-02-2018.

Ribot, J. C. & Peluso, N. L. (2009) A Theory of Access. *Rural Sociol.* 68, 153–181.

Ruben, R., & Clercx, L. (2003). Rural finance, poverty alleviation, and sustainable land use: the role of credit for the adoption of agroforestry systems in occidental honduras. *Journal of Microfinance/ESR Review*, 5(2), 5.

Safaricom. 2017. M-Shwari, KCB & M-Pesa. Available at: <https://www.safaricom.co.ke/personal/m-pesa/do-more-with-m-pesa/loans-and-savings> Accessed on 28-03-2018

Schörghofer, H.M.,(2008). Microfinance in Developing Countries. *Diplomarbeit, University of Vienna*. Fakultät für Wirtschaftswissenschaften BetreuerIn: Zechner, Josef.

United Nations, (2013). Microfinance in Africa. Overview and suggestions for action by stakeholders.

World Bank, (2014). How can finance influence productivity of agricultural firms? Online:
<http://blogs.worldbank.org/allaboutfinance/how-can-finance-influence-productivity-agricultural-firms>,
accessed on: 25/03/2018.

World Bank. (2015). Republic of Kenya, Bright lights, Big cities. Measuring national & sub-national economic growth from outer space in Africa, with an application to Kenya and Rwanda. Available at:
<http://documents.worldbank.org/curated/en/102261468045886940/pdf/Brights-Lights-Big-Cities-October-2015-final.pdf> Accessed on 13-02-2018

World Bank, (2018). Agriculture Finance & Agriculture Insurance. Online:
<http://www.worldbank.org/en/topic/financialsector/brief/agriculture-finance>, accessed on: 24/03/2018.

Vizcarra, V., Ngahu, J.I., and Ramji, M., (2017). Mobile financial services in microfinance institutions: Musoni in Kenya (English). IFC mobile money toolkit. Washington, D.C. : World Bank Group.
<http://documents.worldbank.org/curated/en/509011500445237213/Mobile-financial-services-in-microfinance-institutions-Musoni-in-Kenya>

Appendices

Appendix I - Final synopsis

Agricultural microfinance and farmers practices

Synopsis



Aveline Bies (CQH374), Elena Allegri (MLX904), Katrine Lindholm (CZR910), Steve Tapley (FPB812) and Signe Bering (KHP963)

Supervisors: Christian Pilegaard Hansen and Lise Tjørring

TABLE OF CONTENTS

Introduction	4
Research Question	5
Immediate Research Questions	5
Description Of The Study Area	5
Microfinance In Kenya	6
Ongoing Developments.....	7
Methodology	8
Questionnaires	8
Semi-Structured Interviews (SSI)	9
Participant Observation	9
Focus Group Interviews	9
GPS Mapping	10
Participatory Rural Appraisal (PRA)	10
References	11
Appendix 1: Questionnaire Draft	14
Appendix 2: SSI Guide (Farmers)	18
Appendix 3: SSI Guide (Institutions)	21
Appendix 4: PRA And Focus Group Guidelines.....	23
PRA Guidelines	23

Focus Group Guidelines 24

Appendix 5: Timeline..... 25

Appendix 6: Research Matrix 27

Introduction

Alleviating poverty, promoting empowerment and enabling the poor has been the main purpose of microfinance institutions across developing countries since the 1970's. Microfinance is a combination of loans, savings, investment opportunities and insurance. It is aimed at establishing inclusive financial systems to integrate specific services fit to fulfill the demand of the poor and take them up in the mainstream financial system (Rahman, 2010). Hence, the unique trait of microfinance services is that these are provided to people, who otherwise would not have access to these kinds of financial services (Schörghofer, 2008). The target recipients generally use microfinance institutions to raise income, build assets and to decrease their vulnerability towards stresses and shocks (Rahman, 2010).

In Kenya, the microfinance sector is one of the most prevalent in Sub-Saharan Africa, and includes a wide range of institutional forms and networks to reach rural areas (FSD Kenya, 2012). According to the Kenyan Microfinance Act 2006, microfinance services are provided by three types of sources, i.e. formal institutions, semi-formal institutions, and informal institutions. In Kenya, each of the three categories has multiple players. Formal institutions involve banks and Deposit Taking Microfinances which are both regulated and supervised by the Central Bank of Kenya. Savings and Credit Cooperative Organization (SACCOs) which take deposits are regulated and supervised by the SASRA (SACCO Societies Regulatory Authority) and are also part of this category. Semi-formal institutions include non-deposit-taking SACCOs which are supervised by the Ministry of Co-operative Development and Marketing. In addition, credit-only MFIs are part of this category. Institutions with no legal form of registration or supervision such as moneylenders, financial services associations, ROSCAs, ASCAs etc. are part of the informal institution category (FSD Kenya, 2012).

Based on the prevalence and complexity of these different institutions, we find it relevant to explore how microcredit, the money-lending component of microfinance, can affect people's livelihoods in rural Kenya. Although significant research has been conducted exploring people's access to microfinance and -credit in developing countries (Schörghofer, 2008., FSD Kenya, 2012., Vizcarra et al., 2017., Kaburi et al., 2013) specific local contextual factors and institutional frameworks still prompt the need for area-specific analyses. In addition to this, the knowledge of the utilization of funds obtained from microcredit is generally scarce.

We intend to build on this knowledge in our research site of Othaya, Kenya with a dual-approach focusing on access and utilization. We hope to collect knowledge about the determinants of access to microcredit along with the allocation of money obtained from these loans within the household practices of farmers in Othaya.

We hope to be able to combine the data obtained from these two aspects, in order to uncover the way in which credit affects agricultural practices of households in the study region.

Research question

How does access to and utilization of formal or informal rural microcredit influence agricultural practices of farmers in Othaya?

Immediate research questions

1. What are the current sources and user characteristics of microcredit among farmer households in Othaya region?
2. In the context of microfinance and smallholder agriculture, how is access determined and facilitated?
3. What are usage requirements for smallholders receiving credit, set out by the microfinance institutions and what effect does this have on farmers agricultural practices?
4. How is the utilization of microfinance manifested in agricultural land use practices?

Description of the study area

The sub-county Nyeri South, which is part of the larger county Nyeri in Kenya, is divided into four locations including Karima which serves as our main research area. The town Othaya is situated within Karima and is the major town and administrative centre of Nyeri South sub-county. The GDP per capita of Nyeri county in 2015 was \$ 1,503 compared to a national average of \$1,350 (WorldBank, 2015; WorldBankData, 2018). According to the 2009 National Census, the county is home to 693,558 people, of which 49% are male and 51 % female and 25% of the population are living in urban areas. The majority of the people are Kikuyus, who are also the largest part of the population in Kenya (22%). Kikuyu people speak their own language called 'Gikuyu'. Along with Gikuyu, Swahili is another commonly spoken language. English is used in the education system, as well as in the employment sector. Besides the Kikuyus, there are other communities living in the area.

The study area is characterized as tropical highland with approximately 1400 mm of rainfall annually where it is also common to show large inter-annual and geographic variations. There are two rainfall seasons, with long rains in April and May and shorter rains in October and November.. Climate

change features, such as drought, do impact agriculture in the area and climate smart adaptation becomes of growing interest (Jaetzold and Schmidt, 1983; Driessen et al., 2001).

Agriculture is the main livelihood strategy in the area and the average farm size is 0,7 hectares. Farmers are cultivating cash crops such as tea and coffee. Coffee is intercropped with horticultural crops but suffers from political interferences and marketing problems. Besides cash crops, crops like beans, banana, sugar cane, yams, maize, sweet potato, arrowroot, Irish potato, peas and vegetables are cultivated. The land in the area has been fragmented due to population increase. In addition to crops, most households hold one or two dairy cows, using a cut and carry system (InformationGuide, 2018).

Microfinance in Kenya

Microfinance does not have a specific universally accepted definition and opinions are divided about its range and its targeted recipients. However, microfinance can be seen as an umbrella term to refer to an array of financial services - such as deposits, loans, payment services, money transfers, insurance, and savings - to low-income households and their micro-enterprises. Although informal microfinance has existed in developing countries since the 17th century, semi-formal and formal forms of microfinance or “modern day” microfinance institutions (MFI) are relatively recent, beginning in the early 1970’s. In developing countries, the marketplace and economy have been evolving such that the traditional microfinance institutions have and continue to transform themselves into profit seeking and corporatized institutions (Kaburi, et al. 2013). What has compelled these institutions to undergo this transformation has been the need for economic sustainability and the self-sustaining financial pressures, as well as seeking support by some form of stabilizing regulatory framework, which historically has not been present (FSD Kenya, 2013).

Between the 1980’s and 2000’s, Kenya’s MFI consisted of NGO’s and the co-financing of multinational agencies. These included the Kenya Rural Enterprise Program (K-Rep, now known as Sidian Bank) and the Kenya Women Finance Trust (KWFT). Their main focus was not only to alleviate poverty but to create jobs, promote entrepreneurial activity, as well as pushing for a general increase in incomes of the poor and improving availability and access to resources and participation in decision making. These institutions did not previously require a significant pledge (if anything) or

collateral from credit recipients, and they provided a low interest rate, making them more accessible for a person or family with little income. Now, these institutions have transitioned into commercial banks to sustain themselves by changing the structure of their services . Kenyan microfinance became regulated only in 2006 with the Microfinance Act, which aims at controlling those who provide and use microfinance services. Previously, the absence of proper regulations made possible to set up microfinance services without barriers and rules (i.e. define the capital to invest, the timespan, the repayment) (FSD Kenya, 2012).

Ongoing Developments

One of the major ongoing developments relative to microfinance in Kenya would be promotion of mobile services used in MFI's. This effort is mainly from the Central Bank of Kenya who hopes to increase financial inclusion with mobile services by improving convenience for existing customers and improving the ability to reach out to new ones (Omwansa et al., 2014). There has already been significant improvements in financial access in Kenya since the introduction of mobile usage in financial services, where an estimated 67% of Kenyans now have access, compared to the 41% in 2009 (Vizcarra et al., 2017). M-PESA (M standing for "mobile" and PESA meaning "money" in Swahili) has been playing a critical role in this growth as it is the primary mobile financial tool used by Kenyans and Tanzanians. M-PESA can work in conjunction with MFI to streamline the process of accessing credit. There is also some evidence showing that there is more unbanked people moving into the formal financial sector where money, initially circulating in informal systems can now be accounted for (Omwansa et al., 2014).

Methodology

In this section, we will outline the different methods we have selected as most relevant to answer our research question and immediate research questions and plan to use in the field.

Questionnaires

Participants: Farmers

Questionnaires will be developed in collaboration with 1-2 other groups from the course and our fellow Kenyan students, and aim at getting basic quantitative data on a wide range of aspects related to the livelihoods of the households in Othaya. Our plan is to acquire data from 40-50 households, which should be achievable when done in collaboration with other groups in the field. Because our questionnaire is comprised of a limited amount of specific and clear questions, the potential to collect data quickly and in large amounts better than other methods (Goodman, 1997). The questionnaire hopes to provide data comparable across households in the study site in order to identify trends and patterns linked to our research question, such as how many people are using microfinance, what they use it on and where they get it from. Furthermore, conducting questionnaire surveys serve as a natural means to meet and introduce ourselves to the people at the study site, and could possibly provide contact information on key informants. Pilot tests will be conducted in order to eliminate difficult, incomprehensible or unnecessary questions.

Semi-structured interviews (SSI)

Participants: Farmers, elders, government officials, institutional representatives

SSIs will be conducted with different actors within microfinance, including providers and users of microfinance as well as officials. This is done in order to grasp microfinance from different perspectives to help answer the four sub-questions and to see where information of different interviewees supports one another and where it contradicts. The interview process will hopefully uncover knowledge and reflections on our topic as well as providing a willing environment to discuss (Whiting, 2008). Doing interviews with the farmers will allow us to investigate their motivations of using microfinance, the complexity of getting access to microfinance and farmers utilization of it. Doing interviews with officials will allow us to clarify their operations and gain a better understanding of the farmer-official relationship from their standpoint.

Participant observation

Participants: Farmers

By doing participant observation we will be able to grasp details and understand both explicit and tacit aspects of people's practices (Musante, 2015). We will use the method participant observation on the farms and in the houses - we will observe and participate, when the farmers (both men and women) are working in the field, when they shop for supplies and other everyday practices related to farming. This will allow us to explore how money is actually spend and also understand their practices of land use and their livelihoods in general.

Focus Group Interviews

Participants: Farmers

Focus groups are used to uncover a range of different experiences and perspectives on microcredit, rather than reaching a consensus on the issues discussed. This interactive group interaction and discussion provides data not accessible through individual interviews (Hennink, 2014). Focus group interviews will be conducted in order to understand and compare perceptions of microfinance, incentives for obtaining credit, utilization of it and how it affects farmers agricultural practices. We

envision comparing opinions of what constitutes important investment options (long-term vs. short-term), in addition to experiences with access to microcredit. Furthermore, it would be interesting to do a focus group interview with either a group of farmers who have not obtained microcredit and/or with a mixed group to add different perspectives, but we will decide in the field if this is doable.

GPS mapping

GPS mapping will be used in combination with questionnaires and SSI's, in order to track the spatial distribution of our respondents. Our aim is to achieve the most spatially representative sample as possible and to be able to visualize possible interesting data clusters. In addition, the location of microfinance institutions will be plotted.

Participatory rural appraisal (PRA)

Participants: Farmers

PRA is a toolbox of different methods that are aimed at giving the informants a more prominent voice in the research, letting them lead and determine the content and direction (Brockington and Sullivan, 2003). We plan on carrying out different methods within PRA to gain knowledge about farmers' use and understanding of microcredit and to discover what is considered important in terms of microcredit. For further details, see appendix 4.

Words: 2139

References

Brockington, D., and Sullivan, S., (2003). Qualitative research. Chapter 4 in: *Development fieldwork: a practical guide*. Edited: Brockington, D., Cupples, J., Kindon, S., Leslie, H., and Murray, W.E. Published by: London: Sage (2003).

Driessen, P., Deckers, J., Spaargaren, O., Nachtergaele, F. (2001). Lecture Notes on the Major Soils of The World. *FAO: World Soil Resources Reports*, Vol. 94. Available at: <http://www.fao.org/tempref/agl/agll/docs/wsr94e.pdf> Accessed on 13-02-2018

FSD Kenya (2012). Transforming microfinance in Kenya, the experience of Faulu Kenya and Kenya Women Finance Trust. Available at: <https://www.microfinancegateway.org/sites/default/files/mfg-en-case-study-transforming-microfinance-in-kenya-the-experience-of-faulu-kenya-and-kenya-women-finance-trust-feb-2012.pdf> Accessed on 14-02-2018.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of child psychology and psychiatry*, 38(5), 581-586.

Hennink, M.M., (2014). Focus group discussions, understanding qualitative research. *Oxford university press*. Available at: https://books.google.nl/books?hl=nl&lr=&id=5DLLAgAAQBAJ&oi=fnd&pg=PP1&dq=focus+group+discussions&ots=hmlTzv-cSR&sig=fiaFq3sCh3w7ZOGS_EWaP8koBjc#v=onepage&q=focus%20group%20discussions&f=false Accessed on 23-02-2018

InformationGuide (2018). Overview of Nyeri County. Available at: <http://www.kenya-information-guide.com/nyeri-county.html> Accessed on 13-02-2018.

Jaetzold, R., and Schmidt, H., (1983). Natural Conditions and Farm Management Information. In: *Farm Management Handbook of Kenya*, Vol. II, Part B: Central Kenya (Rift Valley and Central Provinces).

Available at: http://library.wur.nl/isric/fulltext/isricu_i00023897_001.pdf Accessed on 13-02-2018.

Kabruui. S.N., Ombasa. B.B., Omato. D.N., Mobegi. V.O., and Membwa. F. (2013). An Overview of the role of microfinance in eradicating poverty in Kenya; A lesson to be learnt from the emerging economies. *International Journal of Arts and Commerce*.

Musante, K., (2015). Participant Observation. In: *Handbook of Methods in Cultural Anthropology*. Edited by Bernard, H.R., and Gravlee, C.C.. Published by Rowman & Littlefield. London, UK.

NyeriCounty. (2013). Nyeri county integrated development plan. *Department of Finance and Economic Planning*. Available at: <http://www.nyeri.go.ke/wp-content/uploads/2017/01/County-Govt-of-Nyeri-CIDP.pdf> Accessed on 13-02-2018.

Omwansa, T.K., and Waema, T.M., (2014). Deepening financial inclusion through collaboration to create innovative and appropriate financial products for the poor. *KBA Centre for Research on Financial Markets and Policy Working Paper Series* (2014).

Rahman, W.A.A. (2010). An overview of microfinance: history and evolution, definition and practice. *The free library*. Available at: <https://www.thefreelibrary.com/An+overview+of+microfinance%3A+history+and+evolution%2C+definition+and+...-a0374921305> Accessed on 14-02-2018

Schörghofer, H.M.,(2008). Microfinance in Developing Countries. *Diplomarbeit, University of Vienna*. Fakultät für Wirtschaftswissenschaften BetreuerIn: Zechner, Josef.

Whiting, L. S. (2008). Semi-structured interviews: guidance for novice researchers. *Nursing Standard (through 2013)*, 22(23), 35.

World Bank. (2015). Republic of Kenya, Bright lights, Big cities. Measuring national & sub-national economic growth from outer space in Africa, with an application to Kenya and Rwanda. Available at: <http://documents.worldbank.org/curated/en/102261468045886940/pdf/Brights-Lights-Big-Cities-October-2015-final.pdf> Accessed on 13-02-2018

Vizcarra, V., Ngahu, J.I., and Ramji, M., (2017). Mobile financial services in microfinance institutions: Musoni in Kenya (English). IFC mobile money toolkit. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/509011500445237213/Mobile-financial-services-in-microfinance-institutions-Musoni-in-Kenya>

Appendix 1: Questionnaire Draft

Date: _____ Location: _____ Time: _____

Subject name/number: _____ Translator: _____

KU students present: _____

GPS coordinates: _____

Personal information

1. Age (please write): _____ years old
2. Gender:
 - a. Male
 - b. Female
3. Current marital status:
 - a. Single
 - b. In a relationship
 - c. Married
 - d. Widowed
 - e. Divorced
 - f. Other, please specify: _____
4. What is your highest level of completed education:
 - a. None
 - b. Primary School
 - c. Secondary School
 - d. Bachelor Degree
 - e. Master Degree
 - f. Other, please specify: _____

5. What is your current main occupation :
- a. Farmer
 - b. Student
 - c. Housekeeper
 - d. Off-farm employment (please specify): _____
 - e. Unemployed
 - f. Other, please specify: _____

Household information and assets

6. How many people are permanent residents of the house (please write): _____ people
7. What are the main income sources for your household?
- a. Crop
 - b. Livestock
 - c. Remittances
 - d. Support (aid)
 - e. Gifts
 - f. Pension
 - g. Business
 - h. Labour
 - i. Other, please specify _____
8. How much land does your farm cover en hectares?
- a. 0 – 0.3
 - b. 0.4 – 0.6
 - c. 0.7 – 0.9
 - d. 1.0 – 2.0
 - e. >2
 - f. I don't know

9. How many animals do you have? (you can select multiple answers) Please indicate how many in the space provided.

- a. Cow: _____
- b. Chicken _____
- c. Goat: _____
- d. Pig: _____
- e. Donkey: _____
- f. Horse: _____
- g. Other, please specify: _____
- h. None

Agricultural practices

10. What are the three main crops grown on your farm?

- a. _____
- b. _____
- c. _____

11. What agricultural inputs do you use?

- a. Fertilizers
- b. Chemicals (Pesticides, herbicides, etc.)
- c. Trap-crops
- d. Manure
- e. Agroforestry
- f. Bio-pesticides (Non-agrochemicals)
- g. Pest introduction (male annihilation, ants)
- h. Irrigation
- i. Other, please specify: _____

Financial Information

12. Have you taken a loan within the last... (you can select multiple answers)

- a. 0-5 years
- b. 6-10 years
- c. 11-15 years
- d. More than 15 years ago
- e. I have never taken a loan
- f. I do not know

13. How many loans have you taken in total? _____

14. Where did you loan the money? (you can select multiple answers)

- a. From
- b. From
- c. From Sacco
- d. From a bank
- e. From a mobile company
- f. From a family member
- g. From a friend
- h. From a neighbor
- i. Other, please specify_____

15. Did you use land as a mean of collateral in order to obtain a loan? _____

16. Why was the loan/loans taken?_____

17. What was the money spent on? _____

18. Did someone in your household ever take a loan?

18.b If yes, who?_____

18.c What was the money spend on?_____

Appendix 2: SSI Guide (farmers)

Sub-questions to be answered in the interview:

- 1.1 What types of microcredit do farmers use?
- 1.4. What are the main incentives for obtaining microcredit?
- 2.1 What factors can prevent access to a loan?
- 2.2 What mechanisms do farmers use to claim credit?
- 3.2 What usage requirements influence the farmers choice of microcredit institution?
- 3.3 (How) Does usage requirements affect land use practices?
- 4.1 What was the money from microcredit spent on and how is this likely to influence land use practices?

Introduction:

Thank you for participating, maybe explain the research project, privacy part

Name of farmer: _____ Date/Time: _____

Age: _____ years Gender: _____

Address: Put in GPS

KU students present: _____

Kenyan students present: _____

Duration of interview: _____

Farm and household:

- 1. Could you tell me something about your farm? (i.e. crops grown, cattle owned, size, household size, how long has he/she been farmer)
- 2. Can you describe a typical day on the farm? What do you do? What do other household members do?
- 3. What are the main difficulties of your farm?
- 4. Which incomes do your household have? (remittances)

Finance and microcredit

General

5. Do you get additional income from loans? (banks, neighbors, friend etc.)
6. Do you have any experience with micro credit? (What do you think about microcredit?)
7. What kinds of microcredit do you know (can you describe the types?)?
8. Do you use microcredit or have you used it? (if no, go to page 2 of the guide)
9. What was your reason to get the credit? (to invest in your farm or other activities?)

Process of obtaining the loan/access

10. Where did you get the microcredit?
11. Can you describe the process of obtaining the loan?
12. What are the conditions of the loan?
13. What do you think about the conditions of the loan? (repayment conditions etc.)
14. What do you consider pro's and con's of microcredit?
15. Did you consider different microfinance institutions to get a loan?
16. Did you experience any difficulties in obtaining the loan?
17. Do you know others who use micro credit?
18. Why do you think they use it?
19. Do you know someone who cannot get microcredit? (Why do you think that is?)
20. Is there anything they could do to get it?
21. Do you think it is a problem to them?

Utilization and practices

22. What did you use the money on?
23. Do you know what other people using microcredit spend the money on?
24. Has the loan changed something on the farm? Changed some of your practices? (can you give examples?)
25. Has microcredit increased your income? If yes, How?
26. If yes, what did you spent the increased income on? (investments?)
27. Would you like to take another microcredit loan?
28. If you imagine the farm in 10 years, how does it look like? (assets, land)

IF NOT OBTAINED A MICROCREDIT LOAN, ASK QUESTIONS LISTED BELOW

1. Why do you not use micro credit?
2. Is it currently possible for you to obtain microcredit?
3. What do you consider pro's and con's of microcredit?
4. If you imagine that you would take a loan, where would you get it? And why there?
5. What would you spend the money on?

Appendix 3: SSI Guide (Institutions)

Name of Institution/Agency: _____ Date: _____

Address & GPS coordinates: _____ Type of Institution: _____

Time: _____ Name of employee: _____

Position of employee: _____

KU students present: _____

Kenyan students present: _____ Duration of interview: _____

Institutional goals/mission statement:

1. What is this institution hoping to achieve with the services that it provides?
 - Profit seeking?, Agricultural development?, Entrepreneurial activity/small businesses?, Improving livelihoods, *improving social and environmental sustainability?*, etc.

Basic institutional information:

2. Regional where their services are provided?
3. How is the service provided/extended to the people/farmers?
 - Mobile phones, on-ground agents, etc.
4. What types of services does the institution mainly provide?
 - (specialty), credit, insurance, savings
5. Which type of service that you provide do people/farmers use most?
6. What are the requirements for people/farmers to receive credit?
 - What prevents people/farmers from getting credit?
 - Collateral?
7. Draw/list the process/road map of receiving credit (during interview with subject)
8. Numbers/data on how many people/farmers are using the service?
 - Based on the timing of their services (fiscal year, quarterly, annually, etc.)

In-depth discussion:

9. Which type of people/farmers are applying for credit?
10. Why do people/farmers say they take loans?
11. How many people in the same family can get credit?
12. What are the requirements for the use of the credit, set out by the institution?
13. Does the institution monitor how credit is being spent by people/farmers?
 - If so, how is that done?
14. Repayment schemes of credit?
15. What are the penalties for not paying back credit?
16. What incentives does the institution provide to attract people/farmers to credit?
17. Collateral (land titles)?
18. What is the finance market competition for this institution?
19. Does the institution promote/advertise itself in the community?
 - If so, how is this done?

Appendix 4: PRA and Focus Group Guidelines

PRA GUIDELINES

PRA mapping with individual farmer (during/after SSI?):

1. Have the farmer to draw a map of the farm layout and point out assets (where is the money most present)), investments/credit (microcredit specific). Improvements (what areas are lacking, where do you see need for improvement, where are the biggest problems). Incorporate some kind of ranking of important assets, financial expenditures. After the map, ask the farmer if she/he could imagine a scenario, where she/he would consider obtaining credit.

Outcome: identify the main costs on the farm, identify where the micro credit is spend, identify problems and potential future investments and how this might be linked with microcredit.

PRA with group of farmers (During/after focus group):

1. Spending exercise: divide people into groups of two to three, provide them with a certain amount of shillings and ask them to prioritize, what they would use the money on. Give them a bit more money and see, what they would then like to do with the money.

Outcome: observe discussions on, what practices/assets are most important on a farm, and what they might want to invest in, if they had more money.

PRA on historical overview of region with elders

Making a timeline including shift in land use, popping up of microfinance institutions, mobile network, climate, important happenings.

Outcome: Gain further understanding of the context in which microfinance institutions evolved over time and other major happenings in this time which might influence farmers' agricultural practices and behaviour towards microcredit.

FOCUS GROUP GUIDELINES

Thank the people for coming, explaining the purpose of our research and how this activity helps us to answer it, explain the activity and how long it will take approximately, ask if something is still unclear.

Group with people who have obtained microcredit:

1. What is microcredit to you? (is it popular, why do you think so?)
2. What types of microcredit do farmers use?
3. How can you access microcredit (maybe more like who can get access to what and why)
4. Discuss pro's and con's of microcredit, including requirements
5. What could be improved in the microcredit system
6. What do people use credit on?
7. How do microcredit affect/change peoples lives? (what possibilities can it create, and can it have negative effects?) (re-formulate)

Group with people who have not obtained credit:

1. What do you think about microcredit?
2. Why do you think people use it and on what?
3. Why don't you use it?

Mixed group of people who have and who have not obtained credit:

1. What are pro's and con's of microcredit?
2. How can microcredit affect people's lives (negative + positive)

Appendix 5: Timeline

DATE	ACTIVITIES			PEOPLE PRESENT	SUPPLIES NEEDED	NOTES
	*MORNING (9-12)	AFTERNOON (12-17)	EVENING (after 17)			
01/03/18	Meeting kenyan students at Wida Motel	Planning, pilot testing (questionnaires, SSI's), schedule outlining	Group work: results of the day, planning the day after	All	Interview guides, synopsis draft	
02/03/18	Departure from Othaya; grocery shopping	Check-in with the host families. Assess the area and take a walk	Group work: results of the day, planning the day after	All	Notebook	
03/03/18	Wangari Maathai Day	Planning out meetings and contacts for the interviews. Print: interview guides and questionnaires in Othaya	Group work: results of the day, planning the day after	All	Documents to print - laptot: questionnaires+in interview guides	
04/03/18	Church	Pilot test questionnaires/SSI. Go on tour/walk with farmers?	Group work: results of the day, planning the day after	2/3 groups	Questionnaires, pens, notebooks, recorders, GPS	Nice clothes for the church
05/03/18	Questionnaires + walk with farmers + identify possible respondents for SSI (get contact info)	Questionnaires	Group work: results of the day, planning the day after	2/3 groups	Questionnaires, pens, notebooks, recorders	stay with the families
06/03/18 Bday Katrine	Questionnaires + walk with farmers + identify possible respondents for SSI and historic PRA (get contact info)	Questionnaires	Group work: results of the day, planning the day after, categorize the farmers	2/3 groups	Questionnaires, pens, notebooks, recorders	stay with the families
07/03/18	SSI Institution, historic PRA	SSI institution	Group work: results of the day, planning the day after, transcribe	2/3 groups	Interview guides, pens, notebook, recorders, poster paper, markers	Nice clothes for officials
08/03/18	SSI farmers, mapping PRA	SSI farmers, participant observation	Group work: results of the day, planning the day after, transcribing	2/3 groups	Poster paper, pens, tape?, GPS, voice recorder	

09/03/18	SSI farmers	SSI farmers	Group work:results of the day, planning the day after, transcribing	2/3 groups	Poster paper, pens, tape?, GPS, voice recorder	
10/03/18	Focus group, spending exercise PRA	Focus group	Group work:results of the day, planning the day after, transcribing	2/3 groups	Notebooks, paper, pens, voice recorder, GPS	
11/03/18	Time buffer	Prepare presentation	Prepare presentation	All		
12/03/18	Presentation (?)	Presentation (?)	Group work:results of the day, planning the day after, transcribing	All	poster	
13/03/18	Time buffer	Leave Othaya and back to Nairobi	Nairobi	All		BYYYEE :(

* Every morning starts with a debriefing session on what to do by whom that day, clarify any uncertainties, makes sure who takes what.

Appendix 6: Research Matrix

Overall Objective	Immediate Objective(s)	Sub-question	Activities/ Methods	Outputs	Inputs
How does access and utilization of formal or informal rural microcredit influence agricultural practices of farmers in Othaya	1. What are the current sources and user characteristics of microcredit among farmer households in Othaya region?	1.1 What types of microcredit do farmers use?	Questionnaires SSI	Visual overview of microfinance institutions (if possible link to identified household types)	1-2 interpreter, 2-4 students, notebooks, pens, hardcopy method guides, GPS
		1.2 How many households use microcredit?	Questionnaire Data from providers	Quantifiable output in absolute number and percentage 2 outcomes: 1 from provider and 1 from our questionnaire	
		1.3 What characterizes households that use microcredit?	Questionnaire GPS data	GPS: Map with spatial distribution of households linked with questionnaire variables and topographic data. Graphs with correlation curves	
		1.4 What are the main incentives for obtaining microcredit?	SSI PRA	PRA: Different identified incentives and ranking of incentives	
	2. In the context of microcredit and smallholder agriculture, how is access determined?	2.1 What factors can prevent access to a loan?	SSI PRA	PRA: farmers and research team identify factors together and farmers rank them afterwards according to importance PRA: ask farmers to map the steps of obtaining access to credit. Through SSI gain further insight in strategies of choosing different microcredit services over the other and why and how factors prevent access to credit	1 interpreter, 3 students, papers for mapping, different colours of markers, printed guide of PRA method, notebook
		2.2 What mechanisms do farmers use to claim credit?	SSI		

3. What are usage requirements for smallholders receiving credit, set out by the microfinance institutions and what effect does this have on agricultural practices?	3.1 What usage requirements are set out by the microfinance institutions?	SSI with MFI	List of usage requirements of MFI	1 interpreter, 3 students, notebooks, pens, recorder, hardcopy, method guide
	3.2 What usage requirements influence the farmers' choice of microcredit institution?	SSI with farmers PRA	List of usage requirements of farmers and reasoning behind choice Rank MFI with farmers based on a balance between identified advantages and disadvantages of usage requirements Through SSI gain further insight in strategies of choosing different microcredit services over the other	
	3.3 (How) Does usage requirements affect land use practices?	SSI with farmers Participant observation	Identify possible links between usage requirements of chosen microfinance institution and land use practices.	
	4. How is the utilization of microfinance manifested in agricultural land use practices?	Participant observation Questionnaire PRA; input and output flow SSI GPS	PRA input output flow provides a visual overview of microcredit spending PRA about walking with farmer through the farm, pointing out the assets he spend microfinance on Identify from questionnaire different categories on what agricultural practices farmers spend money. GPS: Spatial distribution of different categories of credit spending and relate to topography SSI more in depth about in what way microfinance has influenced farmers decisions, practices and farmer outcomes	
				1-2 interpreter, 2-4 students, notebooks, pens, hardcopy, method guides, GPS
				1 interpreter, 3 students, notebooks, pens, recorder, hardcopy, method guide

Appendix II - Overview of applied methods

Methods used during the field work include the following:

- GPS mapping of microfinance institutions and questionnaire respondents
- 50 questionnaires
- 18 semi-structured interviews of which 13 with farmers and 5 with representatives of different microfinance institutions (Biashara SACCO, Agricultural Officer of Nyeri South county, Family Bank, KTDA, Taifa SACCO)
- 3 transect walks
- 2 focus group discussions
- 2 PRA preference ranking exercises (appendix IV for an example)
- 1 PRA pros and cons of institutions exercise (appendix V for an example)
- 2 PRA imaginary loan investment exercises (appendix V for an example)
- 5 PRA farm asset drawing exercises (appendix VI for an example)
- 4 PRA farm income and expenditures exercises (appendix VI for an example)

Appendix III - Revised questionnaire

We have edited the questionnaire after pilot testing it. The questionnaire below is the result of this and is the one used to obtain the data used in this report.

Date: _____ Location: _____ Time: _____

Subject name/number: _____ Translator: _____

Students present: _____

GPS coordinates: _____

Explain purpose of questionnaire and the content of the questionnaire (personal information, financial information).

Personal information

1. Age (please write): _____ years old
2. Gender:
 - a. Male
 - b. Female
3. Current marital status:
 - a. Single
 - b. Married
 - c. Widowed
 - d. Other, please specify: _____
4. What is your highest level of completed education:
 - a. None
 - b. Primary School
 - c. Secondary School
 - d. Tertiary (diploma, certificate, artesian)
 - e. Bachelor Degree
 - f. Master Degree
 - g. Other, please specify: _____

5. What is your current occupation, **it can be more than one**:
- Small-scale farmer
 - Student
 - Housewife
 - Off-farm employment (please specify): _____
 - Unemployed
 - Other, please specify: _____

Household information and assets

6. How many people are permanent residents of the house (please write): _____ people. (household = those who pool resources and share a dinner every day)

7. What are the main income sources for your household? **It can be more than one**: (e.g. Crop farming, Livestock, Remittances (family support), Government cash transfer (i.e. pension), Gifts, Business, Casual labor)

Income source	Estimated amount	Per...? (week, month, year)	Total	Comments

8. How much land does your farm cover in acres? _____ acres

9. How many animals do you have? (you can select multiple answers) Please indicate how many in the space provided.

- a. Cow: ____
- b. Chicken ____
- c. Goat: ____
- d. Pig: ____
- e. Other, please specify: ____
- f. None

10. Do you grow trees? If yes, please list them below:

Trees	Number	Comments
Eucalyptus		
Cider		
Grevillea (Australian oak)		
Macadamia		
Mango		
Avocado		

Agricultural practices

11. What are the three main crops grown on your farm?

Crop	Acreage

12. What agricultural inputs do you use?
- Chemical fertilizers (e.g. NPK)
 - Chemicals (Pesticides, herbicides, etc.)
 - Manure
 - Agroforestry
 - Other, please specify: _____

Financial Information

13. Have you or any member of your household ever taken a loan for agricultural purposes, including financial aid of any source? If yes, fill out the table, if no, proceed to question 14.

From where	When	Who	Amount in KShs	Collateral needed?

14. If answered no for question 13, why was the loan or financial aid of any source not taken?

- It was too risky
- I did not need it
- I couldn't obtain it
- I don't know how to apply for it
- I don't know where to apply for it
- Others, please specify _____

15. Concerning the most recent loan/financial aid of any source, please elaborate **on its purpose** and **its share** in percentages?

Purpose	Share of loan/financial aid of any source in percentages OR KShs

Appendix IV - Pseudonyms SSI and informal conversation participants

We have given pseudonyms to all of the respondents that were mentioned throughout the report, in order to keep them anonymous. This was important, because everyone that participated in our methods and their associated responses must be treated ethically and with the utmost respect.

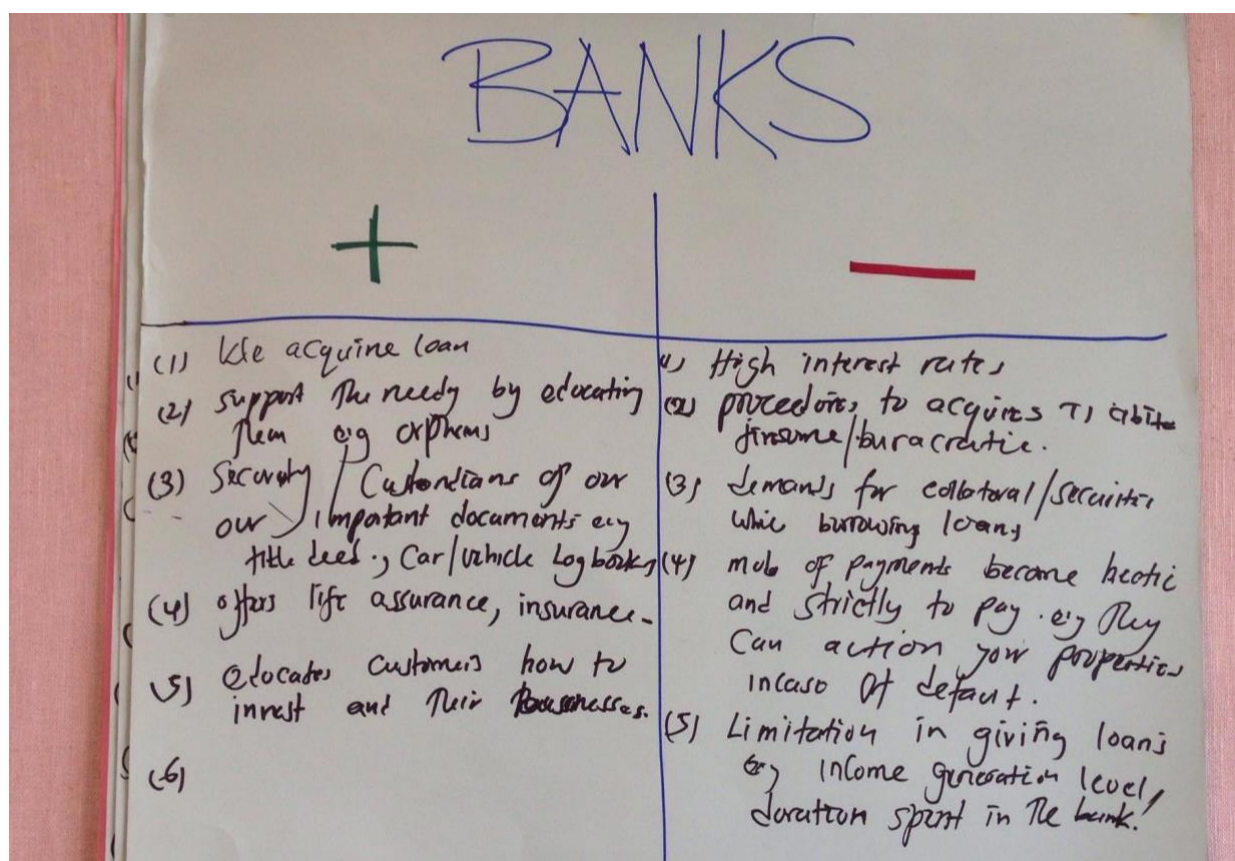
Pseudonym	Gender	Age	Occupation	Method	Date
Joan	Female		Farmer	SSI	07.03.2018
Mary	Female	52	Farmer	SSI	09.03.2018
Michael	Male		Hig-school teacher, tea farmer	Informal conversation	04.03.2018
Thomas	Male	56	Farmer	SSI	06.03.2018
Margaret	Female		Farmer / Small business owner	SSI	07.03.2018
Geoffrey	Male		Farmer	SSI	06.03.2018
Maureen	Female	30	Farmer	SSI	07.03.2018
Elizabeth	Female		Livestock farmer	SSI	07.03.2018
Grace	Female	52	Farmer / Small business owner	SSI	07.03.2018
Jason	Male		Hotel owner / farmer	Informal conversation	07.03.2018

Appendix V - PRA results focus group discussion

The table below shows the results of the focus group discussion with the SHG. It shows the preference of investment when two investment purposes are compared.

	Livestock	Fertilizer	Water tank	Seeds (maize, beans...)
Livestock				
Fertilizer	Livestock			
Water tank	Water tank	Water tank		
Seeds (maize, beans..)	Livestock	Seeds	Water tank	

During the first focus group discussion, pros (+) and cons (-) of microfinance institutions we discussed and written down by participants, an example of this exercise can be found below.



During the first focus group discussion, people were given an imaginary loan and were asked to list investment purposes. An example of this exercise can be found below.

LOAN AMOUNT: 100.000 KSH	
Repayment in 2 years, no interests	
EXPENSE	AMOUNT
100 poultry (chicken)	50000
Building shed	15000
Food for feeding poultry	15000
Labor	20000
Buy 2 calf	20000
Building shed	20000
Food for feeding	50000
Labor	10000
Buy 5 goats	25000
Building shed	20000
Food for feeding	45000
Labor	10000
Agribusiness (growing spinach, cabbage, tomatoes)	
Plant vegetables:	
- buying seedlings	5000
- land preparation	6000
- manure	20000
- planting	10000
- fertilizers, spraying on seedlings	20000
- weeding	14000
- harvesting and transportation to the market	25000

During SSIs some farmers were asked to draw ones farm and an overview of the input and output flows in terms of money on the farm. Below an example of these exercises is shown.



Appendix VII - Coding method used for analysing data

To analyse the data we have coded our SSI data and the data from the focus group discussions. We came up with the following codes: Access, expenditures, future investments, farm assets & characteristics, requirements influence farmers choice, institution requirements, challenges, and perception/opinion of microcredit. Extracting all the coded data and grouping it accordingly, we made summaries for each code category. Below an example of a transcribed and thereafter coded SSI.

SSI	1.Access
06/03/2018	2.Expenditures
	3.Future investments
Name Interviewee: John Macharia, 77	4.Farm assets & characteristics
years old, man.	5.Requirements influence farmers choice
Translator: Maureen	6.Institution requirements
Students present: Elmah, Signe, Aveline	7.Challenges
	8.Perception/opinion of microcredit

He has worked in construction for most of his life. Now it is up to the young men to work in construction.

Farm: "I am just a small-holder" 2.9 acres. He used to have cattle and he still does. One died of fever. He has another farm somewhere where he has planted napier grass. "I want to do it differently". E.g. he wants to turn the maize into silage to store it for the future. He has one storage for silage. He also wants to have one mother cow. He doesn't want to run up and down all the time to his other farm to cut the napier grass for his cattle. "We think outside of the box, we don't want to be boxed-up".

He has banana trees, which he supports physically because they tend to fall down with strong wind. He has two goats. He has been a farmer for around 8 years but not really serious according to him.

He belongs to a group of old men who do some charity work on Sundays. Difficulties on his farm are weeds and "I try to minimize the challenges". He doesn't have a pension and lives alone. One of his sons lives and works in USA, the other son is a teacher in Kenya When he was working in Nairobi in the construction he kept his farm on non-active. He doesn't have a loan; you need collateral for that. At his other farm he has trees which he sells to a contractor and he sells other farm products like maize to get cash money.

Appendix VIII - Recommendation poster feedback meeting Othaya

During the feedback meeting in Othaya, we presented our ideas on microcredit in the region as can be seen on the picture below.

