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Access and Utilization of Microcredit among Farmers in Kibugu, Kenya

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Abstract

Microfinance is generally presented as a catalyst to poverty alleviation and the development of agriculture in Kenya. This literature argues a lack of ability to obtain credit and simultaneously keeps people in poverty and is a barrier to the development of agriculture. Since the 1980s, microfinance activities have proliferated in Kenya. This report seeks to analyze the role microfinance, specifically microcredit, plays in the alleviation of poverty and agricultural development in Kibugu, Kenya. Questionnaires and semi-structured interviews were used to collect data on farmers and microfinance institutions (MFIs). Information collected was regarding access and utilization of microcredit, as well as the structure of the MFIs. The data is analyzed and discussed according to the Sustainable Livelihood Framework (SLF) and the Theory of Access (ToA) with regard to earlier literature. Results suggest most farmers have the ability to obtain credit from some level of microfinance institution. Furthermore, economic, natural, and physical capitals play a substantial role in the mediation of farmers' ability to benefit from credit. Most of the microcredit expenditures are utilized on educational fees and agricultural inputs. Investment in non-income generating activities and farmers' lack of financial literacy, coupled with high interest rates and short-term loan repayment schemes, contribute to high rates of default and may trap farmers in a debt cycle. Microcredit enables farmers to make short-term oriented purchases and investments, however, microcredit does not necessarily contribute to the long-term alleviation of poverty or the development of agriculture in Kibugu, Kenya.

Keywords: *microcredit, access, utilization, debt cycle, Sustainable Livelihood Framework, Theory of Access.*

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Introduction

Almost half of the population in Kenya lives below the poverty line (Lock et al., 2016). Many of these poor Kenyans rely on agriculture to survive; agriculture accounts for one quarter of the country's GDP and provides food for approximately 80% of the country's rural residents (Republic of Kenya, 2017). The Kenyan government views microfinance as a potential tool to simultaneously alleviate poverty and develop the agricultural sector (Republic of Kenya et al, 2017). Microfinance, small-scale financial activities including credit, leasing, and insurance, is designed to alleviate poverty particularly for the most disenfranchised of society; women and the very poor (Rahman et al, 2010). The United Nations Sustainable Development Goal Number 1, "To end poverty in all forms everywhere", highlights equal access to microfinance as a key target to achieve this goal (United Nations Development Programme, 2019). Microcredit is particularly the small-scale loan aspect of microfinance.

Microcredit supposedly alleviates poverty because low-cost loans are made available to people who are typically denied credit because they are considered "high-risk" and "unbankable" by traditional financial institutions. Supposedly, if able to obtain microcredit, these marginalized people will be able to increase their income, become financially stable, and create employment opportunities for others (Kaburi et al., 2013). The Kenyan government promotes microcredit for poor farmers because ideally through microcredit-enabled investment, these farmers will lift themselves out of poverty through investments in agriculture, simultaneously reducing poverty and developing the agricultural sector (Republic of Kenya et al, 2017). Thus, it is important to discover if Kenyans are *actually* lifted out of poverty through microcredit and if microcredit investment *actually* develops the agricultural sector.

Approximately 120 kilometers northeast of Nairobi in Embu County is the rural village of Kibugu. The research team entered Kibugu with the goal to provide insight into farmers' access and utilization of microcredit. A variety of microfinance institutions (MFIs) with different requirements to obtain microcredit exist in Kibugu and nearby Embu Town. However, access to microcredit goes beyond the ability to obtain a loan. Ribot and Peluso's Theory of Access (ToA) defines access as the "ability to derive benefit from things"; this paper will discuss farmers' access to microcredit with this definition in mind (Ribot and Peluso, 2003). Additionally, the Sustainable Livelihood Framework (SLF) situates the data in a wider context. The research objective can be summarized by the following:

Examine farmers' access to and utilization of microcredit in Kibugu, Kenya.

Background

In the 1980s, the Grameen Bank in Bangladesh demonstrated long-term feasibility of microcredit as an effective tool for poverty alleviation; providing financial capital to the poor enabled them to lift themselves out of poverty (Rahman, 2010). Microfinance schemes were first introduced in Kenya in the 1980s and have proliferated since (Kaburi et al., 2013). Despite the growth of the Kenyan microfinance sector, approximately 65% of Kenyans, particularly women and the very poor, many of whom are farmers, are excluded from formal financial institutions (Kodongo et al., 2016). The aim of microfinance is to enable these disenfranchised people to obtain credit.

During the past decades there has been great structural, political and economic reconstructions, which have led to improvement in social development, economic gains and political structures (World Bank, 2018). The biggest political transformation after the country's independence took place in 2013, when a new constitution shifted power towards a decentralized government (Cheeseman et al., 2016). This implies governance on two levels: national and county level.

Prior to the Microfinance Act of 2006 which was intended to grow microfinance through the formalization of MFIs, there was no legal regulatory structure for MFIs to operate within (Omino, 2005). The Microfinance Act, along with other supporting legislations, created a three-tiered regulatory structure with the different tiers characterized by differing levels of formality (FSD Kenya et al., 2012). The regulation of microfinance brought the sector from its non-profit roots closer to the traditional profit-motivated realm of Kenyan finance.

It is important to note the typical structure of microcredit loans. These loans, with 75% issued to individuals and only 25% issued to groups, are typically characterized by high interest rates and short-term repayment periods. Higher interest rates, larger loan amounts, and individual loan schemes are all significant factors in determining loan default rate (Kodongo et al., 2013). Notably, the Kenyan microfinance sector has become increasingly competitive (FSD Kenya et al., 2012). In Embu County, approximately 70% of the population derives their livelihood from crops and livestock.

Figure 1. Embu county location in Kenya (Wikipedia, 2018).

Methods

With limited time in the field, only questionnaires, semi-structured interviews (SSIs), GPS-mapping, and participatory observations were utilized to gather data on farmers and MFIs (see Appendix 2 for overview). With limited data gathered on chamas, defined as informal groups, the research mainly focused on formal microfinance institutions. Additionally, the researchers intended to conduct focus group discussions with farmers and other relevant key informants. Due to organizational difficulties and time limitation, the focus group discussions were not conducted.

Using geographic information systems, the spatial distribution of the farmers' residencies were mapped within seven sub-locations in Kibugu for questionnaire sampling purposes. The MFI key informants were chosen within Embu county. Additionally, farmers and agricultural extension officer SSIs were conducted within Embu County. The data collection was supported by translators, who also functioned as guides in the area.

Questionnaires and GPS mapping

Questionnaire interviews were conducted with farmers in Kibugu. The questions concerned demographics, agricultural practices, assets, finances, MFIs, microcredit and its uses. Pilot questionnaire interviews were conducted prior to the finalization of the questionnaire to exclude unnecessary, complex or confusing questions. The final version of the questionnaire can be found in Appendix 6. The geoinformatic platform ArcGIS was used to get a broad and consistent distribution of informants in Kibugu. Seven adjacent sub-locations in Kibugu were chosen (Kathakwa, Kibugu A, Kibugu B, Kamavindi, Kiangucu, Kithiria and Gathongo) and a grid (10x5) was placed on every location. The purpose was to administer a questionnaire in every third gridbox for every sub-location. Google Maps were used to pin out relevant coordinates and guide the interviewers to the correct locations. GPS coordinates were read and recorded using the mobile phone app My GPS Coordinates.

The method was altered due to variance in topography and the geographical distribution of households (Figure 2). Questionnaires were conducted over the course of two days. Two translators helped the researchers find the locations and translate the questions into the local language. Respondent replies were recorded by the researchers. In total, 50 questionnaires were conducted.

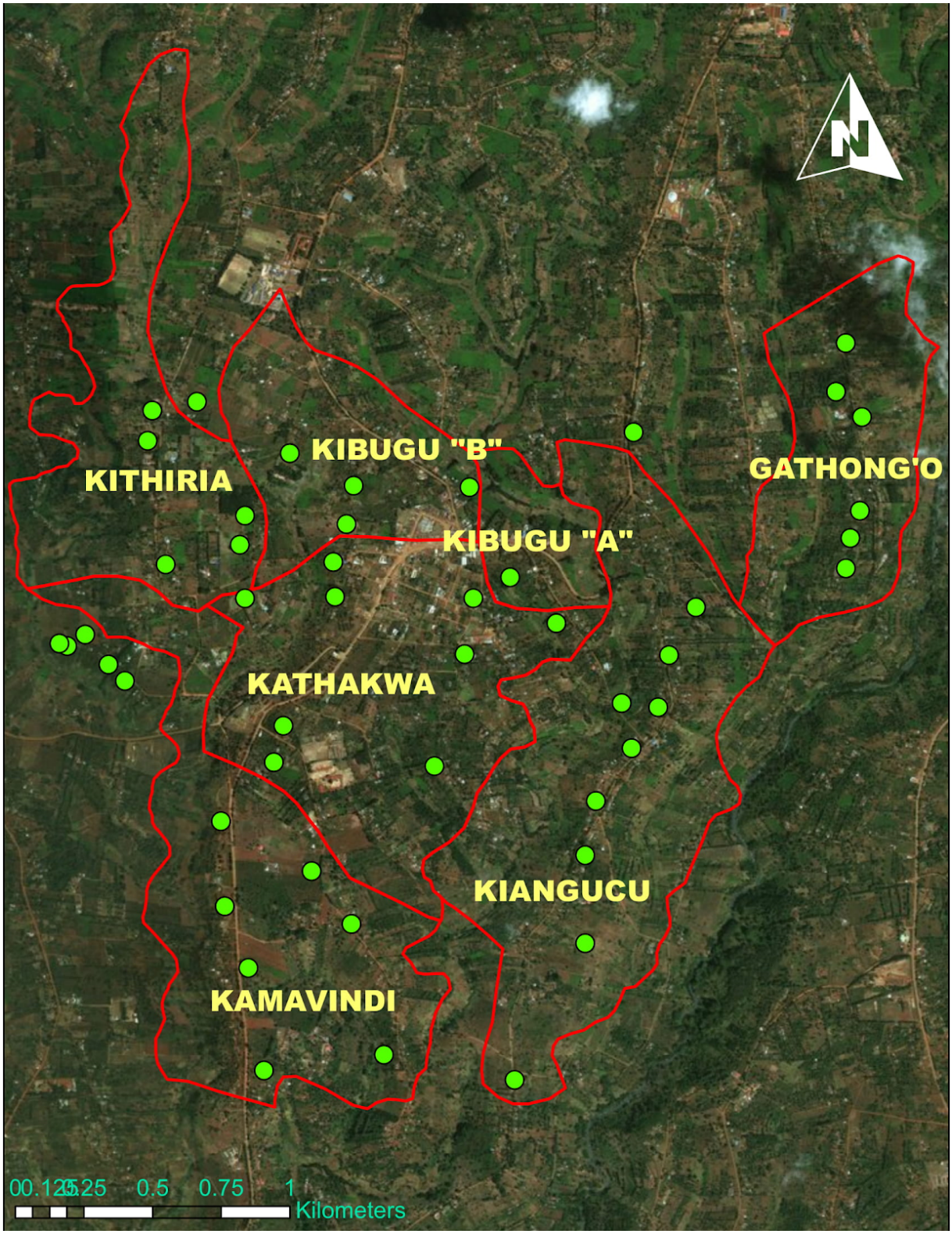

Figure 2. Map of the seven sub-locations Kathakwa, Kibugu A, Kibugu B, Kamavindi, Kiangucu, Kithiria and Gathongo (illustrated in red) within Kibugu. The green spots represent the locations of the households where questionnaires were conducted.

Semi-Structured Interviews

In order to ascertain a more comprehensive view on the access and utilization of microcredit, SSIs were conducted with a range of informants. The interviews were structured around a set of open-ended questions. The benefit of the SSI approach is it allows for the interviewee to fully express their thoughts and opinions over a variety of topics without constricting the interviewee to a certain set of replies. The SSI questions conducted with the formal and informal MFIs can be found in Appendix 3 and Appendix 4, respectively. The SSIs were carried out over four subsequent days. Each interview lasted for approximately 30 to 60 minutes.

Six farmers were chosen among the questionnaire participants. These were farmers who demonstrated themselves as potential sources of key information related to the study objectives. For instance, they were active microcredit recipients, members of informal groups, farmers unable to take microcredit, or farmers with key insights into microcredit. Employees/members of MFIs and extension officer were also interviewed. A total of 18 SSIs were carried out.

Participatory Observations

Participatory observations were used as a complimentary method during the field research. Conversations with host families and other residents of Kibugu contributed insights into MFIs and farmers' access and utilization of microcredit.

An Analytical Framework

The Sustainable Livelihood Framework (SLF) provides a paradigm for analysis and a common language for development researchers (Scoones, 2015). A key component of the SLF is "livelihood resources", categorized as different types of capital. The SLF uses the term "capital" to denote a wide range of resources. Microcredit, understood in terms of the SLF, is a type of economic capital. However, Ribot and Peluso's Theory of Access (ToA) use "capital" to particularly refer to what the SLF calls "economic", "physical", and "natural" capital. Further, the ToA specifically provides a way of thinking about access; they redefine access as "the *ability* to derive benefit from things" (Ribot and Peluso, 2003). While the ToA is a tool to understand how access to microcredit is mediated through a variety of mechanisms, the SLF situates microcredit within a wider scope of contexts, institutions, livelihood resources, strategies, and outcomes.

Ribot and Peluso theorize a "range of powers—embodied in and exercised through various mechanisms, processes, and social relations" cohese to form a "bundle of powers", which different actors wield as determinants of access (Ibid.). Access to microcredit is mediated through the interaction between farmers' and MFIs' bundles of powers. This interaction between farmers' and MFIs' bundles of power are what Ribot and Peluso call "structural and relational mechanisms of access"; these are the ways through which "the ability to benefit from resources is mediated" (Ibid.). In the Results section, five of Ribot and Peluso's mechanisms are discussed; "access to capital", "access to knowledge", "access to authority", "access through social identity", and "access via negotiation of other social relations" (Ibid.). The ToA allows for a nuanced analysis of farmers' access to microcredit.

To situate the ToA within the SLF, the mediation of access to microcredit can be thought of as taking place between the SLF's "livelihood resources" and "institutions and processes" to result in certain "livelihood strategies" (Figure 4). As Scoones notes, the components of the rest of the SLF are always embedded and effected by local and broader structural context (Scoones, 2015). The context has been discussed in the previous "Background" section.

The second aspect of the SLF are "Livelihood Resources" (Figure 3). Farmers in part derive their bundle of powers from their various livelihood resources. The third aspect of the SLF, "Institutional Processes and Organizational Structures", are outlined in the section on "Institutions". Farmers make decisions to pursue certain activities based on their livelihood resources and their subjugation to relevant institutional powers and processes. These activities are called "Livelihood Strategies"; the fourth aspect of the SLF (Figure 3). In this paper, livelihood strategies are how farmers utilize credit once they obtain access. The results of these farmers' livelihoods strategies are categorized in the fifth and final aspect of the SLF: "Sustainable Livelihood Outcomes" (Figure 3). Essentially, these are outcomes of the farmers' activities. Farmers' relevant livelihood strategies and outcomes in regards to credit will be discussed in the "Utilization of Microcredit and Outcomes" subsection of the Results.

Although it has been subject to a range of criticisms and has its shortcomings the SLF will be employed as a heuristic tool in the analysis of microfinance in Kibugu. (Scoones, 2015). One major criticism of the SLF is it overlooks power relations between actors (Myers et al., 2019). This paper will embed the ToA within the SLF to address its shortcomings (Figure 4). The ToA is used to analyze how farmers' access to microcredit is mediated through different mechanisms of access; the SLF is used to situate these within a larger picture of both access and utilization of microcredit. In

conclusion, the SLF and ToA describes how livelihood resources, mediated through relationships with institutions, can lead to different livelihood strategies and outcomes.

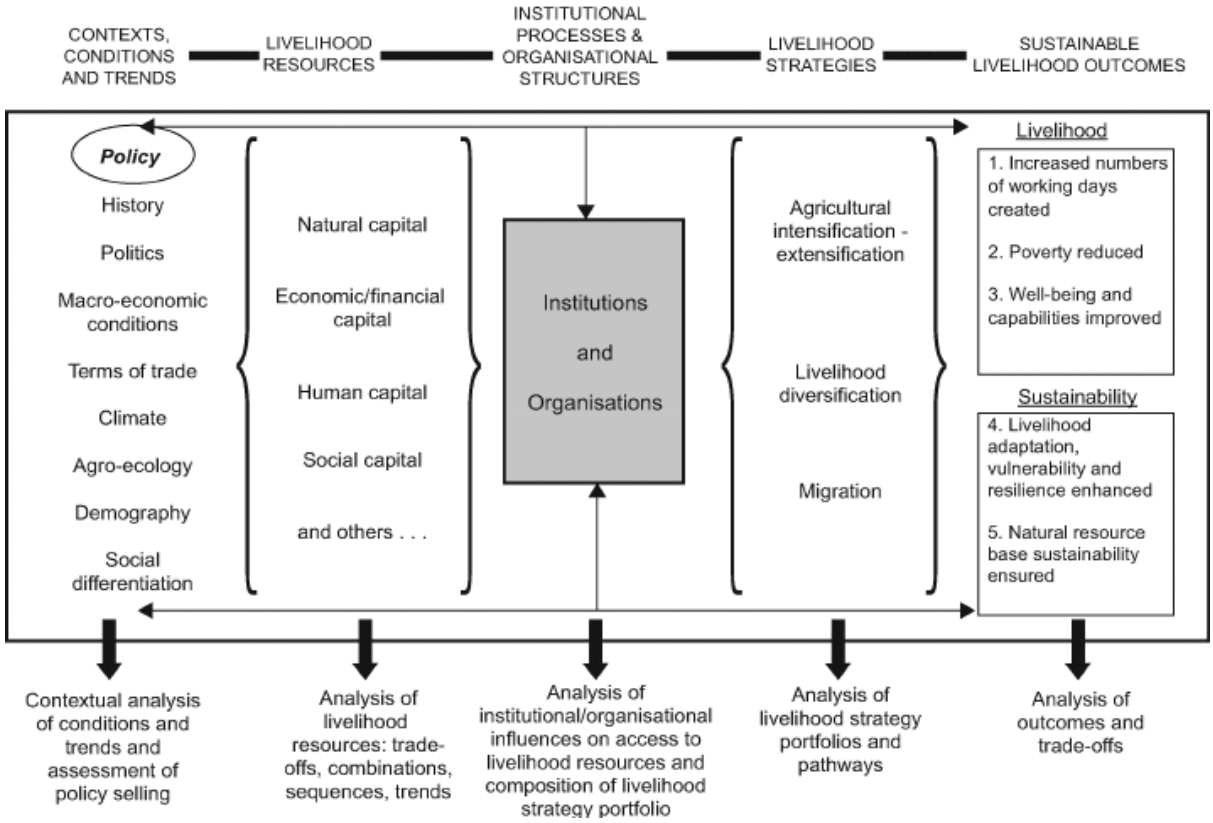

Figure 3. A representation of the Sustainable Livelihood Framework (Scoones, 2015).

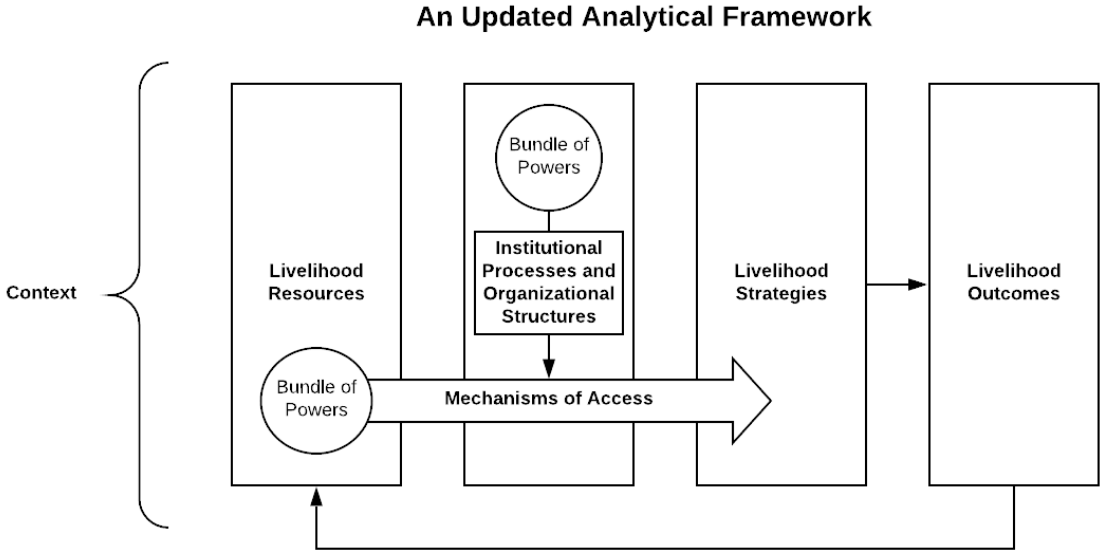

Figure 4. The framework applied in this report. The Theory of Access embedded within the Sustainable Livelihood Framework.

Table 1. The theories applied within the upcoming sections/subsections.

Report Section or subsection	**Theory Applied**
Background	SLF-"Contexts, Conditions, and Trends"
Results - Institutions	SLF- "Institutional Processes and Organizational Structures"
Results - Access to microcredit	ToA- "Structural and Relational Mechanisms of Access" & SLF- "Livelihood Resources"
Results - Utilization of Microcredit and Outcomes	SLF- "Livelihood Strategies" & "Sustainable Livelihood Outcomes"

Results

Institutions

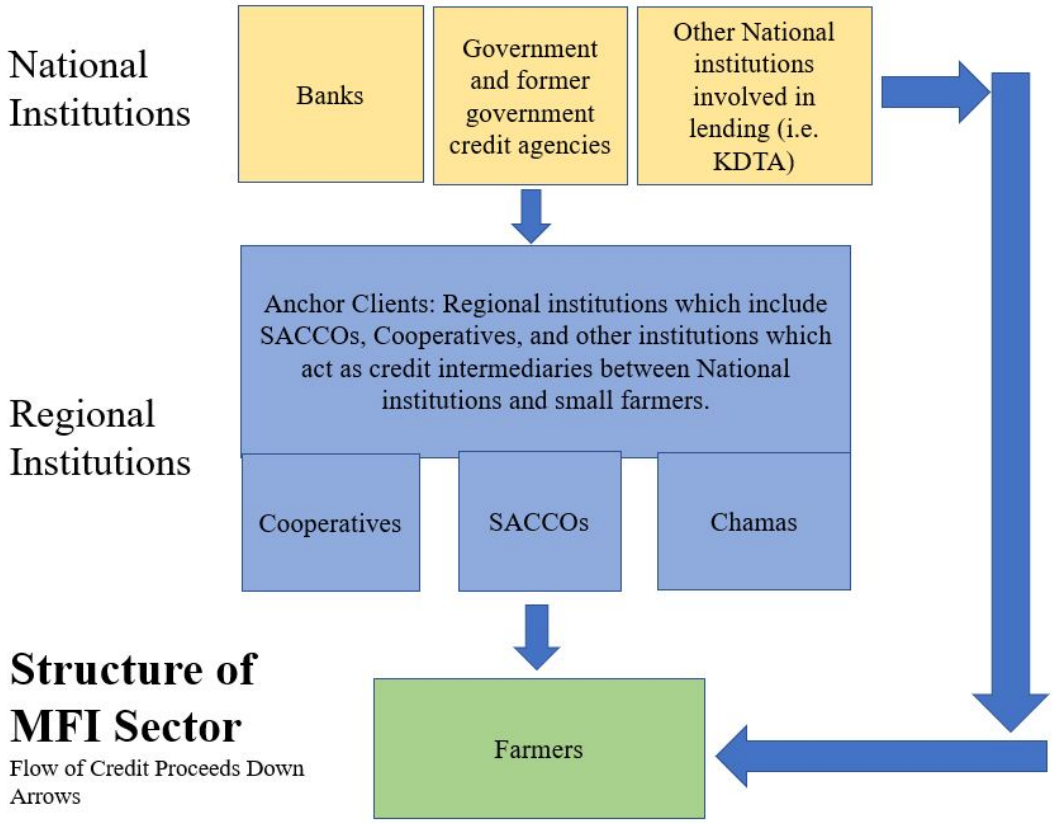

Figure 5: A general structure of the MFI sector is depicted. Credit flows down the diagram.

There are two levels of institutions serving two levels of different clienteles. National MFIs tend to lend to farmers with more capital and to regional MFIs (which in turn lend to farmers with less capital) due to the first clientele's greater degree of capital.The Agricultural Finance Corporation (AFC) terms these regional MFIs which act as credit intermediaries between national MFIs and farmers "anchor clients" (SSI 17, Appendix 1). Regional MFIs tend to lend to farmers with limited capital who secure microcredit through a limited degree of capital, social identity, and networks.

Interviewed national MFIs, which operate branches and conduct business throughout Kenya, include four banks (Musoni Bank, ECLOF Bank, Family Bank, and Equity Bank), one government institution (AFC), one recently privatized former government institution (Commodities Fund), and one SACCO (Greenland Fedha) which is a part of the Kenya Tea Development Agency Holdings (KTDA) and functions similarly to a cooperative in lending (Table 2). All these MFIs, except Greenland Fedha, have requirements to obtain microcredit which leads them to typically lend to anchor clients and farmers with greater degrees of capital (Table 2). The anchor clients, often regional MFIs, lend to farmers with limited capital (SSI 17, Appendix 1).

On the regional level, there are four SACCOs (Nawiri, Faithful Servants, Biashara, and Daima) as well as two farmers cooperatives (Kibugu Farmers Cooperative Society and Dairy Farmers

Cooperative) (Table 3). These MFIs do not have anchor clients; instead most of their business is done with farmers with limited capital and other individuals. The four SACCOs offer credit in the form of microcredit loans; the two cooperatives offer credit in the form of agricultural inputs and cash advances (Table 3). The requirements regional MFIs have make it easy for farmers with limited capital to get a loan.

Generally, national institutions require collateral in the form of title deeds (Table 2). The AFC and Commodities Fund do not accept guarantors whereas the banks may require guarantors (Table 2). These banks may allow guarantors instead of collateral as sufficient security for smaller microcredit loans (Table 3). Regional SACCOs require guarantors to obtain microcredit; larger loans require collateral (Table 3). Notably, the interest rates are the lowest at the AFC and Commodities Fund of all other MFIs interviewed (Table 2; Table 3). The banks and the SACCOs have similar interest rates (Table 2; Table 3). Cooperatives offer credit with no interest; however the credit offered is typically in the from of agricultural inputs. Throughout all of the MFIs, loans repayments schemes were typically required between one and three years, with the longest being five years and the shortest being two months. Savings are typically required to obtain microcredit from a SACCO; the size of the microcredit loan is based on the amount of savings (Table 3). The Kibugu Farmers' Cooperative Society, Greenland Fedha, and the Dairy Farmers Cooperative also require membership to obtain microcredit (Table 2; Table 3). To obtain credit from the Kibugu Farmers' Cooperative Society and Greenland Fedha, the amount of credit is based on the coffee or tea production, respectively (Table 2; Table 3). Similarly, the Dairy Farmers Cooperative requires a productive dairy cow to obtain credit (Table 3). Other MFIs require cash crop cultivation. See the below tables for a comprehensive summary of findings on MFIs. For a detailed analysis of the structure of the MFI sector in Embu County, see Appendix 5.

Table 2: Table depicting six national microfinance institutions with which an SSI was conducted. The table characterizes data from the SSIs; because of the lack of clear structure of the SSI format there are many boxes with information not available (N/A).

SSI Citation #	17	15	7	2	11	6
MFI Name	**Agricultural Finance Corporation**	**Commodities Fund**	**Family Bank**	**Musoni Bank**	**ECLOF Bank**	**Greenland Fedha (MF department of KTDA)**
National/Regional	National	National	National	National	National	National
Clientele	Individuals, Groups, Wholesale Lenders (Anchor Clients)	Farmers and SACCOs, Predominately SACCOs.	Groups of small farmers, SACCOs, cooperatives, KTDA (Anchor Clients).	Individuals and Groups. Predominately women.	Farmers, particularly dairy producers.	Individual tea farmers, predominately female
Offers credit as:	Monetary Loans	Monetary Loans	Monetary Loans	Monetary Loans	Monetary Loans	Monetary Loans
Interest Rate	10%	5-10%	Max 13%	N/A	11%-22%	13%
Loan sizes	approx. 300.000-1.000.000 KSh	N/A	N/A	100.000-3.000.000 KSh	100.000-300.000 KSH for individuals. Loan max 3 times savings.	Loan size calculated by history of tea yields
Collateral	Property Title Deeds	Property Title Deeds	Title deeds as collateral for larger loans.	Loans 300.000-3.000.000 KSh require collateral	Sometimes	N/A
Guarantors	No	No	Small farmers in groups gurantee each other	2 Guarantors	1 Guarantor	Yes
Business plans required?	Yes	N/A	N/A	Yes	N/A	N/A
Specific Crop Required?	N/A	Coffee or Sugarcane	N/A	Cash Crops	N/A	500 tea bushes
Age Requirement	No	N/A	N/A	15-75	N/A	N/A
Credit History Required?	Yes	N/A	Yes	N/A	6 months credit history	N/A
Savings Account or Member Shares Required?	No	N/A	N/A	N/A	Savings	N/A
Other Requirements	Cash flow, Character Assessment.	N/A	Character, Analysis of Crop Market	N/A	National Identity, Character Assesment	N/A

Table 3: Table depicting six regional microfinance institutions with which an SSI was conducted. The table characterizes data from the SSIs; because of the lack of clear structure of the SSI format there are many boxes with information not available (N/A).

SSI Citation #	1	8	13	16	4	12
MFI Name	**Nawiri SACCO**	**Faithful Servants SACCO**	**Daima SACCO**	**Biashara SACCO**	**Kibugu Farmers Cooperative Society**	**Dairy Farmers Cooperative**
National/Regional	Regional	Regional	Regional	Regional	Regional	Regional
Clientele	Individuals and Groups, Predominately female.	Groups of 5	Individuals, Predominately Women--"Men die early"	Individuals and groups	Individual coffee farmers, mostly men.	Individual dairy farmers
Offers credit as:	Monetary Loans	Monetary Loans	Monetary Loans	Monetary Loans	Agricultural Inputs and Cash Advances	Agricultural Inputs
Interest Rate	N/A	1% per month	14.50%	1% per month	No interest	No interest
Loan sizes	Based on savings	N/A	Based on three times the size of savings	N/A	To suit needs of farmers	N/A
Collateral	Loans over 500.000 KSh	N/A	Title deeds as collateral in some circumstances.	Collateral on loans over 200.000 KSh	No	N/A
Guarantors	Yes	Groups of 5 gurantee each other	Yes	Yes	No	N/A
Business plans required?	N/A	N/A	N/A	Yes	N/A	N/A
Specific Crop Required?	N/A	N/A	N/A	N/A	100 coffee stems	Dairy Cow
Age Requirement	N/A	N/A	N/A	18	N/A	N/A
Credit History Required?	N/A	N/A	N/A	N/A	N/A	N/A
Savings Account or Member Shares Required?	Savings	Savings	Savings	N/A	N/A	N/A
Other Requirements	N/A	N/A	Membership shares required	300 KSh to open an acount, must work.	Location, Have farm, follow rules	Productive dairy cow

Access to Microcredit

The ToA is used to analyze farmers' access to microcredit. Farmers, equipped with a variety of livelihood resources, approach MFIs to obtain credit. Access to microcredit is mediated at the nexus of MFIs and farmers. Access to microcredit is analyzed according to five mechanisms; access to capital, access to knowledge, access to authority, access through social identity, and access via negotiation of other social relations.

Access to Capital

Farmers' access to capital is arguably the most important mechanism which shapes their access to microcredit. Farmers' physical and natural capitals often take the form of crops, crop production, livestock, and owned land. Crop production may affect access to capital due to effects on both the farmer and the institution. It may both influence the farmer's decision to seek credit as well as the institutions decision whether to offer credit. For instance, one farmer is a member of Daima SACCO, but choose not to take a loan due to lack of coffee production (SSI 19, Appendix 1). In his opinion, the area of his land was too small to grow enough coffee trees to justify taking microcredit. Thus, crop production, which is inseparably linked to land area, can lead a farmer not to choose to take microcredit.

Natural and physical capital can also affect a farmers' access to loans from the institutional side. Cooperatives often structure membership requirements around a farmer's capital; the Kibugu Farmers' Cooperative Society requires 100 coffee stems, the Greenland Fedha SACCO (which is a department of the Kenya Tea Development Agency Holdings LTD and functions similarly to the other two cooperatives) requires 500 tea bushes, and the Dairy Farmers Cooperative requires a dairy cow (Table 2). This essentially excludes farmers who lack crops (or livestock) from obtaining credit. Additionally, cooperatives determine a farmer's credit offerings based on their recent past production history (SSI 4, Appendix 1).

Land title deeds may be required as collateral, making land an important capital to have access to in order to obtain credit (Table 2; Table 3). All the farmers answering the questionnaire own or rent land; most owned land is inherited (Questionnaire, Appendix 1). Interviews with both farmers and institutions show owned land is a particularly important type of capital when it comes to obtaining microcredit (SSI 14; SSI 17, Appendix 1). This is because many microcredit loans, particularly larger loans and loans from national institutions, often require collateral in the form of land title deeds (Table 2; Table 3).

However, fear of seizure of collateral discourages farmers from obtaining microcredit (SSI 5; SSI 10; SSI 19, Appendix 1). Eight out of 14 farmers who did not obtain microcredit within the last 12 months say this was because microcredit was "too risky" (Questionnaire, Appendix 1). Respondents also expressed the same concern in SSIs (SSI 10. Appendix 1). This fear of losing collateral is justified; many MFIs express the seizure and subsequent auctioning of collateral as a method to recoup losses in the case of microcredit default (SSI 11; SSI 14; SSI 17, Appendix 1). Thus, natural and physical capital in the form of land ownership affects a farmer's ability to obtain microcredit in two ways. On the side of the institution, collateral requirements represent a barrier to farmers' obtaining microcredit. On the farmer's side, an unwillingness to pledge land as collateral limit them from obtaining microcredit (SSI 10, Appendix 1).

Farmers either do not own enough land to satisfy the collateral requirement or, in view of their own scarcity of natural and physical capital, believe it too risky to pledge as collateral (SSI 10; SSI

19, Appendix 1). This is particularly limiting for farmers who want to take larger microcredit loans because it is often these larger loans which require collateral (Table 2; Table 3). As national institutions, for instance the Agricultural Finance Corporation (AFC) and Commodities Fund, predominantly offer larger microcredit with collateral requirements, land is essential to obtain microcredit (SSI 15; SSI 17, Appendix 1). Additionally, because women typically lack access to title deeds, their ability to obtain microcredit is limited by their lack of control over land (SSI 17, Appendix 1). A farmer is unable to benefit from microcredit if they do not take it in the first place, hence physical and natural capital in the form of crops, crop production, and especially land ownership significantly affect farmers ability to access (derive benefit from) microcredit.

A farmer's access to economic capital also plays a major role in their access to microcredit. Almost all farmers strongly agree that a farmer's income plays a major role in determining access to credit (Figure 6), however, a statistical analysis of income level and microcredit is not done due to a lack of data. Many MFIs pose requirements for business plans and financial records in order to obtain a loan (Table 2; Table 3). For instance, the AFC wants evidence of a cash flow; ECLOF Bank and Musoni Bank require business plans (SSI 17; SSI 11; SSI 2, Appendix 1). The AFC requires farmers need current economic activity to obtain a loan (SSI 17, Appendix 1). The requirements for business plans, although not directly linked to economic capital, suggests the need for a coherent business strategy, something which farmers who lack economic capital may not have the ability to produce. However, further data is required to support this conjecture. These requirements are found on the level of national institutions (Table 2).

On the regional level, many institutions pose some sort of membership requirement; without being a member a farmer cannot access microcredit (Table 3). As noted earlier, cooperatives often require capital to be a member (i.e. 100 coffee stems, 500 tea bushes, dairy cow). Oftentimes, to be a member of a SACCO, one is required to both hold a savings account (SSI 13, Appendix 1). The maximum potential microcredit loan is often calculated based on the savings account; often the maximum potential microcredit is three times the size of the microcredit balance (Table 2; Table 3).

Memberships within chamas are also mediated by the ability to make a one-time or regular payments (SSI 5; SSI 10, Appendix 1). For instance, merry go rounds require the members to be able to contribute with the monthly payment that is handed to one in the group (SSI 20, Appendix 1). Additionally, joining women's groups often require a one-time membership fee (SSI 5, Appendix 1). Clearly, farmer's economic capital can limit the ability to join both formal and informal institutions, thus limiting the ability to obtain microcredit and also the size of that microcredit loan.

Interest rates set by MFIs affect a farmer's decisions to take microcredit as well as the results of utilizing microcredit (SSI 19, Appendix 1). First, farmers' views on interest rates will be discussed; this will elucidate their reasoning behind taking microcredit. As a quick aside, the Kibugu Farmers Cooperative Society and the Dairy Farmers Cooperative do not offer microcredit on interest; instead, they give farmers agricultural inputs, payment for which is deducted from the farmer's payout (SSI 4; SSI 12, Appendix 1). Therefore they will not be included in the discussion of MFIs' interest rates.

One farmer states that formal microcredit often have higher interest rates than informal microcredit, which make the latter more attractive (SSI 24, Appendix 1). Interest rates are also a concern for other farmers who thinks they are sometimes too high, especially at the SACCOs (SSI 19; SSI 21; SSI 22; SSI 23, Appendix 1). One farmer sees the SACCOs interest rates as a barrier for farmers to take a loan (SSI 19, Appendix 1).

"Interest payments have made farmers slaves to microfinance institutions"

(SSI 22, Appendix 1).

A distaste for high interest rates is a common sentiment among farmers. Notably, the lowest interest rates found were at the AFC and the Commodities Fund, the two MFIs which seem to do the least amount of lending to farmers who do not pledge collateral (SSI 17, SSI 15, Appendix 1). All other MFIs had yearly interest rates over 10% (Biashara SACCO and Faithful Servants SACCO had monthly rates at 1%) (Table 3). The highest interest rates were at 13% (Family Bank and Greenland Fedha), 14.5% (Daima SACCO), and ECLOF Bank (22%) (Table 2). The interest rates reported by Daima SACCO and ECLOF Bank are confounding; they are both above the current interest rate cap in Kenya (Trading Economics, 2019; Central Bank of Kenya, 2018). These high interest rates are potentially dangerous for farmers taking on microcredit.

As noted, farmers believe interest rates are too high. If a farmer is not able to keep up with loan principal and interest rate payments, they will default on payments. In case of default, MFIs may seize collateral and property, pursue guarantors, or encourage the debtor to reschedule the microcredit loan (SSI 13, SSI 6, Appendix 1). Poor investment strategies, a lack of diversified income, and the misapplication of microcredit may push a farmer to default of loans. High interest rates coupled with the propensity for farmers to default (the Commodities Fund noted a 50% default rate) can lead a farmer to slide into a debt cycle (SSI 15, Appendix 1). The debt cycles describe scenarios in which an individual uses credit to repay a microcredit loan and its' interest, only to go deeper into debt and borrow even more to stay afloat (SSI 14, Appendix 1).

The former agricultural extension officer thinks microcredit is bad for the community because of its tendency to lead farmers into these debt cycles (SSI 14, Appendix 1). Many farmers fall into these debt cycles particularly within the level of informal finance (SSI 5, Appendix 1). Due to the lack of financial regulation and the secrecy of chama organization, interest rates can become exorbitantly high and keep people indebted to chamas (SSI 5, Appendix 1). However, for chama members who do not fall into debt cycles, interest rates earn them money. In the women's chamas the interest rate is paid monthly by all the members obtaining a loan; the sum of all the interest is collected and shared equally by the members at the end of the year (SSI 10, Appendix 1).

Notably, the largest barriers to obtaining a microcredit loan are the collateral and crop requirements; natural and physical capitals. However, when Ribot and Peluso's definition of access is considered, it is apparent economic capital plays a fundamental role in determining access to microcredit. Even though a farmer may be able to obtain microcredit, a lack of economic capital may keep a farmer from being able to keep up with payments on high interest rates leading to debt cycles. Once entered, these debt cycles present a quick avenue to increasing poverty. Thus, the terms of the loan coupled with a farmers' economic capital present major limitations to access. Overall, access to physical, natural, and economic capital are important strands in the bundle of powers which determine farmers' access to microcredit.

Access to Knowledge

Most of the farmers have finished primary school, whereas only 8 have gone beyond secondary school. Farmers' lack of higher education may affect their financial decisions. However, statistical analysis of education level and microcredit is not done due to a lack of data. Many MFIs refer to misapplication of microcredit; a lack in financial literacy may be partially responsible for investments in things which do not generate income within the period of the loan (SSI 17; SS 14, Appendix 1). These sorts of investments can often lead to default and begin or exacerbate a vicious debt cycle. However, training in financial literacy was not emphasized by the MFIs. A few MFIs provide their members with training in agricultural information or literacy in microfinance, whereas

some have training as a requirement for accessing microcredit, but follow ups on the education or training where not highlighted by the MFIs (SSI 11; SSI 16, Appendix 1).

Table 4. Education level of farmers that answered the questionnaire.

Education	Amount of farmers
None	2
Primary school	26
Secondary school	15
Tertiary school	7
Bachelor's degree	1
Master's degree	0
Other	0

Access to Authority

Farmers' have varying degrees of authority within MFIs. Formal MFIs reported not allowing any negotiation regarding different microcredit services (SSI 13; SSI 11; SSI 7; SSI 2; SSI 1, Appendix 1). Farmers have slightly more authority on the regional level than the national level; many SACCOs are initially founded and run by farmers (SSI 1, Appendix 1). Cooperatives allow members even more authority; they are often managed by local farmers (SSI 4; SSI 12, Appendix 1). Chamas present the tightest link between institutional structure and member through the regular elections of key administrative and executive members; thus providing the greatest degree of access to authority for members out of all the MFIs. Despite the increased amount of authority offered to members of chamas, after the initial structuring of the chamas bylaws; members' authority only enables them to influence the elections of key members (SSI 5, Appendix 1). Thus, even in MFIs which allow members the most access to authority, this authority allows only weak influence on their own access to microcredit. Farmers often expressed a wish to exercise power on the regional level; for instance regarding the lowering of interest rates (SSI 20, Appendix 1).

Access through Social Identity

A farmer's social identity plays an important role in determining access to microcredit. Many chamas are created around a specific social identity; for instance, there are teachers' chamas, chamas for retired people, and chamas for people living in specific areas (SSI 5, SSI 10, Appendix 1). Additionally, the Faithful Servants SACCO is affiliated with a specific church (SSI 8, Appendix 1). Access to these different MFIs is mediated through identification with a specific social group.

Age was only found to have a minimal effect on the ability to access microcredit; only two MFIs have age restriction (Table 2; Table 3). However, statistical analysis of age and microcredit is not done due to a lack of data. In the opinions of farmers', gender is not a limiting factor for accessing microcredit (Figure 6). However, as some MFIs requires title deeds, which often is owned by the male, females can have some limitations in obtaining a loan from a formal MFI (SSI 13, SSI 7, SSI 17, SSI 15, Appendix 1). The AFC attempts to have a portfolio with at least a 30% female clientele (SSI 17, Appendix 1). No limitations are expressed regarding the informal groups; even though they mostly consist of female members, there is no hindrance for a man to join (SSI 5, SSI 10, SSI 20, Appendix 1). Alcohol addiction can be an obstacle to obtain microcredit; one farmer believes it to be a major challenge (SSI 19, Appendix 1).

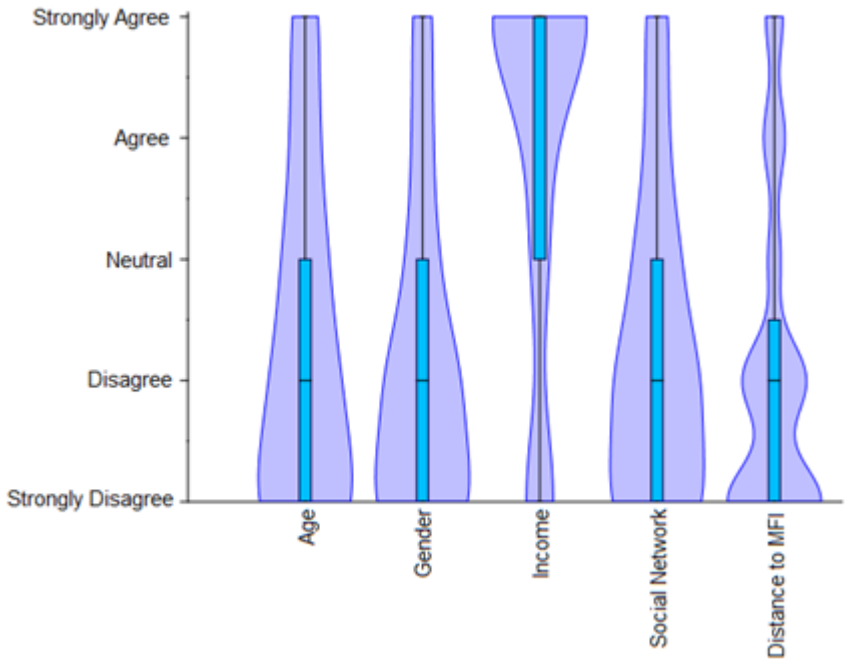

Figure 6. Violin chart of the answers from the question 21 in the questionnaire: "Do you think any of the below mentioned factors impact the ability to get a loan?". Factors are shown on the x-axis and level of agreement on the y-axis.

Access via the Negotiation of Social Relations

According to Ostrom's Rational Choice Theory, reciprocity, reputation and trust are core elements in social relationships (Ostrom, 1998). These three elements can reinforce each other and be enhanced by face-to-face communication and, consequently, positively affect both the levels of cooperation and net outcomes (Ibid.). A chama is a organizational structure which facilitates the formation of the social relationship. The inability to form a social relationship among farmers is a barrier to getting a guarantor; low levels of either trust, reciprocity, or reputation all make it difficult to increase levels of cooperation that could increase the net benefits for both the loan taker and the guarantor.

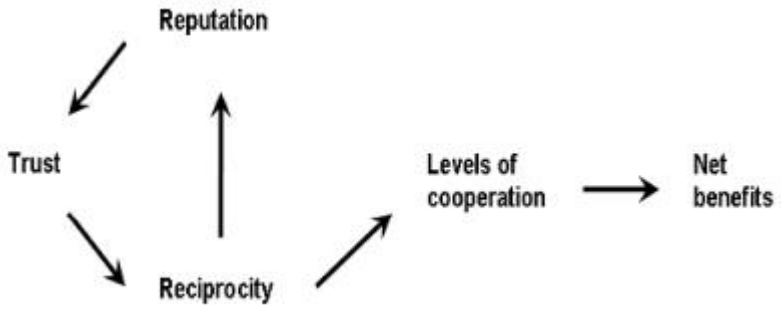

Figure 7. The core relationship of Ostrom's rational choice theory of collective action. Mutual reciprocity, trust and good reputation can lead to increased levels of cooperation and net benefits of the group. (Ostrom, 1998).

To obtain microcredit from formal MFIs, farmers are often required to have a guarantor who will pay back the loan in case of default. Of all the interviewed MFIs, seven require guarantors for getting a loan (Table 2; Table 3). One farmer states that coffee cooperatives require the guarantor to be a coffee farmer (SSI 22, Appendix). For group loans ECLOF bank requires the guarantor to be a member of the farmer's group; for individual loans the guarantor should be the wife or husband (SSI 11, Appendix 1).

There is no financial incentive to be someone's guarantor; thus the ability to secure a guarantor often hinges on reputation and social relations (SSI 5, Appendix 1). In the event a microcredit loan taker is late on loan payments, the loaning institution will pressure the guarantor to repay, which then creates tension between the loan taker and the guarantor (SSI 24, Appendix 1). According to Nawiri SACCO, the inability to obtain a guarantor is problematic for farmers who attempt to secure microcredit (SSI 1, Appendix 1). If trust cannot be established, the core relationship cannot suffice to lead to increased net benefits.

"You cannot trust anybody"

(SSI 1, Appendix 1).

As informal MFIs do not require guarantors, they are a popular option for the farmers. However, trust is also emphasized by a member of an informal chama as important within the chamas and the merry go rounds:

"These informal institutions are based on tight relationships within the society ad could not function without hundred percent trust in each other"

(SSI 10, Appendix 1).

Utilization of Microcredit and Outcomes

Although MFIs may require a business plan or a statement from farmers clarifying the agricultural purpose of a microcredit loan, farmers may not in actuality invest in agricultural practices. Furthermore, MFIs do not necessarily monitor the utilization of a loan. The term 'utilization' will be used to describe the practical use of a microcredit loan.

Many key informants indicate that farmers tend to state that an agricultural purpose is the main reason for taking a microcredit loan . However, the loan is often spent fully or partially on a different purpose (SSI 17; SSI 18; SSI 7, Appendix 1).

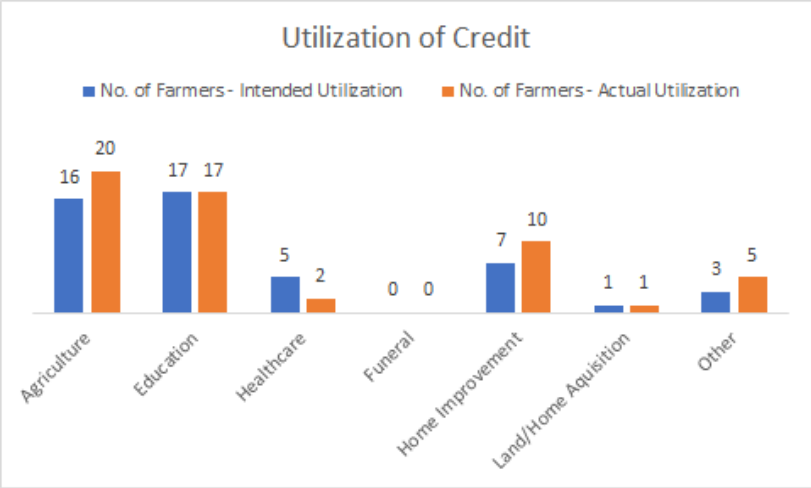

Figure 8 Utilization of Credit (questionnaire): The figure represent the information on utilization of credit from questionnaire data on 7 different parameters, with blue bars representing the intended utilization and orange bars the actual utilization. The tally above each bar represents the number of farmers responding to that exact use.

Figure 8 represents the information on utilization of credit from questionnaire data on seven different parameters. Both agriculture and education seem to be primary reasons why farmers take microcredit loans. Though some SACCOs and banks require farmers state an intended purpose for a microcredit loan (SSI 2, SSI 8, Appendix 1), monitoring of its usage is practically non-existent. A farmer is likely to state that a loan will be used for agricultural purposes, such as buying fertilizers or chemicals (SSI 17, Appendix 1), which corresponds with the actual flow of credit when credit is utilized on agricultural inputs (fig. 8).

> *"Those who deviate from utilizing the credit on the intended purpose do so because they are not principled and lack education on how to use the credit obtained"*
> *(SSI 21, Appendix 1).*

However, according to SSI data from both SACCOs and farmers, school fees are the primary reason why farmers take microcredit loans (SSI 10, SSI 23, SSI 13, Appendix 1). This seems to be widely known and accepted by MFIs, formal and informal institutions alike. Loans for agricultural and educational purposes may indeed be the most common reasons for a farmer to take a loan. However, the data represented in figure 8 does not show the size of the loan taken and how it may have been utilized solely on the intended purpose of the loan or perhaps partially or fully on a different parameter.

According to a farmer, coffee, tea, and macadamia are the most valuable crops, leading people to invest in these (SSI 23, Appendix 1). Data from questionnaires indicate that microcredit utilized on agriculture is particularly invested in fertilizers and chemicals; only 5% state that microcredit is utilized on agricultural inputs other than fertilizer, chemicals, buying crops/seeds, tree seedlings or farm consultations (Figure 9).

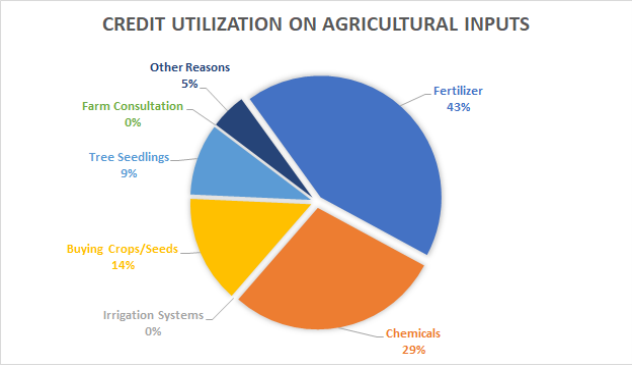

Figure 9. Credit utilization on agricultural inputs (questionnaire) of the credits spent on agriculture.

According to a farmer the utilization of microcredit depends on gender; women mostly buy household goods while men obtain microcredit to build a house or buy land (SSI 23, Appendix 1). With half of women but only only 1 out of 16 men spending credit on home improvements (figure 10), these results seem to support the aforementioned farmer's statement. One man, yet no women, acquired home or land over the last year. Based on questionnaire data, there is no statistically significance between gender and taking a microcredit loan ($p = 0.2414$) or between gender and the size of microcredit loans ($p = 0.3088$).

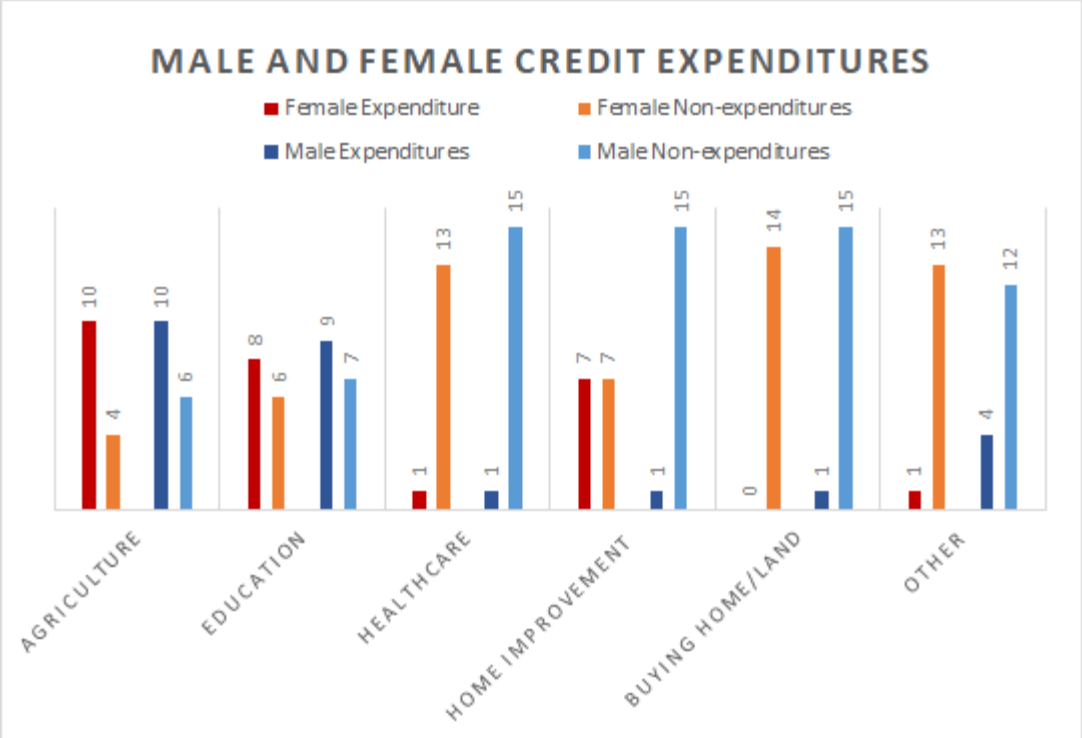

Figure 10. Male and female credit expenditures (questionnaires).

As shown in figure 11, the total microcredit expenditure distribution varies between farmers. Of the farmers who utilized microcredit, the average microcredit expenditure per year on agriculture is 18,479.19 KSH ($183,30) per year; the average microcredit expenditure on education is 25,222.94 ($250.20) per year (Questionnaire, Appendix 1). Though 60% of the farmers stated they only had one intended purpose for the microcredit, 66% of the farmers utilized microcredit on more than one parameter, demonstrating a general misapplication of microcredit (Questionnaire, Appendix 1).

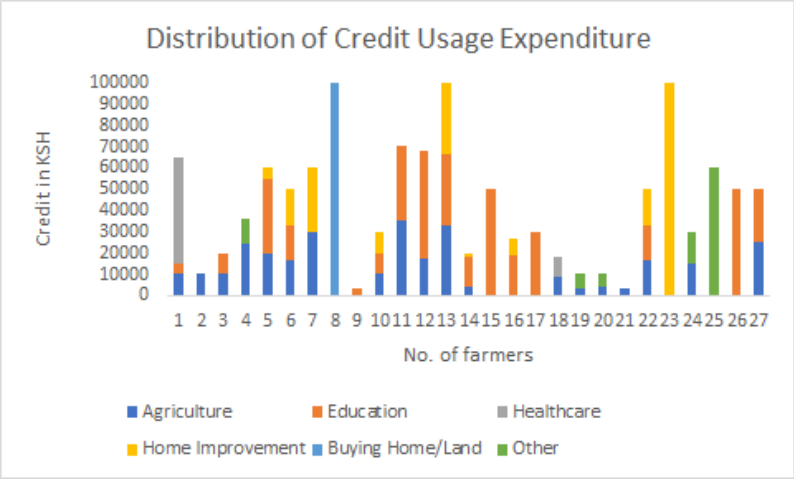

Figure 11. Distribution of credit usage expenditure (questionnaire).

As demonstrated in figure 12, there seems to be no clear pattern in microcredit expenditure. No farmers took more than 100,000 KSH ($992.31) in total loans in the last 12 months (Figure 12).

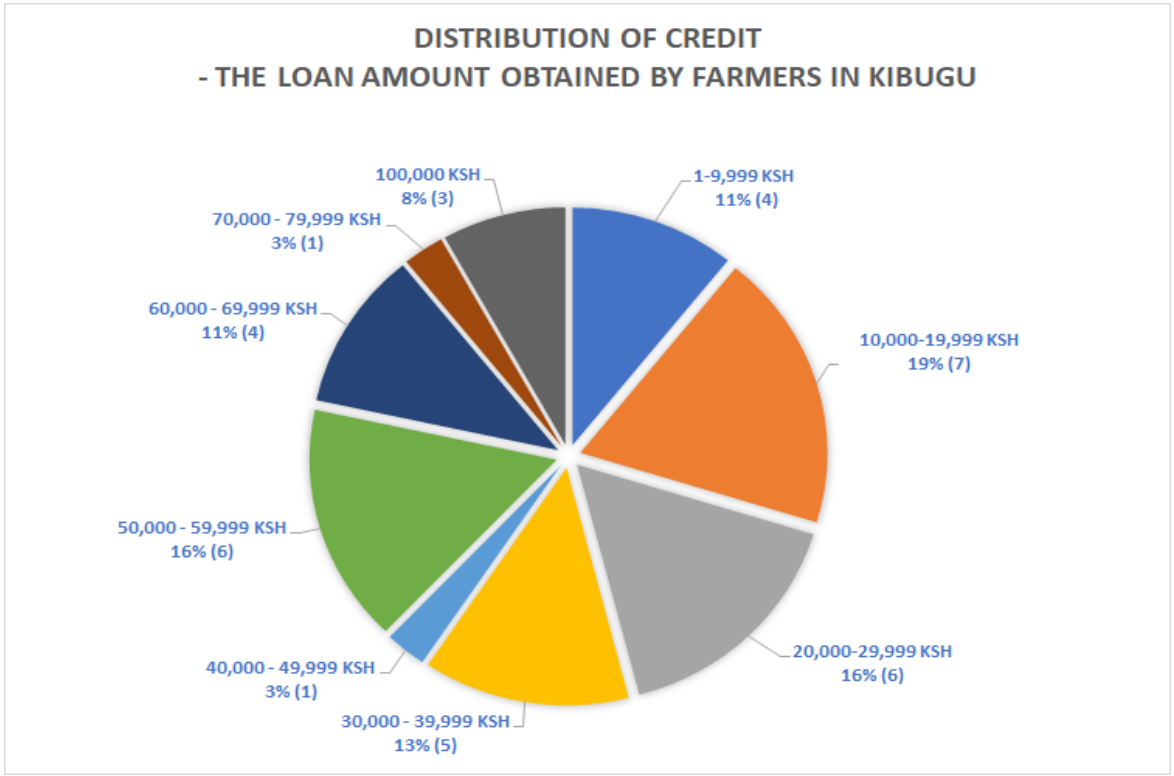

Figure 12. Amount of microcredit obtained by farmers in Kibugu.

Taking a microcredit loan for agricultural purposes may be seen as an investment in the farmer's business to improve their livelihoods and pull themselves out of poverty. However, farmers often divert money to spend on non-income generating activities or activities that will not pay off for a long time, e.g. education. Because of the short-term structure of microcredit repayment schedules, farmers are often unable to repay the microcredit loans with money earned from the long-term investment in education for children. This leads farmers to take more microcredit to repay the initial loan. In Kibugu, it is common to be a member of several chamas. For some, it is a welfare system and an investment in welfare services such as healthcare, wedding or funeral services (SSI 10, Appendix 1). However, for many it seems to enable them to obtain new microcredit loans to repay outstanding loans (SSI 5, Appendix 1). If a farmer has no economic capital to repay a microcredit loan, then the farmer may go to a chama to obtain microcredit to repay the first lender, then a third lender to repay the second and so on (SSI 5, SSI 10, SSI 20, Appendix 1). Typically, microcredit cannot be taken from an MFI at which they already have an outstanding debt.

According to one farmer, new chamas are regularly formed; it is easy to form a chama, chamas can apply for government interest free microcredit, and it is a possibility for farmers to obtain microcredit, when credit is needed (SSI 10, Appendix 1).

Farmers that take credit from cooperatives are restricted to put the loan on agricultural purposes because the credit are given in the form of farming inputs. These inputs are mostly chemicals, fertilizers, and animal feeds (SSI 12, SSI 4, Appendix 1). It is not clear from the data if there are any long-term investments in agriculture; nor is there any data on how these inputs are utilized. In conclusion, the farmers do not necessarily take microcredit for long-term investments or income generating investments. Farmers' short-term investments are not necessarily financially well thought out.

Discussion and Conclusion

Discussion of Methods

The results presented are characterized by the research methods applied; The two different interview methods, questionnaires and SSIs, each contributed to develop an understanding of different aspects of microcredit.

Results from questionnaire data provided an overview of microcredit, however, some of the data gathered was not analyzable. The questionnaire was edited after the pilot test, yet after the final data was collected faults became apparent. Though seven sub-locations were visited and 50 questionnaire interviews were carried out, because of inconsistent administration and suboptimal question design a portion of the data was rendered useless. Thus, the statistical analysis of certain aspects of the questionnaire data was limited by a lack of valid responses and as one microcredit review paper notes, "statistical power still poses a major challenge to microcredit impact studies" (Banerjee et al., 2015). Statistical power was also a challenge in this research.

Some questionnaire interviews were carried out outside of the seven sub-locations (Figure 2) due to navigation issues and communication difficulties. These issues may have been minimized through training and the establishment of a homogenous interview method. Furthermore, a critical analysis of data carried out while the researchers were still in the field may have exposed flaws that could have been corrected with more data.

Results from SSIs provided a comprehensive understanding of the institutional structure of MFIs as well as why farmers take microcredit and how it is utilized. However, similarly to the questionnaire interviews, an inconsistent methodology of conducting SSIs caused inconsistencies in data. Consequently, the lack of standardized data provided difficulties in comparing answers from different SSIs.

The significance of the research findings may be flawed due to the interview techniques applied. Furthermore, inadequate translation from the local language to English may have resulted in misinterpretation of data. Focus group discussions could potentially have contributed to a more comprehensive understanding of farmers' access and utilization of microcredit.

Discussion of Results

Based on results gathered in Kibugu, it may be theorized microcredit, when invested in income-generating activities, can lead to livelihood improvement for those empowered through capital to access microcredit. However, for those with limited capital and who make financially unsound investment choices, microcredit may lead to entrapment in debt cycles. The formation of these debt cycles are catalyzed by high interest rates which past researchers examining Kenyan microfinance have associated with higher rates of default, supporting the idea that high interest rates are detrimental to microcredit loan takers (Kodongo et al., 2013). Banerjee et al. note that due to the heterogeneous nature of loan takers, microcredit may be "good for some, bad for others" (Banerjee et al., 2015).

Although results demonstrate that almost all farmers are able to obtain microcredit from some type of MFI, their ability to access microcredit (access in terms of their ability to derive benefit from microcredit) is largely determined through their access to capital. In short, farmers' access to capital often affects the livelihood outcomes of microcredit. Farmers ability to obtain microcredit may be a misguided research objective. Furthermore, results suggest a more appropriate research objective

could be to elucidate the understanding of how the intersection between farmers' capitals and the structure of MFIs and microcredit loans mediate farmers' ability to benefit from microcredit.

Access to capital was discovered to be highly important in determining a farmer's access microcredit. For instance, if a farmer does not have access to land or a certain crop they may face difficulties in obtaining microcredit loans. A previous study notes although microcredit has had a positive impact on the growth of Kenyan women's small and medium enterprises, poor women and those lacking collateral were often unable to obtain individual microcredit loans (Ouma et al., 2013). Additionally, a separate study in Kenya found women were more likely to join informal MFIs because they lacked title deeds to use as collateral to obtain credit from formal MFIs (Kangogo et al., 2013). This may be the reason why chama members are predominantly women despite chamas being open to both genders, however this may also be because of societal norms or other factors not considered. Both these studies coincide with results from Kibugu, which suggest a lack of collateral limit access to formal microcredit loans. Thus, it may be that microcredit helps alleviate poverty for those who can secure microcredit because they already have a enough capital to support their livelihood.

The data gathered in Kibugu indicates that not only the structure of microcredit loans is important; the utilization of microcredit is also fundamental in determining the livelihood outcomes of the farmers. Supporting the findings demonstrated in this report, Lock (2016) indicate microcredit is often used for daily household consumption rather than in income-generating investments. Similarly, Imai et al. (2010) argue that the largest poverty reduction from microcredit occurred when accessing MFIs is defined as loan taking for productive purposes, rather than just being able to obtain microcredit loans. One study noted that Kenyans HIV and AIDS patients who used microcredit to invest in income-generating activities experienced an "enhancement to their livelihood security" (Datta et al., 2008). However, many investments in Kibugu are not in income-generating activities. Farmers in Kibugu have demonstrated a tendency to utilize microcredit on education. This could potentially be an income-generating investment. However, the repayment period does not cover the return on investment, which may lead to default and may trap farmers in debt cycles. The investment in education could, however, improve the farmers' human capital (Mosley, 2004).

Research shows the ability to obtain microcredit loans can improve the relative income of the poor, the economic growth and inequality reduction are modest (Hermes, 2014). Since its genesis as the Grameen Bank, microfinance has been touted as the panacea for the poorest of the poor. Results from Kibugu indicate that the misapplication of credit, formation of debt cycles, and the structure of microcredit loans and institutional requirements, are responsible for slowing economic growth and limiting farmers' improvement of livelihoods. It seems the least empowered of society are still excluded from access to microcredit.

Recommendations

Based on results, farmers should be wary of microcredit loans with high interest rates and short repayment periods. Farmers should also have a plan for financially responsible microcredit investments. For instance, microcredit should be utilized to invest in income-generating activities which create return on investment within the time period of the repayment plan of the microcredit loan. Furthermore, farmers should avoid diverting money away from the intended purpose of the microcredit loan. Farmers should also keep detailed and accurate financial and agricultural records. Additionally, MFIs should provide farmers with information, and training if possible, on how to keep appropriate records. Importantly, MFIs should set microcredit interest rates appropriately to benefit the poor. Lastly, future studies on microcredit should not only focus on people's ability to obtain microcredit but rather how microcredit is utilized.

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References

Banerjee, A., Karlan D. & J. Zinman (2015). Six Randomized Evaluations of Microcredit: Introduction and Further Steps. *American Economic Journal: Applied Economics*, Vol., 7, No. 1, pp. 1–21

Casley, D. J., Dennis J & Kumar, Krishna, 1988. *The collection, analysis, and use of monitoring and evaluation data*, Baltimore London: Published for the World Bank [by] the Johns Hopkins University Press. pp. 13-14

Central Bank of Kenya (2018). Key Highlights on the The Impact of Interest Rate Capping on the Kenyan Economy - Draft for Comments. Online. *Central Bank of Kenya.* March 2018, Retrieved 04-05-2019, Available at: URL. <https://www.centralbank.go.ke/wp-content/uploads/2018/03/Summary-of-the-study-on-Interest-rate-Caps_February-2018.pdf>

Cheeseman, N., Lynch, G. & J. Willis (2016). Decentralisation in Kenya: the governance of governors *. *Journal of Modern African Studies*, vol. 54, no. 1, pp. 1–35

Datta, D. & J. Njuguna (2008). Microcredit for people affected by HIV and AIDS: Insights from Kenya. *Journal of Social Aspects of HIV/AIDS*, Vol. 5, No. 2, pp. 94-102

FSD Kenya, Government of Kenya, UKaid, The World Bank, Embassy of Sweden - Nairobi, Agence Francaise de Developpement & Bill and Melinda Gates Foundation (2012). Transforming microfinance in Kenya, the experience of Faulu Kenya and Kenya Women Finance Trust. *FSD Kenya - Financial Sector Deepening, Frankfurt School of Finance & Management, Bankakademie HfB*, pp. 1-26. Available at:
URL:<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>

Hermes, N. (2014). Does microfinance affect income inequality? *Applied Economics,* Vol. 46, No. 9, pp. 1021-1034

Imai, K., Arun T. & S. Annim (2010). Microfinance and Household Poverty Reduction: New Evidence from India. *World Development,* Vol. *38, No.* 12, pp. 1760-1774

Kaburi, S., Ombasa, B., Omato, D., Mobegi, V. & F. Memba (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*, vol. 2, no. 5, pp. 34-39

Kangogo, K.D., Lagat K.J. & K.I. Gicuru (2013). Social Capital Dimensions and other Determinants Influencing Household Participation in Micro-credit Groups in Uasin Gishu County, Kenya. *Developing Country Studies*, Vol.3, No.3, pp. 213-222

Kodongo, O. & L.G. Kendi (2013). Individual lending versus group lending: An evaluation with Kenya's microfinance data. *Review of Development Finance*, Vol. 3, No. 2, pp. 99-108

Lock, R. & L.H. Smith (2016). The impact of female entrepreneurship on economic growth in Kenya. *International Journal of Gender and Entrepreneurship,* Vol. 8, No. 1, pp. 90-96

Mosley, P., Rock J., Chowdhury A. & R. Mushtaque (2004). Microfinance, labour markets and poverty in Africa: A study of six institutions. *Journal of International Development,* Vol. *16, No.* 3, pp. 467-500

Myers, R. & C.P. Hansen (2019). Revisiting A Theory of Access: A review. *Society & Natural Resources - An International Journal*, pp. 1-21

Ombogoh, D.B., Tanui J., McMullin S., Muriuki J. & J. Mowo (2018). Enhancing adaptation to climate variability in the East African highlands: a case for fostering collective action among smallholder farmers in Kenya and Uganda. *Climate and Development*, Vol. 10. No. 1, pp. 61–72

Omino, G. (2005). Regulation and Supervision of Microfinance Institutions in Kenya. Essays on Regulation and Supervision, *Microfinance Regulation and Supervision Resource Center - Central Bank of Kenya*. Online, pp. 1-7. Available at: URL:<http://www.findevgateway.org/sites/default/files/mfg-en-paper-regulation-and-supervision-of-microfinance-institutions-in-kenya-mar-2005.pdf>

Ostrom, E. (1998). A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address, American Political Science Association. *The American Political Science Review*, Vol. 92, No. 1., pp. 1-22

Ouma, C.O. & C.M. Rambo (2013). Rambo CThe Impact of Microcredit on Women-owned Small and Medium Enterprises: Evidence from Kenya. *Global Journal of Business Research*, Vol 7, No. 5, pp. 57-69

Rahman, W.A.A. (2010). An overview of microfinance: history and evolution, definition and practice. Online. *The free library,* December 2010, Retrieved 04-05-2019, Available at: URL:<https://www.thefreelibrary.com/An+overview+of+microfinance%3A+history+and+evolution%2C+definition+and...-a0374921305>

Republic of Kenya - Ministry of Agriculture, Livestock and Fisheries, Food and Agriculture Organizations of the United Nations, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, UNDP & World Bank (2017). Kenya Climate Smart Agriculture Strategy 2017-2026. *Government of the Republic of Kenya*, pp. 1-100

Ribot, J.C. & N.L. Peluso (2003) . A Theory of Access*. *Rural Sociology*, Vol. 68, No. 2, pp. 153–181

Scoones, I. (2015). *Sustainable Livelihoods and Rural Development*. Agrarian Change and Peasant Studies Series, Practical Action Publishing Ltd, Warwickshire, UK. pp. 34-60

Trading Economics (2019). Kenya Interest Rate. Online. *Trading Economics*, Last updated 2019, Retrieved 04-0-2019, Available online: URL. <https://tradingeconomics.com/kenya/interest-rate>

United Nations Development Programme (2019). Goal 1 Targets. Online. *United Nations Development Programme*. Updated 2019, retrieved 04-05-2019, Available at: URL: <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-1-no-poverty/targets.htm>

Wikipedia (2018). Embu County. Online. *Wikipedia*. Last updated 09-13-2018, Retrieved 04-05-2019. Available at: URL: <https://en.wikipedia.org/wiki/Embu_County>

World Bank (2018). Agriculture Finance. Online, The World Bank, Updated 2018, Retrieved 2019, Available at: URL. <http://www.worldbank.org/en/topic/financialsector/brief/agriculture-finance>

Appendices

Appendix 1. Index of SSI interviews

SSI 1	Nawiri SACCO
SSI 2	Musoni Bank
SSI 3	Kibugu Winas Chama
SSI 4	Kibugu Farmers Cooperative Society
SSI 5	Key Informant on Informal Groups #1
SSI 6	Greenland Fedha
SSI 7	Family Bank
SSI 8	Faithful Servant SACCO
SSI 9	CIC Insurance Group Limited
SSI 10	Key Informant on Informal Group #2
SSI 11	ECLOF Bank
SSI 12	Dairy Farmers' Cooperative
SSI 13	Daima SACCO Kibugu Branch
SSI 14	Former Agricultural Extension Agent
SSI 15	Commodities Fund
SSI 16	Biashara SACCO
SSI 17	Agricultural Finance Corporation (AFC)
SSI 18	Agricultural and Livestock Officers
SSI 19	Farmer #1
SSI 20	Farmer #2
SSI 21	Farmer #3
SSI 22	Farmer #4
SSI 23	Farmer #5
SSI 24	Farmer #6

Appendix 2. Overview of applied methods

Method	**Information**
Questionnaire	50
Semi-structured interviews	6 farmers, 18 key informants
GPS-mapping	50 coordinates (questionnaires) in 7 sub-locations
Participatory observation	During questionnaires and SSI

Appendix 3. SSI focused on formal MFIs

A. INSTITUTION IDENTIFICATION

Name of Institution/Agency: _____ Date: _____

GPS coordinates: _____ Type of Institution: _____

Time: _____ Name of employee: _____

Position of employee: _____

B. NATURE OF INSTITUTION AND SERVICE

1. When did the institution start its operations in Kibugu?
2. What is this institution hoping to achieve with the services that it provides?
3. What are the requirements for a farmer to be a member?
4. Regional where their services are provided?
5. Do you have any affiliations with any cooperative/SACCOs/farmer groups?
6. How is the service provided/extended to the farmers?
7. What types of products and services does the institution mainly provide?
8. What is the interest rate for this product? Is it fixed or variable?
9. What is the cost of getting credit?
10. What are loan approval durations?
11. Do you give group or individual loans? What do most farmers prefer?

C. FARMER'S ACCESS TO FINANCE

1. Are most of your clients male or female?
2. Which type of products and services that you provide do farmers use the most?
3. What are the loan requirements?
    - What are some of the limitations to credit access by farmers? collateral?
    - How are guarantors structured in a credit plan?
4. Numbers/data on how many customers are using the services and or products?
    - Based on loan book
5. Characterize the different farmers who take loans/credit/What do you look for when doing your KYC (Know Your Customer)?
6. Why do farmers say they take loans?
7. What are the requirements for the use of the credit, set out by the institution?
8. Does the institution monitor how credit is being spent by farmers?
    - If so, how is this done/monitored?
9. Are there Repayment plan for credit/amortization schedule?
10. What happens when farmers fail to repay credit?
11. How do you respond to large scale loan repayment defaults for example due to crop failure?
12. Do you have healthy relationships with farmers?

13. What incentives does the institution provide to attract farmers to get credit? And to make early prepayments?
14. Does the institution promote/advertise itself in the community?
    - If so, how is this done?

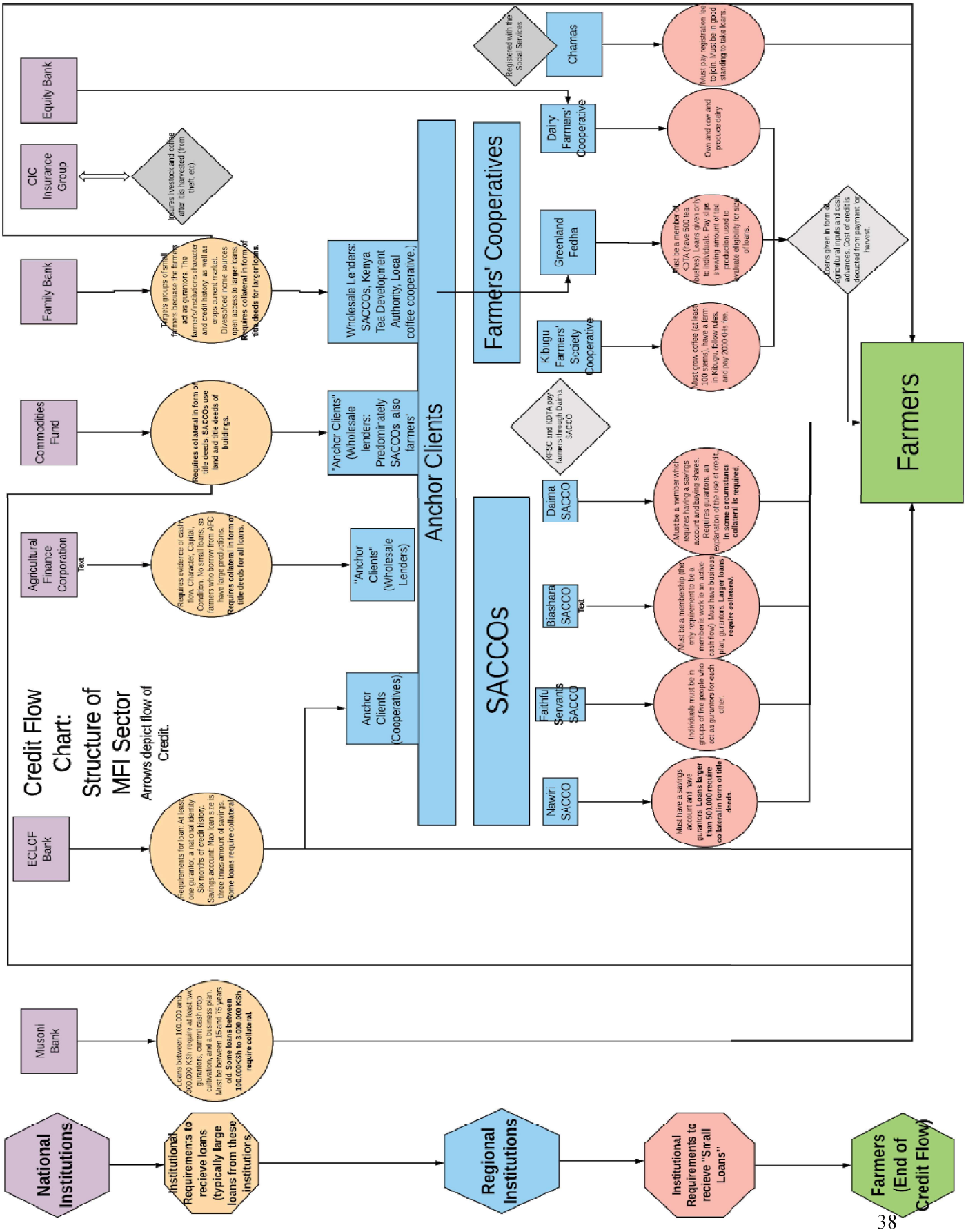
D. SUSTAINABLE AGRICULTURAL PRACTICES

1. Does the institution train/educate farmers on better farming methods? If so, Which ones? (**Skip to Q.22 if NO**)
2. Does the institution conduct follow up meetings to ensure farmers implement these methods? (**Skip to Q.22 if NO**)
3. What has been some of the observations regarding the implementation of these methods from past follow up meetings?
4. Does the institution face any challenges in enforcing /ensuring farmers implement these methods?
5. How is the institution solving these challenges? Any recommendations?
6. Is there any existing/future plans (of the institution) to encourage sustainable land use?

Appendix 4. SSI focused on informal MFIs

1. Do you belong to a women's group, merry go round, chama, youth group, or any other sort of group?
2. Does it deal with finances and money?
3. Does it deal with agriculture?
4. How did it start?
5. When did it start?
6. Who formed it?
7. Who can be a member?
8. Who is in charge?
9. What is your role in the group?
10. Why are you a member?
11. What are the advantages of being in the group? (Financial, social, etc reasons?)
12. Explain how the group works?
13. Describe how you are related to the other members.
14. How often do you meet?
15. How much money do you contribute?
16. How much money does the group pay out?
17. What happens when a member doesn't pay?
18. Could you describe exactly how the financial system works in the group?
19. What are the dynamics of finances in your household?
20. Are other people in your household also members of the group?
21. What are the challenges members of your group face?

Appendix 5. Detailed representation of the structure of MFIs in Embu County.



Appendix 6. Questionnaire

Questionnaire

Hi. Our names are---------- . We are students from the University of Copenhagen and the University of Nairobi. We are conducting research in agriculture, farming practices, and finances. We kindly ask you to participate in our short questionnaire. We will keep all your answers and information completely anonymous.

Questionnaire information

1. **Date, location, GPS coordinates, interviewer, interviewee, translator:**

Personal information

2. **Name of the head of the household**

3. **Gender**
   Markera alla som gäller.
   - [ ] Male
   - [ ] Female

4. **Age**
   Markera alla som gäller.
   - [ ] < 20
   - [ ] 21-30
   - [ ] 31-40
   - [ ] 41-50
   - [ ] 51-60
   - [ ] 61-70
   - [ ] Above 70

5. **Civil status**
   Markera alla som gäller.
   - [ ] Married
   - [ ] Single
   - [ ] Divorced
   - [ ] Widow
   - [ ] Other, please specify:

6. **Highest level of completed education**
   Markera alla som gäller.

   - [ ] None
   - [ ] Primary school
   - [ ] Secundary school
   - [ ] Tertiary school (diploma, certificate)
   - [ ] Bachelor degree
   - [ ] Master degree
   - [ ] Other, please specify:

7. **Main occupation**
   Markera endast en oval.

   - ◯ Student
   - ◯ Farmer
   - ◯ Housekeeper
   - ◯ Off-farm employment
   - ◯ Other, please specify:

Household information

8. **How many people are permanent residents of the house? (Everybody, including children, adults, and yourself!)**

9. **Does your household own land?**
   Markera endast en oval.

   - ◯ Yes
   - ◯ No

10. **Does your household rent land?**
    Markera endast en oval.

    - ◯ Yes
    - ◯ No

11. **How large is your farm in acres? (owned + rented)**

12. **How did you acquire your land?**
    Markera alla som gäller.

    - [ ] Inherited
    - [ ] Bought
    - [ ] Gift
    - [ ] Other, please specify:

13. **Which animals do you keep? (ask how many!)**
Markera alla som gäller.

- [ ] Cow
- [ ] Chicken
- [ ] Pig
- [ ] Goat
- [ ] Sheep
- [ ] Rabbit
- [ ] Other, please specify:
- [ ] None

Agricultural practices

14. **Do you grow any of the following crops?**
Markera alla som gäller.

	To sell	To eat
Coffee	☐	☐
Tea	☐	☐
Macadamia	☐	☐
Maize	☐	☐
Banana	☐	☐
Cabbage	☐	☐
Kale	☐	☐
Sweet Potatoes	☐	☐
Arrow Root	☐	☐

15. **How often do you use the below mentioned inputs?**
Markera endast en oval per rad.

	Never	Rarely	Sometimes	Often	Very Often
Fertilizers	◯	◯	◯	◯	◯
Chemicals (Pesticides, herbicides, etc.)	◯	◯	◯	◯	◯
Irrigation	◯	◯	◯	◯	◯
Machinery	◯	◯	◯	◯	◯
Compost and manure	◯	◯	◯	◯	◯
Inter-cropping	◯	◯	◯	◯	◯
Crop Rotation	◯	◯	◯	◯	◯
Mulching	◯	◯	◯	◯	◯
Cover Crops	◯	◯	◯	◯	◯
Grow Legumes	◯	◯	◯	◯	◯
Erosion Reducing Practices	◯	◯	◯	◯	◯
Letting land rest	◯	◯	◯	◯	◯
Other, pleace specify:	◯	◯	◯	◯	◯
None	◯	◯	◯	◯	◯

16. **Do you grow trees for non-production reasons?**
Markera endast en oval.

- ◯ Yes
- ◯ No

17. **If yes, why do you have them?**
Markera alla som gäller.

- [ ] Shading
- [ ] Wood
- [ ] Soil fertility
- [ ] Erosion control
- [ ] No specific reason
- [ ] Other, please specify:

Farmers view on microfinance

18. **Do you know that microfinance exists?**
Markera endast en oval.

- ◯ Yes
- ◯ No

19. **How do you view microfinance loans?**
Markera endast en oval.

- ◯ Negative
- ◯ Somewhat negative
- ◯ Neutral
- ◯ Somewhat positive
- ◯ Positive

20. **Do you agree with the following: sustainable agricultural practices are important for farmers in Kibugu.**
Markera endast en oval.

- ◯ Strongly agree
- ◯ Agree
- ◯ Don`t know
- ◯ Disagree
- ◯ Strongly disagree

21. **Do you think any of the below factors impact the ability to get a loan?**
Markera endast en oval per rad.

	Strongly disagree	Disagree	Neutral	Agree	Stronlgy agree
Age	◯	◯	◯	◯	◯
Gender	◯	◯	◯	◯	◯
Income	◯	◯	◯	◯	◯
Social network	◯	◯	◯	◯	◯
Distance	◯	◯	◯	◯	◯

Financial information

22. **How much does your household earn per month from all income source**
Markera endast en oval.

- Less than 1000 KSH
- 1000 KSH to 4999 KSH
- 5000 KSH to 9999 KSH
- 10000 KSH to 14999 KSH
- 15000 KSH to 19999 KSH
- More than 20000 KSH

23. **Have you tried to take a loan/borrow money in the last 12 months?**
Markera endast en oval.

- Yes
- No

24. **If yes, how many times:**

_____

25. **If no, why have you not tried?**
Markera endast en oval.

- Not interested
- Too risky
- No collateral
- No gurantor
- Lack of information
- Too far away
- Reasons based on age
- Reasons based on gender
- Reasons based on social network

26. **Have you successfully obtained a loan or borrowed money within the last 12 months?**
Markera endast en oval.

- Yes
- No

27. **If yes, how many times:**

_____

28. **If no, why have you not been successful?**
Markera endast en oval.

- ◯ Too complicated
- ◯ No collateral
- ◯ No guarantor
- ◯ No savings
- ◯ Too far away
- ◯ Reasons based on gender
- ◯ Reasons based on age
- ◯ Reasons based on social network

29. **Did you require any collateral for the loans or borrowed money?**
Markera endast en oval.

- ◯ Yes
- ◯ No

30. **Were you able to negotiate the terms of the loan?**
Markera endast en oval.

- ◯ Yes
- ◯ No

31. **Where did you take the loan or borrow the money from? Please specify name.**
Markera alla som gäller.

- ☐ SACCO
- ☐ Bank (Non-mobile)
- ☐ M-PESA/Mobile Banking
- ☐ Cooperative
- ☐ Family/Friend/Neighbor
- ☐ Church
- ☐ Other, pleace specify:

32. **What was the total value of the loans or borrowed money acquired within the last 12 months?**
Markera alla som gäller.

- ☐ Agricultuture
- ☐ Education
- ☐ Healthcare
- ☐ Funeral/Wedding
- ☐ Home Improvement
- ☐ Buying a home/land
- ☐ Other; please specify:

33. **What was the intended purpose of the loan or borrowed money?**
Markera alla som gäller.

- [ ] Option 1

34. **What did you use the money for, please specify the approximate percentage**
Markera alla som gäller.

- [ ] Agriculture
- [ ] Education
- [ ] Healthcare/medicine
- [ ] Funeral
- [ ] Home improvement
- [ ] Buying a home/land
- [ ] Other, please specify:

35. **If money spent on agriculture, please specify approximate percentage**
Markera alla som gäller.

- [ ] Fertilizers
- [ ] Chemicals/pesticides
- [ ] Irrigation systems
- [ ] Buying crops/seeds
- [ ] Buying tree seedlings
- [ ] Farm consultation
- [ ] Other, please specify:

36. **Does the lending organization follow up with how you used the loan/borrowed money.**
Markera endast en oval.

- ◯ Yes
- ◯ No

37. **Did you get any education/information on sustainable agriculture from the loaning group/institution?**
Markera endast en oval.

- ◯ Yes
- ◯ No

38. **Did you get any education/information on financial literacy from the loaning group/institution?**
Markera endast en oval.

- ◯ Yes
- ◯ No

Appendix 7. Synopsis

Access and Utilization of Microcredit in Kibugu, Kenya

Synopsis

Course: Interdisciplinary Land Use and Natural Resource Management

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Anne Katrine H. Hansen (jmz703)

22.02.2019
Word Count: 2394

Index

Introduction

Microcredit, small-scale loans made available to the poor and marginalized, is often heralded as a valuable tool for poverty alleviation in developing economies. These developing economies are often built upon an agricultural sector, making apparent the potential for microcredit investment in agriculture by the very poor. Microcredit falls within the scope of the broader category of microfinance, which also includes small-scale leasing, insurance, and other financial products, all of which are meant to alleviate poverty (Rahman et al, 2010). Ideally, microcredit investment in agriculture leads to the implementation sustainable agricultural practices. The increasing intensity of extreme weather patterns due to climate change which threaten to decrease agricultural production and exacerbate food insecurity worldwide underlie the need for financial investment in sustainable agriculture (Wheeler and Braun, 2013).

In Kenya, the government has recognized the need for a sustainable agricultural sector resilient to a changing climate (Republic of Kenya et al, 2017). A comprehensive report produced by the government emphasizes the role financial investment will play in either facilitating or impeding the development of sustainable agriculture in Kenya (Republic of Kenya et al, 2017). Agriculture accounts for one quarter of the country's GDP and provides food for approximately 80% of the country's rural residents (Republic of Kenya et al, 2017). Despite the need for financial investment in sustainable agriculture and the size of the agricultural sector, approximately 65% of Kenyans, particularly women and the very poor, many of whom are farmers, lack access to a degree of financial institutions (Kodongo and Kendi, 2016). Almost half of the population still lives below the poverty line, demonstrating the need for further efforts to improve the economic position of the poor (Lock et al., 2016). The United Nations Sustainable Development Goal Number 1, "To end poverty in all forms everywhere", highlights equal access to microfinance as a key target to achieve this goal (United Nations Development Programme, 2019).

Many poor Kenyans rely on farming to meet their subsistence needs and generate income. The agricultural practices of the poor farmers, whom microfinance targets to raise out of poverty, will play a large part in determining the sustainability of the Kenyan agriculture. Almost half a century ago, the Grameen Bank in Bangladesh demonstrated the long-term feasibility of microcredit as an effective tool for poverty alleviation; providing financial capital to the poor enabled them to lift themselves out of poverty.

The underlying rationale of microcredit is as follows; low-cost credit is made available to people who are typically denied access to credit by traditional financial institutions because they are considered "high-risk" and "unbankable" (Rahman, 2010). If given access to microcredit, these people, particularly women and the very poor, will increase their income, become financially stable, and create employment opportunities for others (Kaburi et al., 2013). In Kenya, many hope poor farmers who engage in microcredit will lift themselves out of poverty through investments particularly in sustainable agricultural practices; simultaneously reducing poverty and increasing the sustainability of the agricultural sector. Thus, it is important to discover if poor farmers actually use microcredit to invest in sustainable agricultural practices.

Microfinance schemes were first introduced in Kenya in 1980s and have continued to proliferate since (Kaburi et al., 2013). In 2008, legislation was passed regulating the array of microfinance institutions (MFIs) operating within the country. Three tiers of microfinance institutions exist in Kenya, generally categorized by varying levels of formality (FSD Kenya et al., 2012). Kenyans have different degrees of access to each of these tiers of MFIs. Although microfinance has allowed many who are traditionally excluded from the financial sector accesses to credit, regardless of the type of microfinance institution, many Kenyans are still excluded from credit. Thus, it is important to determine what factors influence access to microcredit among the different tiers of MFIs in Kenya.

Approximately 120 kilometers north of the Kenyan capital city of Nairobi on the southeastern slope of Mt. Kenya is Kibugu, a rural village in Embu County. Our research team will enter Kibugu with the goal to provide insight upon the two knowledge gaps in the specific locality of Kibugu. Our two-part research question is summarized:

What factors determine access to microfinance institutions in Kibugu?
How is microcredit utilized in Kibugu?

Background

Microfinance in Kenya

Starting in the 1980s, NGOs, foreign development agencies, and faith-based organizations began microfinance operations in Kenya (Kaburi et al., 2013). Prior to the Microfinance Act of 2006 which was intended to grow microfinance through the formalization of MFIs, there was no legal regulatory structure for these institutions to operate within (Omino, 2005). The Microfinance Act, along with other supporting legislations, created a three-tiered regulatory structure for MFIs (FSD Kenya et al., 2012).

To understand access to Kenyan microfinance, it is necessary to understand the sector's three-tiered structure (Fig. 1). Tier 1 represents the most tightly regulated financial institutions. The formal institutions regulated within Tier 1 are banks, deposit-taking microfinance institutions (DTMs), and deposit-taking savings and credit cooperatives (SACCOs); the common element of all these institutions is their ability to take deposits. The less strictly regulated semi-formal institutions of Tier 2 include MFIs and SACCOs which are not able to take deposits. Tier 3, the informal institutions, remain unregulated.

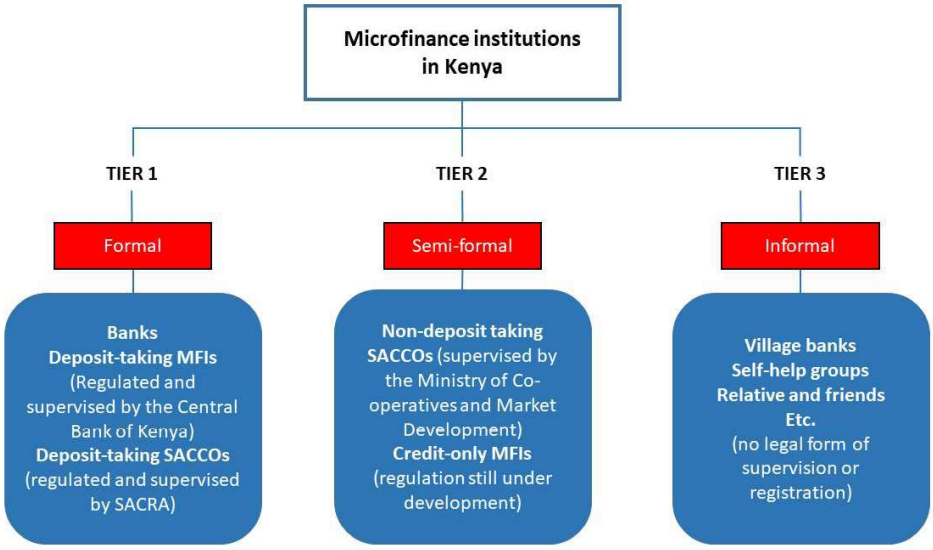

Fig. 1. Tiers of formality of microfinance institutions

It is also important to note the typical structure of microcredit loans. These loans, with 75% issued to individuals and only 25% issued to groups, are typically characterized by high interest rates and short repayment periods. Notably, higher interest rates, larger loan amounts, and individual loan schemes are all significant factors in determining loan delinquency rates (Kodongo and Kendi, 2013). The Kenyan microfinance sector has become increasingly competitive; for instance, Faulu Kenya LTD and Kenya Women Finance Trust converted to DTMs enabling them to offer savings products to increase profits, foster growth, and achieve a greater degree of financial self-sustainability (FSD, 2012). Many microfinance institutions have shifted from a non-profit to a for-profit nature to work towards financial sustainability. Another mark of the growing Kenyan microfinance sector is the utilization of technology; for instance, the growth of the mobile money service M-Pesa has contributed to the spread of microfinance institutions in Kenya (Vizcarra, Nghau, and Ramji, N.D.).

Biophysical Characteristics

The research site of Kibugu is situated on the southeastern side of Mount Kenya, approximately 120 kilometers northeast of Nairobi. Kibugu is a small village in rural Embu County; Embu County encompasses an area of 2,818 square kilometers. Kibugu is in the humid Upper Midlands region, with an annual rainfall of 1250-1500 mm (Kenya Agricultural Programme et al., 2016). Embu County's climate is characterized by two rainy seasons; one period between March and May, the other between October and December (Embu County Government, 2016). The soil of Embu County is predominately clay and/or clay loam, and the land is primarily cultivated (Kenya Agricultural Programme et al., 1983).

Political Structure

The recent history of Kenya is characterized by the British colonial era, the struggle for and the eventual gain of independence in 1963, and the tumultuous rule under presidency highlighted by several disputes between different ethnic groups (Okech and Kimenia, 2012). Today, Kenya is ruled by the country's fourth president Uhuru Muigai Kenyatta, elected in 2017 (BBC, 2018). During the past decades there has been great structural, political and economic reconstructions, which have led to improvement in social development, economical gains and political structures (World Bank, 2018). The biggest political transformation after the country's independence took place 2013, when a new constitution shifted power towards a decentralized government (Cheeseman, N., Lynch, G. & Willis, J., 2016). The decentralized government is characterized by governance on two levels: national and county. The main reason for bringing governmental decision-making down to the 47 different counties is to improve community involvement, increase civic engagement, improve local services and achieve equity between counties.

Economic Structure and Agriculture

In 2016, Kenya had the largest Growth Domestic Product in Central and East Africa; furthermore, its economy is expected to grow in the future (Lock et al., 2016). The main income sources for Kenyans are horticulture, tea farming and tourism (Okech and Kimenia, 2012). Despite recent rapid economic growth, 46% of the population still lives below the poverty line (Lock et al., 2016).

People in Embu County rely primarily on agriculture. About 70% of the population derive their livelihood from crop production in livestock keeping. Many farmers in Embu rely on rain to irrigate their crops, however, rainfed agriculture is particularly vulnerable to the unpredictable weather patterns intensifying with climate change (Kenya Agricultural Programme et al., 2016). The vision of the Agriculture, Livestock, Fisheries, and Cooperative Development department of Embu County is to facilitate the "[...] achievement of food security for all, employment creation, income generation and poverty reduction in Embu County" (Embu County Government, 2016).

Ethnicity and Gender

The four main ethnicities represented in Embu are the Aembu, Mbeere, Kamba, and Kikuyu (Embu County Government, 2016). They are mainly farmers, producing cash crops, food crops and practicing subsistence farming. The Kikuyu's, however, are mainly traders, business people, and civil servants working in government corporations and institutions (Ibid.).

Non-discriminative towards ethnicities, the Embu County's Gender, Culture and Social Services wants to promote gender equality and women empowerment. The department's mission is to "[...] express and uphold Embu Cultural Heritage through the development of gender (man and woman) children and vulnerable groups, by resource management, capacity building and community development activities with the community and stakeholders" (Embu County Government, 2016).

The women in Kenya, and in many other developing countries, traditionally hold the role of food provider, wife, child caretaker and housekeeper. However, these social norms are slowly changing as women get more access to education, employment and finances (Lock et al., 2016).

Methodology

In this section, we present the methods we plan to use. We may change or adapt the methods when we do our research in Kibugu. Additionally, we will observe our environment, talk to people, and be open to informal interviews that may contribute to the overall data collection.

GPS Mapping

- Executors: Project group
- Participants: Farmers in Kibugu (men and women)

We will use a Garmin eTrex 10 GPS to mark waypoints of the place where people are interviewed, and households and institutions located. We will also track routes from households to physical financial institutions.

Participatory Rural Appraisals (PRAs)

- Executors: Project group + translator
- Participants: Farmers (men and women)

PRA is a term used to describe different interactive approaches, where the participants are able to formulate their own understanding and get involved in the problem formulation (Narayanasamy, 2008). By executing various PRA methods, we will hopefully gather useful knowledge about the participants' views on microfinance, sustainable agriculture, and potentially other relevant topics. We plan to implement social mapping, where participants will map Kibugu/their local area and the route from their house to the microcredit institution they use, and a mind mapping exercise where a financial institution is presented to a participant (one institution per mind map). The participant will make branches of characteristics of people taking microcredit loans from said institution, as well as describe what the money is officially and/or unofficially used for, and pros and cons of the institution.

Questionnaires

- Executors: Project group + translator
- Participants: Farmers in Kibugu (men and women)

We will give questionnaires to farmers in Kibugu. Our plan is to conduct approximately 50 questionnaires. We will choose a method that will give a representative sample of households in Kibugu. The main object is to identify financial institutions and the people using them. The questions concern household definition and structure, agricultural practices, financial assets, and microcredit information. We hope to obtain quantitative data which may be a foundation for semi-structured interviews (SSIs) and/or focus groups.

After the data from the questionnaires is analyzed, another follow-up questionnaire will be handed out. This follow-up questionnaire will be handed out to respondents who stated that they take/have taken loans in order to examine and identify types of financial institutions operating within Kibugu, as well as types of loans, and how the loans are utilized.

A translator will also accompany us when handing out the questionnaires to translate the questions to the respondents. We will carry out pilot tests before handing out the final questionnaires to exclude unnecessary, complex and/or confusing questions.

Semi-Structured Interviews (SSIs)

- Executors: Project group + translator
- Participants: Farmers in Kibugu, political officials, financial workers in Kibugu and Embu

Our team will conduct SSIs with a range of different actors in the field setting. We plan to speak with farmers of different demographics, as well as government officials and members and representatives of different microfinance institutions. These interviews will give us a deeper understanding of the institutional influences at work. A variety of questions will be developed before the interview to be used. SSIs will be conducted with the help of a translator. SSIs will be recorded; key components will be transcribed.

Participatory Observations

- Executor: Project group
- Participants: All relevant actors

We will conduct participant observations throughout our stay in Kibugu; specifically when we do our interviews and interact with people, and also at other times we judge relevant. We hope to gain insight into access to microcredit and its utilization through interactions with our host families and other members of the village. We will listen and speak minimally.

Focus Groups

- Executor: Project group + translator

- Participants: To be determined

Focus groups may be used towards the end of the research period in Kibugu if we establish that they may contribute to further understanding of a topic, e.g. decision-making powers within household, choice of financial institution, access to microcredit or microcredit utilization. Composition of the focus groups and discussion themes will be planned and created during the research in Kibugu. Examining data from questionnaires, SSIs and PRAs will help us decide who to invite to focus group sessions.

References

Cheeseman, N., Lynch, G. & J. Willis (2016). Decentralisation in Kenya: the governance of governors *. *Journal of Modern African Studies*, vol. 54, no. 1, pp.1–35

Embu County Government (2016). Embu County Government - Land of Opportunities. Website. Last updated. 2016. Last accessed 15th Feb. 2019. Available at:
URL: < https://www.embu.go.ke/>

Embu County Government (2018). Finance & Economic Planning Annual Progress Report 2017/2018. Embu County Government - The Land of Opportunities, August 2018, pp. 1-70. Last accessed 15th Feb. 2019. Available at: URL: <http://www.embu.go.ke/wp-content/uploads/2018/11/Annual-Progress-Report-2017-2018-min.pdf >

FSD Kenya, Government of Kenya, UKaid, The World Bank, Embassy of Sweden - Nairobi, Agence Francaise de Developpement & Bill and Melinda Gates Foundation (2012). Transforming microfinance in Kenya, the experience of Faulu Kenya and Kenya Women Finance Trust. *FSD Kenya - Financial Sector Deepening, Frankfurt School of Finance & Management, Bankakademie HfB*, pp. 1-26. Last accessed 15th Feb. 2019. Available at:
URL:<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>

Kaburi, S., Ombasa, B., Omato, D., Mobegi, V. & F. Memba (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*, vol. 2, no. 5, pp. 34-39

Kenya Agricultural Programme, Republic of Kenya, World Bank Group & CIAT (2016). Climate Risk Profile Embu County Highlights. Kenya County Climate Risk Profile Series, pp. 1-24

Kodongo, O. & Lilian G. Kendi (2016). Individual Lending versus Group Lending: An Evaluation with Kenya's Microfinance Data. *Review of Development Finance*, vol. 3, no. 2, pp. 99–108

Kenya National Bureau of Statistics (2018). Basic Report - 2015/16 Kenya Integrated Household Budget Survey (KIHBS). *Kenya National Bureau of Statistics - keeping you informed,* pp. 1-210. Available at:
URL: <https://sun-connect-news.org/fileadmin/DATEIEN/Dateien/New/KNBS_-_Basic_Report.pdf>

Lock, R. & H. Lawton Smith (2016). The impact of female entrepreneurship on economic growth in Kenya. *International Journal of Gender and Entrepreneurship*, 8(1), pp.90–96.

Mganga, K., Musimba, Z. & N. Nyariki (2015). Combining Sustainable Land Management Technologies to Combat Land Degradation and Improve Rural Livelihoods in Semi-arid Lands in Kenya. *Environmental Management*, vol. 56, no. 6, pp. 1538–1548

Narayanasamy, N. (2009). *Participatory rural appraisal, principles, methods and application*, SAGE Publications India Pvt. Ltd., New Dehli, India, pp. 41-74

Okech, J.E.A. & M. Kimemia (2012). Professional Counseling in Kenya: History, Current Status, and Future Trends. *Journal of Counseling & Development*, vol. 90, no. 1, pp.107–112

Ombogoh, D.B., Tanui, J., McMullin, S, Muriuki, J & J. Mowo (2016). Enhancing adaptation to climate variability in the East African highlands: a case for fostering collective action among smallholder farmers in Kenya and Uganda. *Climate and Development*, vol. 10, no. 1, pp.61–72

Omino, G. (2005). Regulation and Supervision of Microfinance Institutions in Kenya. Essays on Regulation and Supervision, *Microfinance Regulation and Supervision Resource Center - Central Bank of Kenya*, p. 1-7. Last accessed 15th Feb. 2019. Available at: URL:<http://www.findevgateway.org/sites/default/files/mfg-en-paper-regulation-and-supervision-of-microfinance-institutions-in-kenya-mar-2005.pdf>

Rahman, W.A.A. (2010). An overview of microfinance: history and evolution, definition and practice. *The free library,* December, 1. Last accessed 15th Feb. 2019. Available at: URL:<https://www.thefreelibrary.com/An+overview+of+microfinance%3A+history+and+evolution%2C+definition+and...-a0374921305>

Republic of Kenya - Ministry of Agriculture, Livestock and Fisheries, Food and Agriculture Organizations of the United Nations, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, UNDP & World Bank (2017). Kenya Climate Smart Agriculture Strategy 2017-2026. *Government of the Republic of Kenya*, pp. 1-100

Vizcarra, V., Ngahu, J.I. & M. Ramji (2017). Mobile financial services in microfinance institutions: Musoni in Kenya (English). IFC mobile money toolkit. Washington, D.C.: World Bank Group. Last accessed 15th Feb. 2019. Available at: URL: <http://documents.worldbank.org/curated/en/509011500445237213/Mobile-financial-services-in-microfinance-institutions-Musoni-in-Kenya>

United Nation Development Programme. (2019). Goal 1 Targets. UNDP. Website. Last accessed 21st Feb. 2019. Available at: <URL: https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-1-no-poverty/targets.html>

Wheeler, T. and Braun, J. (2013). "Climate Change Impacts on Global Food Security". *Science.* vol. 341, no. 6145, pp. 508-513

World Bank (2018). Agriculture Finance & Agriculture Insurance. Website. The World Bank. Last accessed 21st Feb. 2019. Available at: <URL: http://www.worldbank.org/en/topic/financialsector/brief/agriculture-finance>

Appendix 1 – Data Matrix

Table 1: Data Matrix

Main objective	Phase	Sub-questions	Informants	Methods	Learning outputs	Research inputs
How are demographic differences reflected in the choice of microfinance institutions and how is microcredit utilized in Kibugu, Embu county?	Identify	1. What kind of institutions?	Farmers, Financial workers and political officials	Questionnaires, Focus groups, GPS mapping, Participant observation, PRA's	Identify MFIs, political institutions, social	GPS, pens, pencils, paper, sound recorder, translators, participants.
		2. Identify types of assets?	Farmers	Questionnaires, GPS mapping, Participant observation, Semi-structured interviews	Identify human, social, natural, financial, and physical capital	
		3. Who uses microcredit and who does not?	Farmers, Financial workers	Questionnaires, GPS mapping, Participant observation, Semi-structured interviews	Get an overview of demographic differences in use of microcredit	
		4.What is microcredit used for?	Farmers	Questionnaires, GPS mapping, Participant observation, Semi-structured interviews	Identification of microcredit investment	
	Characterize	5. What are the characteristics of the MFIs?	Financial workers and political officials	GPS mapping, Participant observation, Semi-structured interviews	Loan structure, borrower requirements	Pens, pencils, paper, sound recorder translators, participants.
		6. What are the characteristics of individual/group borrowers?	Farmers, financial workers	Questionnaires, GPS mapping, Participant observation, Semi-structured interviews	Social structures, informal MFIs	
		7. What are the characteristics of investments?	Farmers, financial workers	Questionnaires, GPS mapping, Participant observation	Understanding of microcredit utilization	
	Analyze	8. Analyze farmers' rationale for decisions of choice of lender.	Farmers, other relevant actors to be identified	GPS mapping, Semi-structured interviews	Understand how assets affect farmers' decisions to make loans.	Pens, pencils, paper, sound recorder, translators, participants.
		9. Analyze access and barriers to microcredit access.	Farmers, financial workers	GPS mapping, Semi-structured interviews	Understand institutional factors and obstacles to microcredit access.	
		10. Analyze farmers' rationale for decisions of microcredit expenditures.	Farmers, other relevant actors to be identified	GPS mapping, Semi-structured interviews	Understand reasons and motivations farmers choose to (or not to) obtain credit from different financial institutions?	

Appendix 2: Proposed Research Time Schedule

Table 2: Time Schedule

Date	Morning	Afternoon	Evening	Extra
28.2	Meeting with Kenyan students at Wida Motel			
1.3	Travel to Kibugu	Installation	Prepare	
2.3	Questionnaires	Questionnaires	Analyze, debrief, plan	*GPS, Participatory observations*
3.3	Church service	Questionnaires	Analyze, debrief, plan	*GPS, Participatory observations*
4.3	Wangari Maathai Day	Questionnaires	Analyze, debrief, plan	*GPS, Participatory observations*
5.3	PRA social mapping	PRA mind mapping	Analyze, debrief, plan	*GPS, Participatory observations*
6.3	SSI in Kibugu/Embu	SSI in Kibugu/Embu	Analyze, debrief, plan	*GPS, Participatory observations*
7.3	SSI in Kibugu/Embu	SSI in Kibugu/Embu	Analyze, debrief, plan	*GPS, Participatory observations*
8.3	SSI in Kibugu/Embu	SSI in Kibugu/Embu	Analyze, debrief, plan	*GPS, Participatory observations*
9.3	SSI in Kibugu/Embu	(Focus Group)	Dinner party for all students	*GPS, Participatory observations*
10.3	Buffer day	prepare presentation	Debrief, plan	
11.3	Feedback meeting in Kibugu			
12.3	Back to Nairobi			

Appendix 3: Questionnaires

Table 3: General Microcredit Questionnaire Table

MFI General Table	1	2	3	4	5
Where you borrow money. (1 is first choice)					
Group or organization you borrow money from.					
Name of group or organization.					
Where you interact with it (Physical location or agent, M-Pesa)					
How often do you borrow money					
When did you last borrow money from them?					
How much money do you usually borrow from them?					
What do you spend most of the money on?					

Table 4: Recent Loans Questionnaire Table

Recent Loan Table Month and year of loan:	1 (most recent)	2	3	4	5
Recent Loan Value					
Are you a member of this organization?					
How were you introduced to this organization?					
MFI name?					
Is it a group or individual loan? (G/I)					
How long did/do you have to repay the loan in full?					
How often were your repayments?					
What was your interest rate?					

Table 5: Physical Assets Questionnaire

Physical Assets Table (for example, farm equipment, buildings, animals, household goods, etc.)	1 (highest valued)	2	3	4	5
Rank your most valuable things.					
Estimate each thing's worth in KSh.					
What did this thing cost you?					
Did you take a loan to buy this thing? If so, how much?					
Why is this thing important for you?					

Initial Questionnaire (next page)

Initial Questionnaire

Introduction

Hi. Our names are Theresia, Ian and Anne. We are students from the University of Copenhagen and the University of Nairobi. We are conducting research in agriculture, farming practices, and finances. We kindly ask you to participate in our short questionnaire. We will keep all your answers and information completely anonymous.

Questionnaire information

1. **Date**

2. **Location**

3. **GPS coordinates**

4. **Students present**

5. **Translator**

Personal information

6. **Name**

7. **Gender**
   Check all that apply.
   - ☐ Male
   - ☐ Female

8. **Age in years**

9. **Civil status**

Check all that apply.

- [ ] Married
- [ ] Single
- [ ] In a relationship
- [ ] Divorced
- [ ] Living together
- [ ] Separated (not living together)
- [ ] Widow

10. **Highest level of completed education**

Check all that apply.

- [ ] Primary school
- [ ] Ordinary level high school
- [ ] Advanced level high school
- [ ] University bachelor level
- [ ] University post-bachelor level
- [ ] Professional Diploma/Degree
- [ ] None
- [ ] Other, please specify:

11. **Current occupation**

Check all that apply.

- [ ] Student
- [ ] Farmer
- [ ] Housekeeper
- [ ] Off-farm employment
- [ ] Unemployed
- [ ] Retired
- [ ] Other, please specify:

Household information

12. **How many people live in your house?**

_____

13. **Who is the head of your household?**

_____

14. **How large is your farm in acres?**

_____

15. **Does your household rent land?**
Mark only one oval.

- Yes
- No

16. **If yes, how long have you rented it?**

_____

17. **Does your household own land?**
Mark only one oval.

- Yes
- No

18. **If yes, how long have you owned it?**

_____

19. **Number of people in your household working on your farm**

_____

20. **Do you buy food products to feed your household?**
Mark only one oval.

- Yes
- No

21. **How many animals do you have? Please provide the amount in the box below.** *Check all that apply.*

- Cow
- Chicken
- Pig
- Goat
- Horse
- Other, please specify:
- None

Agricultural practices

22. **Five main crops your household produces**
Check all that apply.

	To sell	To eat
1		
2		
3		
4		
5		

23. **Which of the below mentioned inputs do you use?**

Check all that apply.

- ☐ Fertilizers
- ☐ Pesticides
- ☐ Irrigation
- ☐ Machinery
- ☐ None
- ☐ Other, please specify:

24. **Challenges with the cultivation on your farm (select all that apply)**

Check all that apply.

- ☐ Labor
- ☐ Access to agricultural inputs
- ☐ Water
- ☐ Soil Quality
- ☐ Pests and disease
- ☐ Changed weather patterns
- ☐ None
- ☐ Other, please specify:

Financial information

25. **How much does your household earn per month from each income source** *Check all that apply.*

- ☐ Crops: _____Ksh/month
- ☐ Livestock: _____Ksh/month
- ☐ Off-farm work: _____Ksh/month
- ☐ Pension: _____Ksh/month
- ☐ Remittances:_____Ksh/month
- ☐ Financial support:_____Ksh/month
- ☐ Other, please specify:_____Ksh/month

26. **How much do you earn per month from each income source**

Check all that apply.

- ☐ Crops: _____Ksh/month
- ☐ Livestock: _____Ksh/month
- ☐ Off-farm work: _____Ksh/month
- ☐ Pension: _____Ksh/month
- ☐ Remittances:_____Ksh/month
- ☐ Financial support:_____Ksh/month
- ☐ Other, please specify:_____Ksh/month

27. **Do you have money in a savings account?**

Mark only one oval.

- Yes
- No

28. **If yes, how much?**

29. **and, where?**

30. **Do you have money saved in any other places?**

Mark only one oval.

- Yes
- No

31. **If yes, how much?**

32. **If yes, where?**

33. **Have you ever taken a loan or borrowed money?**

Mark only one oval.

- Yes
- No

34. **In average, how many loans do you take per year or how many times do you borrow money per year?**

35. **Where did you take the loan or borrow the money from?**

Check all that apply.

- Sacco
- Church
- Bank
- Cooperative
- Family member
- Friend
- Neighbor
- Other, please specify: