

**IMPACT OF RURAL SAVING AND CREDIT COOPERATIVE ON
FOOD SECURITY AND INCOME OF INDIVIDUAL HOUSEHOLDS:
IN THE CASE OF YENESANET FANA SAVING AND CREDIT
UNION, OF GURAGE ZONE, SOUTHERN NATIONS,
NOTIONALITIES AND PEOPLES' REGION (SNNPR)**

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Development

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Addis Ababa, Ethiopia

DECLARATION

I hereby declare that the Dissertation entitled: **Impact of Rural saving and credit cooperative on food security and income of individual households: In the case of Yenesanet Fana RUSACCO union.**

Submitted by me for the partial fulfillment of the M.A in Rural Development to Indira Gandhi National open University,(IGNOU) New Delhi is my own original work and has not been submitted earlier either to IGNOU or any other institution for the fulfillment of the requirement for any course of study. I also declare that no chapter of this manuscript in whole or in part is lifted and incorporated in this report from any earlier work done by me or others.

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LIST OF ABBREVIATIONS

AE	Adult Equivalent
AIDB	Agricultural and Industrial Development Bank
ASToL	Above Standard of Living
BSToL	Below Standard of Living
CSA	Central Statistical Authority
DES	Dietary Energy Supply
DI	Disposable Income
EfD	Evidence for Development
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
HH	Household
IHM	Individual Household Method
NGO	Non-Governmental Organization
RSCA	Rotating, Saving and Credit Association
RUSACCO	Rural Saving and Credit Cooperative
SACCO	Saving and Credit Cooperative
SHA	Self Help Africa
SNNPR	South Nation Nationalities and peoples Region
SPSS	Statistical Measures for Social Sciences
UNDP	United Nation Development Program
UNPF	United Nation Population Fun

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ABSTRACT

RUSACCO has become one of the popular financial services that supports the resource poor urban and rural people's efforts of escaping from miserable poverty and food insecurity problem. It has also been taken as one of the rural finance that provides financial services such as credit and savings to enable the rural households to improve their income and diversify their source of income that will help them to minimize the probability that they will easily experience the food insecurity problem. In this study an attempt has been made to see whether the users of Yenesanet Fana RUSACCO union have been enjoying this benefit or not. More specifically, an attempt has been made to see whether the RUSACCO member households are able to improve their food security situation after their involvement in the program. To this end, certain food security indicators have been used and the users were approached to provide information along these indicators by comparing the non-RUSACCO member and RUSACO member households. In connection to this they were also made to describe their source of food and cash income (agriculture and livestock produced, consumed and soled, employment, transfer; remittance and wild food consumed were assessed). To this end the sample of 71 RUSACCO member households and 60 non-RUSACCO member households has been randomly selected and the data collected from this sample have been analyzed mostly descriptively. Accordingly, it has been found that the majority of the service user's have observed positive change on the food security indicators that have been used in this study after their participation in RUSACCO program. Moreover, the great majority of the users included in the study have reported that RUSACCO program has helped them in improving their disposable income, living standard threshold, overall asset, the yearly farm harvest, and on food intake in kilo calories, implying that the program is playing some positive role in their household level food security ensuring efforts. However, though they recognize this role of the financial services they receive from the institution most of the users have voiced certain complaints on institutions services like the size of loan, access to loan and loan repayment and schedule.

Chapter 1. Introduction

1.1 Background

1.1.1 Agriculture in Ethiopia

Ethiopia is one of the largest countries in Africa both in terms of land area (1.1 million km²) and population is the second most populous country in Africa (UNFP, 2005). The Ethiopian economy is based mainly on agriculture which provides employment for 85 % of the labor force and accounts for a little over 50 per cent of the GDP and about 90 per cent of export revenue (CSA, 2002). In spite of huge agricultural potential, the growth in agricultural production has not been able to keep pace with that of the demand. In fact, a high proportion of cultivated land is owned by subsistence farmers who produce about 97 % of the national agricultural output (Wolday, 1999). The Ethiopian agriculture is characterized by its very low productivity with grain yields reported for various crops varying between 5.1 and 9.6 quintals per hectare over the 1960/61-1991/92 period (Belay, 1998).

According to CSA (2004), the level and distribution of poverty in Ethiopia is extensive. The 1995/96 and the 1999/2000 Household Income, Consumption and Expenditure Survey and Welfare Monitoring Survey of the Central Statistical Authority (CSA) show that about 44 percent of the total population (45 percent in rural areas and 37 percent in urban areas) are living below poverty line. The causes of poverty in Ethiopia are in one way or another

related to inappropriate social and economic policies, mismanagement of natural resources, lack of developed physical and human capital, and lack of well organized and sustainable institutions. Among these, lack of well-organized and sustainable institutions was recognized to be the main bottleneck that militates against any attempt of eradicating poverty. In the past several years a lot of efforts have been made to reduce poverty. However these efforts could not come up with a remarkable outcome at grass root level. Thus formulating policies on human development (educating the society), building sustainable institutions and fostering financial accessibility are crucial for the self-driving and sustainable eradication of poverty (Agrawal, 1994).

Generally the accessibility of a good financial service is considered as one of the engines of economic development. The establishment and expansion of financial service is also one of the instruments to break the vicious circle of poverty. Governments of less developed countries have frequently practiced the policy of providing cheap credit to the agricultural sector through financial intermediaries. This cheap credit, it was hoped, would lower the dependence on the rural money lenders (Pinaki, 1998).

The provision of credit has increasingly been regarded as an important tool for raising the incomes of rural populations, mainly by mobilizing resources for more productive uses. As development takes place, one question that arises is the extent to which credit can be offered to the rural poor to facilitate their taking advantage of the developing entrepreneurial activities. However, at low

levels of income, the accumulation of such capital may be difficult. Under such circumstances, loans, by increasing family income, can help the poor to accumulate their own capital and invest in employment-generating activities (Hossain, 1988).

In Ethiopia, the rural financial system is dichotomous in nature. The formal and informal sectors co-exist, with differences in accessibility. The two sources continue to be the major sources of agricultural credit, though their proportion differs. According to Singh (1993) the basic distinction between the formal and informal sectors is that the latter operates outside the rules and regulations imposed on the farmer by the formal financial institutions. Formal and informal credit is imperfect substitutes. In particular, formal credit, whenever available, reduces, but not completely eliminates, informal borrowing. This suggests that the two forms of credit fulfill different functions in the household's inter-temporal transfer of resources. Commercial banks and other formal institutions fail to cater to the credit needs of smallholders, however, mainly due to their lending terms and conditions. It is generally the rules and regulations of the formal financial institutions that have created the myth that the poor are not bankable, and since they can't afford the required collateral, they are considered un creditworthy (Adera, 1995). Despite efforts to overcome the widespread lack of financial services, especially among smallholders in developing countries, and the expansion of credit in the rural areas of these countries, the majority still have only limited access to bank services to support their private initiatives (Braverman and Guasch, 1986). Financing of

agricultural inputs and labor wages requires liquid cash that often is not readily available with the smallholder farmers. Therefore, it is essential to expand the status of rural credit at large to improve agricultural productivity.

1.1.2 Cooperative in Ethiopia

According to Wolday (2004), the cooperative movement in Ethiopia took birth in 1950s. Actually the first saving and credit cooperative in Ethiopia was established by the employees of Ethiopian Road Authority in 1957. This was followed by the SACCO of Ethiopian Airlines (1964). During the period between 1960 and 1978, 140 cooperatives with a total membership of about 44,000 were established in the country. Derg, after issuing Proclamation No. 138/78 established agricultural producers' cooperatives and service cooperatives, organized 13,546 cooperatives with a membership of about 10 million by 1990.

International donors, NGOs, and the government in Ethiopia have supported the expansion of credit services to the rural poor since 1970s. The delivery of rural credit in Ethiopia through formal banks such as agricultural and Industrial Development Bank (AIDB) using the cooperatives was one of the interventions to provide input loans to farmers. The CBE started providing input credit in 1994. The CBE provides input loans to importers and wholesale traders and regional governments. The bank was providing input credit mainly for chemical fertilizer and improved seeds through intermediaries like Service Cooperatives, Peasant Associations and farmers groups.

According to information obtained from the cooperatives commission, in early 2004, there were a total of 7,366 primary cooperatives and 50 unions, with approximately 4 million members and Birr 516 million share capital, in the country. Of the primary cooperatives, 3,982 were multi-purpose cooperatives operating in the agricultural sector. The numbers of other types of cooperates were: housing 2,108, SACCOs 688, handicraft 79, consumer 15, mining 9, and others 82. The unions are specialized by function and cover marketing of inputs and grain (41), coffee (4), fruits and vegetables (2), milk (1); sugar cane (1), and saving and credit (1). At present there are no cooperative federations (Wolday, 2004).

1.1.3 Saving and credit cooperatives in Ethiopia

Currently, there are 8,220 saving and credit cooperatives (SACCOs), or primary credit unions, in Ethiopia located throughout the country. They serve nearly 620,000 members and average less than 100 members each. SACCOs are primary cooperatives that include both urban and rural saving and credit cooperative (RUSACCOs) and form RUSACCO Unions. RUSACCOs alone have mobilized about 250 million Ethiopia birr (about US \$ 15 million) as of June 30, 2011, from their rural members. Since RUSACCOs provided loans based on a multiple of the member's savings, a high number of farmers in rural Ethiopia have formal saving accounts. Nonetheless, members primarily use saving accounts to access loans, and RUSACCOs have struggled with mobilizing low levels of liquidity to deliver an adequate amount of credit to their members.

In general SACCOs have comparative advantage over other financial service providers, characterized by their presence at community level and their ownership and operational nature, which helps to improve financial inclusion in the rural areas. Indeed, SACCOs have their own peculiarities that can be considered as opportunities. SACCOs are self-owned, self-governed, self-financed and self-help organizations. These characteristics of SACCOs are useful to expand financial services in rural settings and for contributing to the development of civil society.

1.2 About the project

The role of Shelf Help Africa (SHA)

Self Help Africa (SHA) is one of the few NGO's initiating and organizing RUSACCOs in Oromia and SNNPR. The limited access to institutional finance and the contribution of micro-finance in poverty reduction has inspired SHA to promote community-based rural financial organizations. The SHA intervention for RUSACCOs has two important and interrelated objectives: primarily, the objective of RUSACCO development is to improve access to institutional finance for the rural community in general and rural poor in particular (mainly women), as one of the tools to reduce rural poverty and improve rural livelihoods; and the second objective is to build community owned sustainable rural financial organizations that are owned and managed by the rural community. So in effect, SHA is supporting the rural community to build their own financial organization and create access to institutional finance for their own community.

SHA has been developing SACCOs gradually, which is essential in developing financial institutions. Developing SACCOs on a gradual basis helps to acquire and augment knowledge and experience to manage rural finance on a sustainable basis. However, the rural SACCO sector in Ethiopia is still in its infancy with limited financial and management capacity and a weak institutional framework. Thus, SHA intervention in RUSACCO development is intended to help address the challenges facing the sector and contribute to the long term growth and viability of RUSACCOs in the country. Currently Self Help Africa (SHA) has distributed small loans to over 40,353 people in two regions of Ethiopia, to support the development of on and off-farm enterprise as a means of generating an income.

Self Help Africa's RUSACCO program has support the formation of 302 primary cooperative and five Cooperative unions, of which Yenesanet Fana RUSACCO union is my target project area. The unions cover 18 district of Oromia and SNNP Regions. Training, management support, mentoring and financial assistance are the main activities of the program. Members-run RUSACCOs have a comparative advantage as financial providers, and particularly so in rural communities where less than 15% of households have access to credit. In 2013 Self Help Africa, in collaboration with the Irish League of Credit Unions Foundation and Terrafina Microfinance, is implementing a new phase of its RUSACCO program. The program aims to promote higher levels of financial inclusion, and support rural families to access credit with which to develop enterprise and new income- generating opportunities. In the coming years the

RUSACCO program will seek to improve the operational and financial capacity of RUSACCO unions, thus supporting these unions to deliver sustainable financial service to their members.

1.3 Statement of the Problem

1.3.1 Lack of access to rural credit

Credit provision is one of the principal components of rural development, which helps to attain rapid and sustainable growth of agriculture. Rural credit is a temporary substitute for personal savings, which catalyses the process of agricultural production and productivity. To boost agricultural production and productivity farmers have to use improved agricultural technologies. However the adoption of modern technologies is relatively expensive and small farmers cannot afford to self finance. As a result, the utilization of agricultural technologies is very low. It is argued that enhanced provision of rural credit would accelerate agricultural production and productivity (Briquette, 1999).

Schmidt and Kropp (1987) stated that access to financial services by smallholders is normally seen as one of the constraints limiting their benefits from credit facilities. However, in most cases the access problem, especially among formal financial institutions, is one created by the institutions mainly through their lending policies. This is manifested in the form of prescribed minimum loan amounts, complicated application procedures and restrictions on credit for specific purposes. They further argue that the type of financial institution and its policy would often determine the access. Where credit

duration, terms of payment, required security and the provision of supplementary services do not fit the needs of the target group, potential borrowers would not apply for credit even where it exists and when they do, they would be denied access. In addition, formal credit schemes do not typically take gender into account in practice; they tend to be biased towards men. It is the male headed household which is usually approached and registered for the provision of institutional credit (Ellis, 1992).

In Ethiopia there is a wide gap between owned and required capital to finance the agricultural activities of small holder farmers since the income from subsistence agriculture does not yield much surplus beyond family consumption and other social obligations. The lack of access to capital in rural areas is one of the major factors which hinder the development of agriculture (Tefera, 2004). According to the Micro-start Project document of UNDP (1999), the economically active poor in Ethiopia who can potentially access financial services were about 6 million. Out of this, about 8.3% of the active poor had gained access to the licensed microfinance institutions.

The non-formal credit unlike the formal credit sources as indicated by G/Yohannes (2000), have easy access to information about their borrowers with whom they have social relations. This permits credit contracts to play a more direct role in enforcing repayment. Also, the fact that collateral is rarely used in the informal sector enables it to flexibly satisfy financial needs that cannot be met by the formal financial institutions. On the other hand, in the

formal credit system, credit is disbursed without thoroughly assessing the socio-economic condition of the community. Most of the programs were supply-led and mostly attached to agricultural technology package programs. Credit is provided without sufficient information about the community in relation to their attitude towards credit.

1.3.2 Food insecurity

Similarly food insecurity is another area of problem of small holder farmers living in Gurage Zone, Yenesanet Fana RUSACCO union working area that includes (Sodo, Mareko and Meskan) significant parts are characterized by persistent food insecurity. While droughts and other disasters (such as floods) are significant triggers, more important are the factors which create and/or increase vulnerability to these shocks and which have undermined livelihoods. These factors include land degradation, limited household assets, low levels of farm technology and farm land, Lack of credit access, lack of employment opportunities and population pressure. As a consequence, but also exacerbating the situation, levels of education are low and disease prevalence is high. Prior to 2005, the typical response to this persistent food insecurity was emergency relief resourced through an unpredictable annual appeals process.

Although relief was provided, often at great expense, it was rarely adequate or timely. As a consequence, households were forced to sell assets (further constraining their livelihood options); and to restrict consumption (with immediate impacts on increasing the risk of disease and longer term impacts

on chronic malnutrition). In 2003, following significant rains shortages, majority of households required assistance and chronic malnutrition stood in mostly lowland areas of the union. This study was intended to deal with the following research questions; do households who gain access to credit through rural saving and credit cooperatives programs improve their living condition? And if so, how much and in what ways do households and their individual members benefit? In particular, does access to saving and credit contribute to the food security of individual households as a whole and improve the household income?

1.4 Objectives

The general objective of this study is to assess the Impact of saving and credit cooperative to household food security and income in Yenesanet Fana saving and credit cooperative Union in Butajira area of Gurage Zone, SNNPR. To do this, comparisons has been made between those households who are directly benefited from the saving and credit cooperative services with those who are not. The following objectives have been assessed:

1. To assess Impact of Rural Saving and credit cooperatives to individual households' disposable income.
2. To assess the living standard of RUSACCO members.
3. To assess the impact of RUSACCO on individual households food intake in kilocalories as WHO standard.

4. To assess individual household source of income and household asset ownership.

1.5 Significance of the study

In Ethiopia, few RUSACCO based development interventions have so far tried by both government and non-government organizations in attaining household based food security. These development interventions are focusing on income generating activities through (agriculture, livestock rearing and fattening, petty trade) and the like which are important for intra- and inter-individual household food security in broad term. In principle the nation may attain its food security by simply producing large amount of food but in the mean time many households may suffer from food insecurity. Thus, national and/or household food self-sufficiency is necessary but not sufficient conditions for household food security because of the fact that, food insecure households are scattered across the nation. Therefore, development interventions that are targeting the poor at household level can bring about meaningful food security on the ground. Thus, the significance of this study is as follows: First, it paves the way on how individual households can be integrated into the cash economy through RUSACCO oriented microfinance services. Small holder households can diversify their incomes by accessing financial resources. These diversified incomes can also be used to improve the rural poor household food security.

Second, RUSACCO member poor households can cope up with droughts and other food crises using credit services instead of selling their productive assets. If these kinds of facilities are put in place in the rural area where food insecure

poor households living, the impacts of drought can be reduced and the rate of recovery from drought can also be minimized. Third, this study is significant for policy makers, planners, governmental and non-governmental organizations working in the areas of household food security and RUSACCO promotion. Finally, the study is significant for community based organizations especially women groups who are striving to address the food security situation of their families.

1.6 Scope and Limitation of the Study

The study aims to assess the impact of Yenesanet Fana RUSACCO union on food security and income of member individual households through comparison of members and non-members. The scope of the study will be limited to Sodo, Mareko and Meskan district of Gurage Zone, Yenesanet Fana RUSACO union working area. This is mainly because of limited availability of resources and time to undertake the study on a wider scale. Some of the farmers were reluctant to frankly respond to some of the questions, and also as farmers do not keep records and due to memory lapse, some of the questions lack exact answers.

1.7 Organizing of the dissertation

This research paper comprises five chapters. The first chapter that is the introductory part contains the background, problem statement, and objective of the study, significance, and scope of the study. This chapter also includes the constraints that have been encountered in the process of carrying out the study.

Definitions, concepts, principles, and theories of food security and microfinance with reference to RUSACCOs were reviewed from the previous works under the second chapter. This background information on the subject matter was obtained from books, magazines, journals, research articles and workshop proceedings.

The third chapter treated the research design and methodology of the thesis in general and type of the study, variables used in the study, sampling frame and sampling population and methods used to draw samples, data sources, data collection instruments, and the method of data analysis were depicted in particular in this chapter.

The fourth chapter, which is the main theme of the thesis, constitutes the impact of RUSACCOs on individual household food security. Hereunder, profile of RUSACCO members and non-members, agriculture and livestock produced, consumed and soled, employment, transfer; remittance and wild food consumed were assessed. Data presentation, analysis, discussion and interpretation were made in this chapter. The final chapter presents the summary of findings, conclusion and recommendations that were deemed necessary on the subject of study. These recommendations were given on the bases of the research findings in the preceding chapter. These recommendations were meant for indicating directions on alternative development interventions and livelihood improvements at grass root level with the help of RUSACCO services.

Chapter 2. Literature Review

2.1 Conceptual Literature

2.1.1 Definitions and Concepts of Household Food Security

Food Security is nothing but the access of all people at all times, have physical and economic access to sufficient, safe and nutrition food for healthy and active life (Yared, 2001). This definition involves four concepts and conditions. First, there is a need to have adequate food supply or availability of food. Second, there is a need to have stable supply without fluctuations or shortage from season to season or from year to year. Third, accessibility to food and the subsequent affordability and fourthly, there is a need to have quality and safe food to eat. Maxwell (1991) defined food security in that, food security is achieved when a country or people are food secure when their food system operates efficiently in such a way as to remove the fear that there will not be enough food to eat. According to him, food security will be achieved when equitable growth ensures that groups have sustainable livelihoods. Thus, food security requires the efficient and equitable operations of the food security system. The essential elements of food security are the availability of food and the ability to acquire it, which seems to mean securing enough to eat either by production, purchase, exchange or gift.

Based on this, there are more than 200 definitions and 450 indicators of food security used by scholars, development practitioners and governmental and non-governmental agencies (Hoddinott, 2001). Food security especially at

household level is dependent on the level of household resources (capital, labor, knowledge) and prices of all these. More importantly, adequate access to food can be achieved without households being self-sufficient in food production. This means that the ability of household to generate sufficient income, which together with own production can be used to meet food needs. In the household food security, the situation of individual food security needs to be raised to make sure how food is allocated within the household and biological utilization of the available food. In the first condition, in households where distribution is unequal, it is possible for aggregate access to improve and for individuals to experience no change in their food security status. In the second condition, the ability of the human body to take food and translate it into either energy that is used to undertake daily activities or is stored. Food utilization requires not only an adequate diet, but also a healthy physical environment and an understanding of proper health care, food preparation, and storage processes.

The concept of food security has spatial and temporal dimensions. The spatial dimension refers to the degree of aggregation at which food security is being considered. It is possible to analyze food security at the global, continental, national, sub national, village, household and individual level. The temporal dimension refers to the time frame over which food security is being considered.

In many literature of food security, a distinction is made between chronic and transitory food insecurity. Chronic food insecurity is the inability to meet food needs on a going basis where as the transitory food insecurity is when there is inability to meet food needs for temporary nature. Transitory food insecurity can also be further categorized into cyclical where there is regular pattern to food insecurity and temporary, which is the result of a short- term, exogenous shock such as drought or floods.

2.1.2 Determinants of Household Food Security

In much literature of food security three core determinants of household food securities are drawn (Omosa, 1998; Alamigir and Arora, 1991; Hubbad, 1995; and Gittinger, et.al, 1987). These distinctions include availability, access and utilization dimensions. Availability factor refers to the preference of sufficient food for all people through production and purchase. Availability of sufficient food is determined by domestic food stock, commercial food imports, food aid and domestic food production. The general environment, household resources and shocks determine the household access to food. The household resources include the household income, intra-household distribution of income, price of food and bargaining power of the household. Thus, food insecurity can be traced back to lack of adequate purchasing power. Basically, there are four forms of household entitlements, which can be converted into purchasing power such as production based, own-labor, trade based (inheritance) and exchange (Drez and Sen, 1989). A household would be afflicted by food insecurity if the purchasing power obtained from the sum of these entitlements

at a given period of time, were not adequate to meet target consumption levels. The capacity of a household's purchasing power would be dependent on not only on the size of these ownerships but on the prices of these ownerships relative to the price of food. Similarly, the country's political environment, marketing systems, food import conditions, and monetary policies and so on affect the access of household to food. The access to food by a particular household is also determined by whether there is shock or not. These shocks can be defined by the presence of droughts, natural disasters and conflicts.

The other core determinant of household food security is the utilization dimension- the appropriate use of the available food. The feeding patterns, the cooking processes, the women's time, and the conditions of health of household members determine the utilization dimension. Determinants of food security can be measured by food production, food stock, export, and import of food in the case of availability. In the case of food accessibility, it can be measured through household income and expenditure, which constitute household composition, household expenditure patterns, calorie intake, consumption of major products and socio-economic characteristics. The household access to food can also be measured through adult equivalent units or weighting based on caloric requirements. This kind of concept allows a number of measurements to be computed including food energy deficiency, diet quality, and vulnerability. It further, allows identifying target groups and monitoring interventions and it seems more reliable where as in the case of food utilization, individual dietary surveys are carried out to judge accuracy of diet

to meet requirements and identify linkages between dietary risk factors and health outcomes. According to FAO, the real indicator used in measuring food utilization is dietary energy supply (DES) reflected in the kilocalorie, thus food insecure is the proportion of population whose daily food consumption is below the minimum daily requirement (2200Kcal/day). In the case of Ethiopia, the total calorie intake per individual per day is 2211kcal (CSA, 2001), which is almost equal to the minimum requirement.

2.1.3 Causes and Consequences of Household Food Insecurity

Food insecurity at household level arises from several causes, which include environmental risks such as (drought, disease, etc), market risk, poverty and conflict. Devereux and Maxwell (2001) stated that, the naturally most food insecure environments in the Africa are the arid and semi-arid zones where drought is a major recurring risk. Drought was originally seen as an exception that is as an unpredictable disruption of normal rainfall patterns but recently this kind of presupposition has challenged by the research on dry land ecological dynamics, which rather concluded that climatic uncertainty is a norm. This norm state, that dry land ecology is a process, which stems from episodic events originating outside the local ecological environment, drives processes. In such environment uncertainty is the key constraint to which farmers and herders must adapt.

Like the environment, conflict has become a critical influence on food security. Conflict has multiple causes such as issues over sovereignty (interstate conflict), which highly damage the food security of the inhabitants of the

disputed zones, or over issues as access to land, water or mineral resources (ethnic, political, or economic conflicts). The main immediate protagonists of such conflicts are the farmers or herders directly involved. There are always wider circles of actors including business people, politicians, the security forces and mercenaries employed by both sides. Whatever the cause of conflict may be, local conflicts have drastic consequences on the household food insecurity, and thus the direct economic outcomes include:

- ✚ Price changes for basic commodities,
- ✚ Closure of markets, with further knock-on effects on the availability and prices of staple foods and livestock,
- ✚ Induced sales of assets such as livestock at low prices,
- ✚ Loss of access to farm land, pasture or water,
- ✚ Destitution and displacement,
- ✚ Increasing political marginalization of conflict areas, and
- ✚ A breakdown of local ethnic or community relations

Based on these, the impact of conflict on the household food security is tremendous and multifaceted. At household level conflict may be seen as a cause of unpredictable risk (Devereux and Maxwell, 2001).

2.1.4 Household Food Security Indicators

Food security indicators are summary measures of one or more of the dimensions of food security used to demonstrate change or the result of a program activity for a target population. In most analyses of food security

conditions, multiple indicators are used to reflect the various dimensions of the problem. Some of the most commonly used types of indicators in the assessment of food security conditions include those related to: food production, income, total expenditure, food expenditure, share of expenditure on food, calorie consumption, and nutritional status (Riely, et.al.1999).

There are a number of indicators that have been identified with the development of the concepts of food security. However, the utilization of these indicators varies between the characteristics of the investigations, procedures and level of aggregation. The purpose and depth of investigations further influence the use of indicators. Different types of household food security indicators are classified into three main categories namely supply indicators, food access indicators and outcome indicators (Demeke, et. al, 1995 and CRDA, 2000). Below are the brief descriptions of these indicators.

1. The food supply indicators, which are reflected by

- ✓ Meteorological data,
- ✓ Information on access to resources,
- ✓ Market information,
- ✓ Institutional and market infrastructures, and
- ✓ Regional conflict, etc.

2. The food access indicators that are explained by:

- ✓ Land use practices,

- ✓ Dietary change of food source,
- ✓ Diversification of income sources,
- ✓ Diversification of livestock,
- ✓ Livestock sales,
- ✓ Sale of productive assets,
- ✓ Access to credit, and
- ✓ Seasonal migration, etc.

3. The outcome indicators such as the level and changes in food consumption and the amount of food in stores serve as proxy estimates for measuring household food situation. The following specific variables can be mentioned under outcome indicators:

- ✓ Change of household budget and expenditure,
- ✓ Change in the frequency of food consumption,
- ✓ Subsistence potential,
- ✓ Nutritional status,
- ✓ Household perceptions of food insecurity, and
- ✓ Storage estimates.

2.1.5 Credit in Rural Development

At a certain stage in agricultural development, agricultural credit clearly does become a strong force for further improvement –when a man with energy and initiative who lacks only the resources for more and more efficient production is enabled by the use of credit to eliminate the one block on his path to

improvement. Financial credit is the most flexible form of transferring economic resources to the poor. One can buy anything that is for sale with cash obtained through credit (Padmanabhan, 1996).

According to Kebede (1995), credit makes traditional agriculture more productive through the purchase of farm equipment and other agricultural inputs, the introduction of modern irrigation system and other technological developments. Credit can also be used as an instrument for market stability. Rural farmers can build their bargaining power by establishing storage facilities and providing transport system acquired through credit. Credit plays a key role in covering consumption deficits of farm households. This would, in turn, enable the farm family to work efficiently in agricultural activities. Credit can further be used as an income transfer mechanism to remove the inequalities in income distribution among the small, middle, and big farmers. Moreover, credit encourages savings and savings held with rural financial institutions that could be channeled to farmers for use in agricultural production. Credit also creates employment opportunities for rural farmers.

2.1.6 Rural Credit

2.1.6. Definitions and concepts of rural credit

According to the free on line dictionary, Encyclopedia (undated), credit means Faith and it comes from the Latin credito. An agreement, by which something of value-goods, services, or money-is given in exchange for a promise to pay at a later date. Credit is a transaction between two parties in which one, acting as

creditor or lender, supplies the other, the debtor or borrower, with money, goods, services, or securities in return for the promise of future payment. As a financial transaction, credit is the purchase of the present use of money with the promise to pay in the future according to a pre-arranged schedule and at a specified cost defined by the interest rate.

It was also defined by Ellis (1992) that credit is a sum of money in favor of the person to who control over it is transferred, and who undertakes to pay it back. Moreover, Beckman and Forster (1969), defined credit as the power or ability to obtain goods or services in exchange for a promise to pay later. Similarly, it is a power or ability to obtain money by the borrowing process, in return for a promise to repay the obligation in the future. Financial institutions are private or governmental organizations, which serve the purpose of accumulating funds from savers and channeling them to individual households, and business looking for credit. Financial institutions are composed of deposit-type institutions (bank and non-bank contractual saving institutions), personal and business financial companies, government and quasi-government agencies, and miscellaneous lenders (Greenwald & Associates, 1983).

Aryeetey *et al.*, (1997), define informal finance as referring to all transactions, loans and deposits occurring outside the regulation of a central monetary authority. In Africa it has been defined as the operations of savings and credit associations, rotating savings and credit associations (ROSCAs), professional moneylenders, and part-time moneylenders like traders, grain millers,

smallholder farmers, employers, relative and friends, as well as cooperative societies.

The concept of perception, according to Lindsay & Norman (1977), is which better describes one's ultimate experience of the world and typically involves further processing of sensory input. As stated by Rao *et al.*, (1998), the interpretation of information is called perception. These perceptions play an important role in decision making of people in general and farmers are no exception. Perceptions are relative rather than absolute and they are influenced by the surroundings to a great extent. Due to past experiences, different people can interpret the same object differently, and this in turn affects their behavior. Perceptions can even differ among the family members on various aspects of farming, credit needs and the like. For example, men and women may differ on issues like an increased herd size which adds to the workload of women, while it may increase the cash flow for the man (Rao *et al.*, 1998).

2.1.6.2 Types of rural credit

There is typically a dual rural credit market in developing countries, formal and informal credit. In the formal credit markets institutions provide intermediation between depositors and lenders charge relatively low rates of interest that usually are government subsidized. In informal credit markets money is lent by private individuals, professional moneylenders, traders, commission agents, land lords, friends and relatives (Mohieldin S. and Write W. 2000). Formal and

informal credits are imperfect substitutes. In particular, formal credit, whenever available, reduces, but not completely eliminates, informal borrowing. This suggests that the two forms of credit fulfill different functions in the household's inter-temporal transfer of resources. Despite the fact that credit is fungible, informal credit is used perhaps for consumption-smoothing purposes, while formal credit is sought and used mostly for agricultural production purposes and investment in non-farm income generating activities. The empirical evidence also suggests that the imperfect substitutability between formal and informal credit reflects to some extent the existence of due dates and conditionality on informal loan contracts (Aliou Diagne, 1999).

The establishment of formal credit institutions in the agricultural-based developing economies some 40 or more years ago was, among other reasons linked to the belief that local or informal lenders such as merchants, landlords and shop owners exploit small farmers by charging them exorbitant interest rates (Adams, 1984). The informal rural credit market is very heterogeneous and is always a component of the prevailing political, economic, and social relations net work, involving relatively low additional transaction costs for credit supply. The informal credit market was mainly relevant only for sectors that were not directly productive and through which the expenditure for social obligations was met (Manig, 1996).

2.1.7 Rural saving and credit cooperatives and Household Food Security

According to Scoones, 1995; Devereux and Maxwell, 2001, food- insecure households, both herders and farmers, are normally short of cash to buy inputs in the market. They need access to adequate credit, but the fact is that institutional credit is not available to them. Extending credit to smallholders can be a most effective way to promote food production and household food security. Herders and smallholders have difficulties in gaining access to microfinance services and RUSACCOs. The rural poor, living in remote areas and often illiterate, have trouble in understanding complicated lending formalities.

Eligibility requirements such as collateral or guarantees, have further excluded the poor small holders from traditional banking institutions. Moreover, people like Zeller, et. al, (1997) substantiated this argument in such a way that, the poor have little or no collateral to offer and the credit demand is so small. Savings, credit amounts and installments are small which raises per unit transaction costs. In addition, in the case of poor people credit needs for production and consumption cannot be clearly distinguished. Thus the spheres of production and consumption are intertwined and inseparable. Given the vulnerability of the poor, risk aversion and related insurance behavior play important roles in the credit demand of the food insecure and poor households.

Covariate risks such as droughts, flood, and seasonal and individual household crises are central problems of the poor. A better understanding of RUSACCOs institutions at the household and community levels could provide

the key to designing sustainable rural financial systems that serve the food security of the poor. On the other hand, traditional credit institutions complain that small value loans to the poor rural people have high costs. And the repayment rates are often poor, which has further eroded their interest in undertaking such loans which supposed to provide food security (Arora and Alamgir, 1991). Because of this, the rural poor have been forced to resort to exploitative, informal sources of credit. The cost of such credit is very high and it is usually used for emergency or consumption needs, marriages, etc rather than for productive investment. The poor when resort to such loans, thus entrenches their food insecurity. Providing RUSACCO and micro financial services to the poor could efficiently and effectively contribute to income generation and consumption stabilization; thereby addressing the long-term and short-term food-insecurity of the poor.

Food security at household level is defined in its most basic form as access by all the people at all times to the food needed for a healthy life (Zeller, et. al, 1997). From the practical point of view, access to adequate food is a necessary but not a sufficient condition for a healthy life. A number of other factors such as the health and sanitation environment and household or public capacity to care for vulnerable members of the society are also important conditions.

2.1.8 The Role of Microfinance and SACCOs for Household Food Security

The pattern of household response to food crises generally involves a succession of stages along a continuum that runs from long-term risk

management to crisis damage containment to the extreme instance of household collapse. The long-term risk management measures include saving and investment activities, diversification of household incomes and establishment of access to inter household transfers through social support networks that encompasses gifts, food-sharing, informal insurance and credit.

The concept of financing for food security explores the potential of financial services for stabilizing consumption and reinforcing the households' wealth and income base. This concept is much broader than that of providing credit for particular income-generating activities such as agricultural production and off-farm micro enterprise (Zeller, et. al, 1997). Many credit programs and institutions narrowly focus on the enterprise, without taking into consideration the socio-economic context within which the household or individual members invest, produce and consume. A broadened role of Rural SACCOs for food security addresses credit and savings needs for agricultural production and off-farm enterprises, and it includes other demands for financial services, such as financing food consumption and health care as well as providing households' with more effective savings, credit and insurance services for smoothing consumption, holding precautionary savings and diversifying the asset portfolio (Zeller, et. al, 1997). Rural saving and credit can provide either consumption credit or production credit for the poor to maintain their food security. Consumption can be differentiated into various types of goods such as food, spending on health care, social obligations and leisure. When they are faced with consumption crises for food and other basic non-food items, their demand

for credit will be steep in order to increase current consumption at the expense of future consumption. Furthermore, investments in human capital, for instance choice of number of children and related expenditures on education and physical production capital (land, tree, livestock, machinery, irrigation) could be specified in future extensions of current consumption. Policy instruments for improving household food security are manifold. First, it needs to increase the household income. Next, there is also a need to stabilize or lower food prices. Then there is still a need to improve the households' access to inter temporal markets (savings, credit, insurance products that require a transfer of resources overtime).

To directly address the problems of income and purchasing power during specific periods, the stabilization of key commodity prices and targeted interventions such as income transfers, food subsidies or public work projects for the food insecure are vital (Zeller, et. al, 1997). Improving the households' ability to adjust its consumption and investment between periods through access to savings, credit and insurance markets will enable households to make adjustments of disposable income and consumption in the current period, but increase it for future periods. For the food insecure households, savings in the form of cash, food and other assets are an important means of self insurance during unexpected food insecurity.

On the other hand, borrowing increases current disposable income at the expense of available income in future periods. Moreover, it enables investment

in human and physical capital that may improve future income and consumption or avoid shortfalls in current consumption. Many poor households face the risk of transitory food insecurity, even if their incomes on average provide a sustainable standard of living. There are sources of risks in rural households. The time, pattern, intensity and effects on food security of income fluctuations are difficult to anticipate for household members. Thus, there is a potential demand for savings, credit and insurance services that more efficiently contribute to consumption smoothing. As Abdil-Khalil Idris (2003) stated, during the past 40 years African governments and donors have set up credit programs aimed at improving rural households' access to credit. However, the vast majority of these credit programs especially the so-called 'agricultural development banks' which provide credit with subsidized interest rates, have failed to achieve their objectives to serve the rural poor and to be sustainable credit institutions. In response to these failures, innovative credit delivery systems are being promoted as a more efficient way of improving rural households' access to formal credit with no or minimal government involvements. Most of these lending are group based. They use joint liability and peer pressure as collateral substitutes and community based credit delivery systems to reduce transaction costs. Many literatures argue that, the Grameen Bank is the first lending institution in Bangladesh to substitute material collateral (security or guarantee) with social collateral (organized social pressure from group members) for its lending among the poor rural people. The ideology of the bank in organizing loan groups is to make each member of a

group responsible to and for the collective to enhance social solidarity (Rahman, A., 1999; Abdil-Khalil, 2003; and Omosa, M., 1998).

The provision of microfinance to the poor can be recognized as a means through which food insecurity could be alleviated more effectively. The hope is that much of the household food insecurity can be alleviated and that economic and social structures can be transformed fundamentally through the provision of financial services to poor households. RUSACCOs and food security interact through a direct linear relationship where the more funds are made accessible to the food insecure, the food security is better maintained. The provision of micro financial services to low-income households to enable them generate their income is believed to reduce their food insecurity and vulnerability more effectively.

RUSACCO services can bring substantial benefits to farming community and could play an important role in agricultural risk management. Different scholars argue that, savings and credit services can smooth consumption seasonally and between years (Swift, 2003; Scoones, 1995). Credit can help farmers replace livestock after drought. Furthermore, credit can allow productive enterprises to expand, diversify household income and reduce vulnerability to farming shocks. Credit can be provided to enable farmers to buy input or to pay for transport of their produce to better market areas. The existing little evidence indicates that saving and credit programs are conducted in a very fragmented manner, mostly by NGOs, which mainly concerned

restocking, the purchase of grain and money for investment in trade. While credit can play a very useful role in generating further economic activity, it is vital to clarify and agree the terms under which credit is being supplied and to whom.

Cash savings would allow the farming community to smooth these uneven income and consumption streams. The farming societies, RUSACCO services can have an impact on the household income, household assets, education, nutritional status, and coping strategies. Based on this, credit and savings services can have direct contribution for household income diversification, accumulation of assets like livestock, expenditures on educating their children, purchasing and consuming food with more balanced diets and coping with risks like drought, sickness and livestock diseases.

2.2 Empirical literature

The role of RUSACCOs on household's food security has been widely documented. Researches show positive role that access to financial services can have for improving income generation, food consumption, nutritional status as well as school enrolment of children: that will have a long term impact on household's food security. For example, a study conducted in Calcutta (India) by Holt and Ribe (1995) indicated improvement of the household's income by 82% due to their participation in microfinance program. The same positive linkage has been discovered between households' income, which was believed to place them in better position in terms of food security,

and participation in microfinance in the study conducted in Bangladesh. Webster and Fidler (1996) reported that study of participants in the Grameen bank (in Bangladesh) loan programs had been successful in increasing their household's incomes, expenditures, employment opportunities and nutritional intakes.

Using quasi experimental survey design that involves comparing a "treatment group" living in communities with access to a saving and credit program and a "control group, living in communities without such access, Pitt and Khandker (1994) observed positive and significant effects on users of Grameen bank and Bangladesh rural advancement committee in Bangladesh for most of the impact indicators such as asset holdings, consumption, nutritional status of children, and school enrolment. This study further revealed that participation in microfinance program has a significant effect on the wellbeing of the poor households and that this effect is greater when women are the program participants. On the basis of his study in Bangladesh on three micro credit programs: Grameen Bank, BRAC, RD-12, Kahandker (1998) concluded that participation in microfinance had a positive effect on households' expenditures on basic necessities. He also observed a rise in household's net worth and improvement in nutrition intake. By their studies in Madagascar and Cameroon, Zeller (1993) and Schrieder (1992) observed significant positive effects of financing programs on rural households' income and calorie consumption. A study, conducted in China, by Zhu et al. (1996) showed that 35 participation in credit program led a per capita calorie consumption to rise

by 316 calories, which represents a 14% increase at the sample mean. Rosntan, et al. (1999) witnessed that the women who received the loans from self-employment and micro credit programs, a microfinance institution in Indonesia, increased their income substantially and improved their families' nutrition.

Citing a study conducted by the World Bank in collaboration with the Bangladesh Institute of Development Studies, Hashemi and Morshed (1997) stated that the Gramee Bank (microfinance institution) not only 'reduced poverty and improved the welfare of participating households, but also enhanced the household's capacity to sustain their gains over time. This was accompanied by an increased caloric intake and better nutritional status of children in households of Grameen Bank participants. The study conducted by Nur (2006) in Somale regional state in Ethiopia has revealed that households participated in microfinance program are found better than the non participants in the area of the study on the food security indicators. The average income of the participant households found better than non participants. The participant households also performed better than the non participants on such variables like food and non food expenditures, number of school age children attending schools, and the average savings.

Chapter3. Research Design and Methodology

3.1 Research Design

The study under consideration involves assessment of the Impact of RUSACCO on the household's food security and income. Literatures suggest various methods for undertaking the studies of this sort. In longitudinal studies that use the pre and post design, a base line survey is conducted before the administration of the program, the subject of interest like households are randomly assigned to control and treatment groups before the administration of the program, and then the same type of data is collected after the administration of the program from both groups again (Riely, et.el.1999) and Barnes and Sebstad, (2000). This type of design is considered as superior in controlling the effects of the other interventions and even natural changes. In studies that are conducted only at one point in time this approach cannot be employed. However, literatures do still suggest various approaches such as a comparison group design (Riely, et.el.1999) and Barnes and Sebstad, (2000) which involves making comparisons of food security conditions between participants and non-participants, or across population groups who have had varying levels of participation in the program and the recollection proxy-pretest design where the measurement is taken on the same group only after the

implementation of the program (Trochim, 2003:228-229). It is impossible to measure “program effects” without a sample containing both members and non-members of credit programs. Moreover, a quasi- experimental survey design is likely to be necessary in order to have a sample that allows a correct identification of “program effects” (Pitt and Khandker 1995).

This study employed the experimental research method, true experimental design; randomized subject post-test only controls group design used through comparing member of RUSACCOs with non members. This approach is necessitated because of the absence of baseline survey that shows the pre-program food security situation of the participants. The experimental post test only design looks the differences between members and non members. It involves requiring participants or the program users and non-program user to provide information on the outcome indicator (Pitt and Khandker 1995). Accordingly the assessment of the role of the program took the form of the Post test only analysis where both the non-members (control) and the member of the program data are collected only at one point in time. In this study, the households were 131(71 members and 60 non-members) asked to provide information on relevant food security indicators only after participation in RUSACCO program. The average values of food security indicator, mainly the average yearly disposable income, have been compared and the statistical significance of the differences has been checked.

3.2 Universe of the Study

The survey area covers all Yenesanet Fana RUSACCO union working area and all members of 101 primary SACCOs that include 8,687 members of whom 4914 are women. The working area of union is three districts that include Sodo, Meskan and Mareko. For detail see table one below.

Table 1: The universe of the study area

Name of union	Name of district	No. of primary coops.	Type of Agro ecology	No of SACCO members		
				M	F	T
Yenesanet Fana RuSACCO Union	Sodo	40	Midland	1607	2238	3845
	Mareko	25	Lowland	850	962	1812
	Meskan	36	Midland	1316	1714	3030
Total	3	101		3773	4914	8687

3.3 Sample size and sampling method

The sampling design was stratified sampling. Yenesanet Fana RUSACCO union consists a total of 101 primary Cooperatives resides in to two agro-ecological zones (25 in the lowland and 76 in the midland). Through a randomly lottery method selection one primary cooperative from the lowland and the other one primary cooperative from midland were selected. Following the selection of the two primary cooperative a village within each of the two primaries RUSACCO have been selected. Accordingly, Alibo village from the lowland of Obe Jre Damake primary SACCO and Meshmena village from midland of Nesanet primary SACCO were selected.(see table 2 below)

Quantitative data was collected from primary and secondary sources. Primary data was collected from 131 (71 RUSACCO members and 60 non-members) sample households drawn from two villages' households residing in Halibo and Meshmena Villages (see in table written red color).

Table 2: Summary of sample size from primary cooperative and village randomly selected for the project study.

Name of union	Number of primary cooperative		Name of sample selected primary cooperative		Name of village randomly selected		Sample size of the project(HHs)		
	Lowland	midland	Lowland	midland	Lowland village	Midland village	RUSACCO members	Non-RUSACCO member	Total sample size
YenesanetFana RUSACCO union	25	76	ObeJareda make	Nesamet	1.Dadiyoso 2.Koroso 3.Shabono 4.Samano 5.Lejano 6.Shemena 7.Halibo 8.Aboso	1.Arodesa 2.Meshmena 3.Segedu 4.Oromo sefer 5.Kibegasha 6.Sefera	71	60	131

3.4 Source of data and method of analysis

The study has used both primary and secondary sources of data. Secondary sources are previous researches, relevant articles, as well as the records of RUSACCO institution under consideration. Primary data were collected directly from the member and non-member of RUSACCOs. For the collection of primary

data, 8 research assistants were recruited from Self Help Africa-Ethiopia Staff and Development Agents who have been trained on individual Household Method (IHM) and the additional necessary trainings were given before the actual data collection. For securing the data from this source, a questionnaire consisting of semi-structured questions were designed and administered to get household data on certain key indicators of the food security and then the whole data of the source collected through interview method. The analysis has been done descriptively using percentages, tables, figures and measures of central tendency and dispersion- mainly mean and standard deviation and in some cases using simple statistical test. The analysis has mainly focused on comparing the members and non-members of RUSACCO. The analysis used the IHM software which analysis the food intake of households in terms of kilocalories and disposable income of each households. In addition SPSS software used to test the significance difference among members and non-members of RUSACCOs.

3.5 Households Interviews approach

We used the whole village study methods that include both the non-beneficiaries and beneficiaries of RUSACCO. This approach is important in comparison the impact of RUSACCO member beneficiaries. The core household interview takes the form of a semi structured conversation that covers the following main points: household demography including death in the study period; productive assets including land, livestock and trade tools; production in the last agricultural year: all crops & livestock: quantities produced, sold,

stored and consumed; source of employment for all household members: type of work done and seasonality of work with rates of pay; income from land and property rented out etc.; transfers: gifts and remittances, relief assistance given as cash or food; wild food consumed or sold. Each team was allocated a section of the survey site, and every household was interviewed. When a household was not available for interview the next household was approached. Survey groups comprised at least one person experienced in IHM interview techniques and no more than three others. At each household data was gathered on household membership by age and sex; any household member stays out of the family; any deaths of household members that occurred during the study years; children in primary or secondary school; the amount farm tools they have; the amounts and type of farm land, amount they harvest, sold; gifted; consumed; number & type of livestock they have were the major one. At the end of each day, data was consolidated and entered in to the IHM software, checked and households requiring revisits noted

3.6 The variables of the study

The role of any intervention programs that is believed to improve the food security of the households is measured by using various indicators of the major dimensions of the food security: the availability, access and food utilization. For this particular study few selected indicators have been used as variables on which measurement is taken. The following are some of the variables used in study:

1. **Household's income:** disposable income is considered as a good indicator of the household's access to food. Here it can be said that as the size the household's income increases the household can have more capacity to access food.

2. **Households standard of living:** can be used as an indicator of the access to food and somewhat the capacity of household able to cover the minimum non-food needs.

3. **Diversity of source of income:** can be used as indicators of access to food and availability of food. Improvement in the level of these indicators can be taken as a good signal for better food security

4. **Households food intake in terms of kilocalories as WHO standard.**

5. **Household asset ownership and chilled education**

Chapter 4: Data presentation and discussion

4.1 Description of the study area

Gurage is a Zone in the Ethiopian Southern Nations, Nationalities and peoples Region (SNNPR). This Zone is named for the Gurage people, whose homeland lies in this Zone. Gurage is bordered on the southeast by Hadiya and Yem special woreda, on the west, north and east by the Oromia Region, and on the southeast by Silt'e. Its highest point is Mount Gurage. Welkite is the administrative center of the Zone; Butajira is the largest city in this zone.

Based on the 2007 Census conducted by the CSA, this Zone has a total population of 1,279,646 of whom 622,078 are men and 657,568 women; with

an area of 5,893.40 square kilometers, Gurage has a population density of 217.13, While 119,822 or 9.36% are urban inhabitants. A total of 286,328 households were counted in this zone, which results in an average of 4.47 persons per household, and 276,570 housing units. The average land holding per household is 0.5 hectare as compared to the national average of 1.01 hectare. The 18.9% of the population livelihood is based on non-farm activities. On average 79% of all eligible children are enrolled in primary school, and 12% in secondary schools. 18% of the zone is exposed to malaria.

Yenesanet Fana RUSACCO union is located in this zone and provides services for 1010 primary saving and credit cooperatives, which have 14450 members of which 10,693 are females, on average 131 members for each primary saving and credit cooperatives. This union has able to mobilize 35 million Ethiopia birr loan and 19,115,142.63 million savings. The union over all capital is 59 million Ethiopia birr. This experiment was conducted in Sodo, Meskan and Mareko Woredas of Yenesanet Fana saving and credit union, Gurage zone of SNNP Regional State. It is located at about 130km from Addis Ababa on the main road to Butajira town. Location map of the study area of Yenesanet Fana Saving and Credit cooperative union is shown under in figure 1

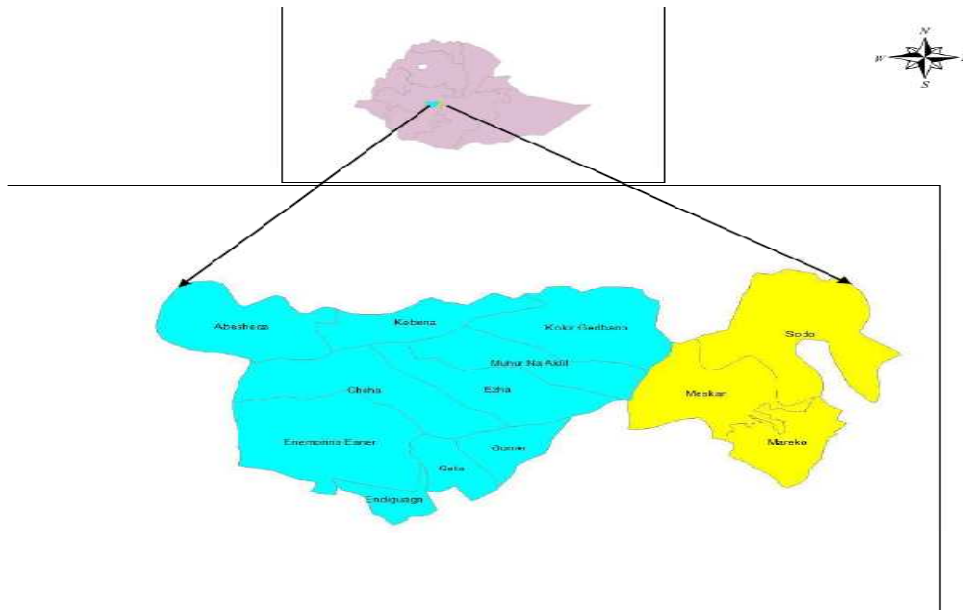


Fig. 1: Yellow color shows Location map of the study area

4.2 Main definitions

4.2.1 The household

A household was defined as those people resident in the house and eating from one pot during the reference year (April 2013-March 2014)

4.2.2 Household income

Household income is made up partly in food, and partly in money. In many cases some or all food income is not sold, so no price is available for that food. This means that total household income cannot be calculated in terms of money. Therefore a standardized presentation is used in terms of 'disposable income'/ adult equivalent. This is defined in the IHM as: The money income remaining to the household after it has met its food energy requirement at a

standard rate, for each 'adult equivalent' in the household. This is calculated from

1. The household's total food energy requirement, calculated from UN reference values. This is based on the period individuals were actually resident in the household, so periods away from home e.g. at boarding school, doing migrant labor are excluded.

2. The cost of the proportion of the household energy requirement not met from the household's income as food (Kcal income). This is estimated using a set diet defined in discussion with poorer residents as being typical of the diets of poorer households. In this study the diet used was maize.

3. The disposable income is calculated by subtracting the cost of the minimum diet from the total household money income. The result is standardized to account for variation in household size by dividing the disposable income by the number of 'adult equivalents' in the household. The number of adult equivalents is calculated as the total household energy requirement/ the energy requirement of a young adult (2,600Kcals/day).

4.2.3 The standard of living threshold

This is the cost of a basket of goods and services sufficient to achieve a minimum acceptable standard of living, which was established in discussion with residents. This includes a range of locally identified non-food items defined by members of poorer households as being essential for 'social inclusion' in that locality. This includes items such as soap, fuel for lighting,

clothing and primary school costs. The IHM software allocates ‘standard of living costs’ per individual (for example only children of primary school age have school costs; the costs of adult and children’s clothes is different etc). Households that do not have sufficient income remaining to meet non-food costs once food energy requirements have been met are defined as ‘below the standard of living threshold’

Table 3: Minimum Diet of households in the study area

Food type	% of diet as food energy	Price in ET birr per kg	Remark
Maize	100	4.5	

4.3 Individual Households Asset ownerships

A total of 71 Yenesant Fana RUSACCO union members and 60 non-members households were successfully interviewed. The following household analysis is based on the sampled households from lowland agro ecology and midland agro ecology villages called Mechimena Village of midland and Halibo Village of lowland. The ability of a household to acquire sufficient food depends on: The household’s ‘endowments’ (essentially their productive assets, including land, livestock, labour, working capital etc), the context to which they relate – the opportunities within which they can exploit their endowment e.g. rainfall, land, prices, services & the legal framework (Sen’s entitlement theory, 1981).

RUSACCOs are expected to expand and develop the asset base of the poor member households. Moreover, household assets are one indication of wealth and level of income. Based on this, the level of ownership household assets was

investigated in this study. In the following table the level of asset ownership to tin roofed house, livestock and land are depicted.

4.3.1 Individual Households ownership and access to land

Table 4: Household ownership and access to land among sampled study households

Land used in (Hectare)	Members of Yenesanet Fana RUSACCO Union N=71		Non-members of RUSACCO union N=60	
	Number of Households	%	Number of households	%
No-land	1	1%	4	7%
0-1	38	54%	44	73%
1-2	26	37%	11	18%
2-4	5	7%	1	2%
4-5	1	1%	0	0
5+	0	0	0	0
Total	71	100	60	100

Source: computed from the field survey data, 2014

The above table 4 shows the land holding of households, which is important in understanding food security and sources of household income. The average farm land holding in the members of RUSACCO union and non-members have no significant differences. The majority of household land holding is less than 1 hectare, 54% of RUSACCO members and 73% of non-RUSACCO members. The landholding analysis shows the sampled household farmers land size is small and fragmented to maximize crop and livestock production. In this area to improve food security the focus area should be intensification and off-farm activities. Increasing food production through dabble cropping and focusing on

off-farm activities which not requires more farm land such as beekeeping, poultry production, pity trade and others are more important.

4.3.2 Individual Households ownership of cattle

Table 5: Household ownership of cattle among sampled study households

Number of Cattle owned	Members of Yenesanet Fana RUSACCO Union N=71		Non-members of RUSACCO union N=62	
	Number of Households	%	Number of households	%
No-cattle	21	30%	28	47%
1-2	18	25%	15	25%
3-4	17	24%	14	23%
5+	15	21%	3	5%
Total	71	100	60	100

Source: computed from the field survey data, 2014

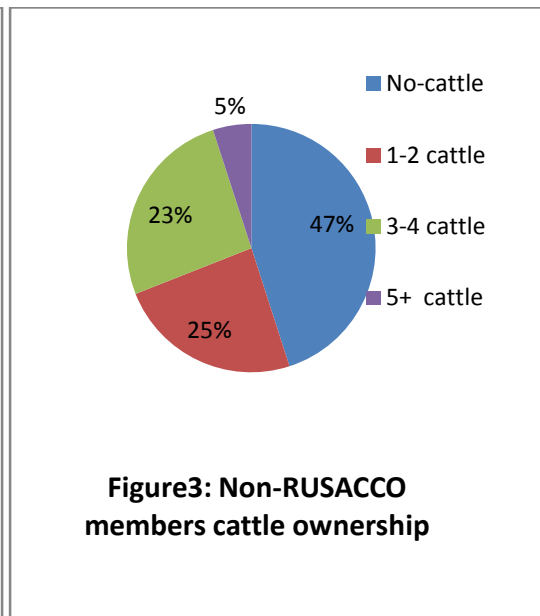
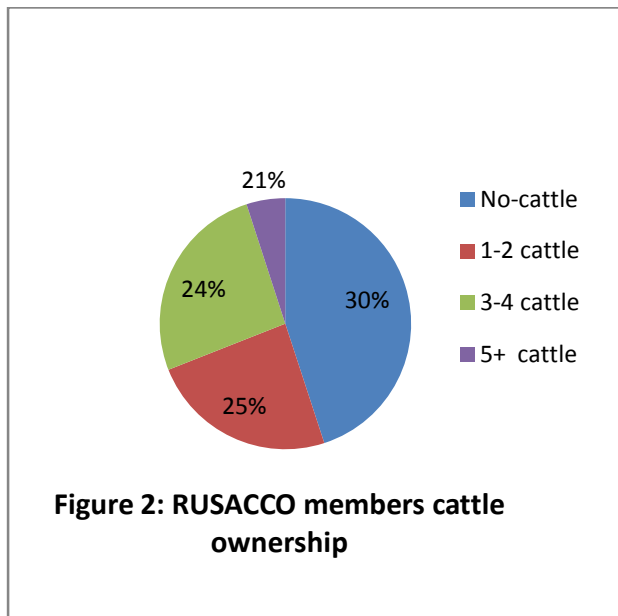


Table 5 and the pie diagram above show ownership of cattle among all sampled households, shows the majority of households own cattle. Of the 71 sampled households of RUSACCO members, 25% owned 1-2 cattle, 24% owned 3-4 cattle, and 21% owned 5 and above cattle and 30% did not own any cattle. Whereas non-RUSACCO members, of the 60 sampled households 25% owned 1-2 cattle, 23% owned 3-4 cattle, only 5% of non-RUSACO member households owned 5 and above cattle and 47% did not own any cattle.

According to this assessment RUSACCO members owned more cattle than non-RUSACCO members. 21% of RUSACCO member sampled households' owned 5 and above cattle as compared to non-RUSACCO members that owned only 5% of sampled households

The reason for low levels of ownership of non-RUSACCO member households may be due to lack of access to credit and the small size of land holding. Both lack of draught power and small plots of land contribute to lower food production among the poor. These factors should be taken into consideration when considering interventions to raise income and living standards among the poorest households.

4.3.3 Individual households' tin roofed house ownership

The quality of house is one of the characteristics of wealth breakdown among different households. Accordingly community resides in the sampled area wealth differences determined by owning of tin roofed houses.

Table 6: Households tin roofed ownership

Quality of House	Members of Yenesanet Fana RUSACCO Union N=71		Non-members of RUSACCO union N=60	
	Number of Households	%	Number of households	%
Tin roofed house	37	52%	15	25%
Grass touched hose	34	48%	45	75%
Total	71	100	60	100

Source: computed from the field survey data, 2014

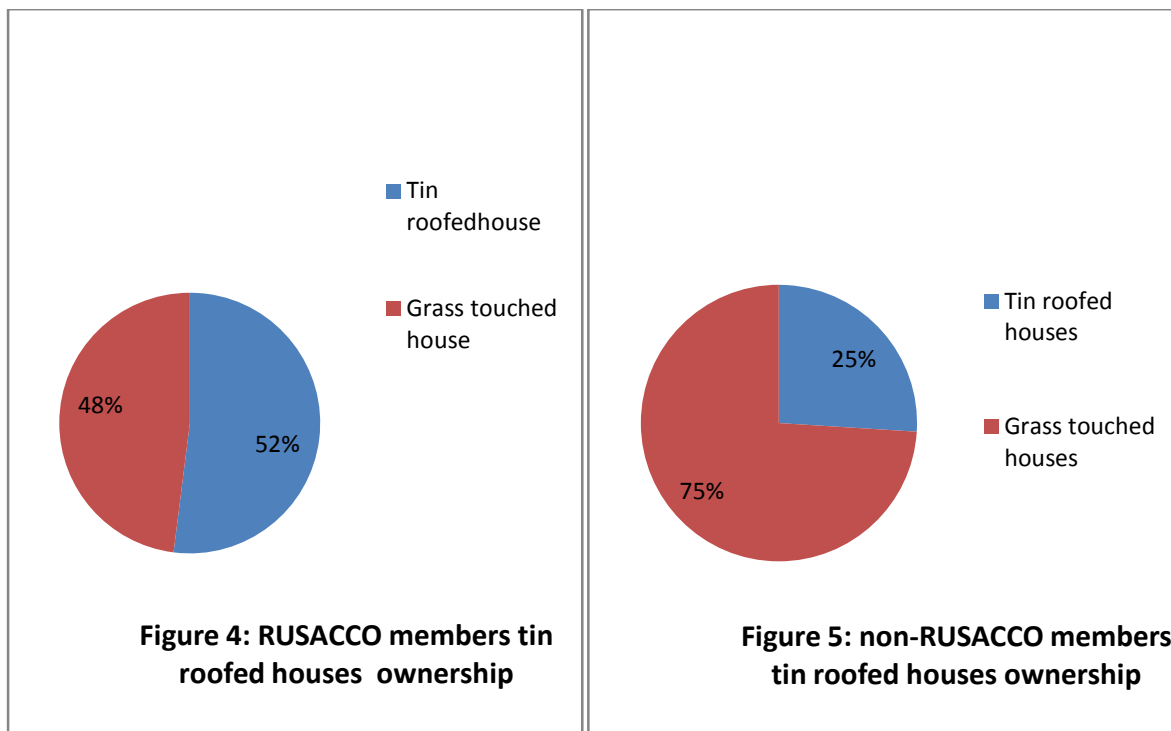


Table 6 and pie diagram above shows the differences in the quality of houses based on the roof covered. According to the wealth breakdown characteristics of the community resides in the sampled households, tin roofed house is indicator for better-off households. From 71 sampled RUSACCO member households 52% households' owned tin roofed house and 48% grass touched house. From 60 sampled non-RUSACCO members' households, only 25% owned tin roofed and 75% were owned grass touched house. Based on the wealth characteristics of the community reside in the sample area, RUSACCO members are better wealthier than non-RUSACCO member households. Majority of RUSACCO members (52%) owned tin roofed house as compared to only 25% of non-RUSACCO members

4.4 Individual household characteristics

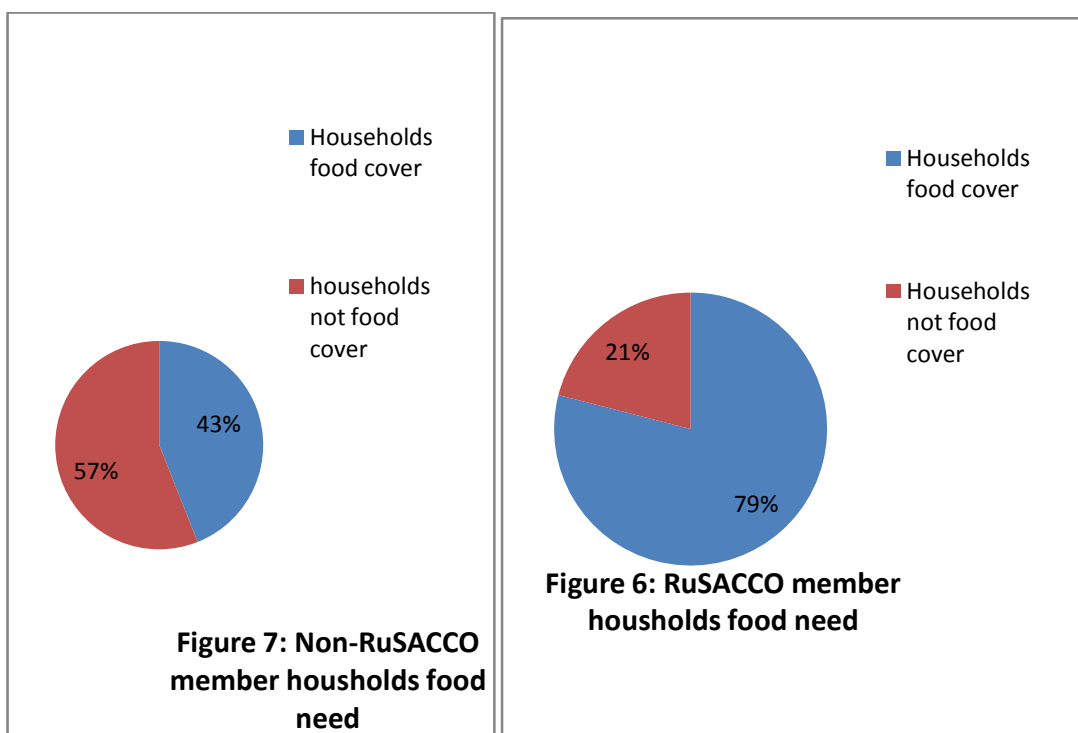
4.4.1 Individual households able to cover their food need throughout the year.

The assessment of Individual households includes whether the households able to cover their food need by their own production. Based on the answer given from respondent the following table summarized.

Table 7: Individual Households able to cover their food need throughout the year

Number of Households able to cover food need throughout the year	Members of Yenesanet Fana RUSACCO Union N=71		Non-members of RUSACCO union N=60	
	Number of Households	%	Number of households	%
Households food cover throughout the year	56	79%	26	43%
Households not able to cover throughout the year	15	21%	34	57%
Total	71	100	60	100

Source: computed from the field survey data, 2014



Source: computed from the field survey data, 2014

In the table 7 and Figure 6 above the number of households who reported being able to cover their food needs throughout the year was 79% out of 71

sampled RUSACCO members and only 21% were not able to feed their family throughout the year, Whereas, in fig.7 from 60 sampled non-RUSACCO member households, only 43% were able to feed their family throughout the year and the majority (57%, 35 households) of non-members not able to feed their family throughout the year.

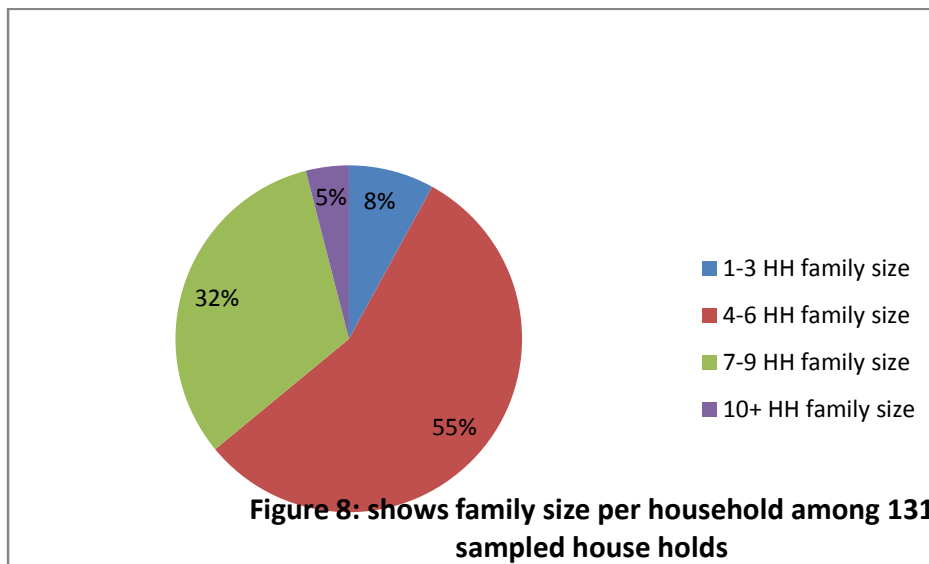
4.4.2 Family size of sample households

Size of household refers to the entire number of persons related or unrelated, who comprise private household. Family size and age composition of households determine household food security. When there are extended family members and broad based age distribution, there is a need to have extra food for family consumption, which can be obtained either through own production or purchase from the market. This requires more expenditure for food and less for savings and investment. The following table illustrates the family size range of respondents.

Table 8: Family size range of sample households

Family size	Members of Yenesanet Fana RUSACCO Union N=71	Non-members of RUSACCO union N=60	Total Sample Size N=131	
	Number of Households	Number of households	Number of households	%
1-3	5	5	10	8%
4-6	34	38	72	55%
7-9	28	15	43	32%
10+	4	2	6	5%
Total	71	60	131	100

Source: computed from the field survey data, 2014



Source: computed from the field survey data, 2014

Table 8 and the pie diagram above shows that the majority (55% 72 households), of sampled households in the two villages have an average

household size of 4-6 persons followed by 32% with a household size of 7-9 people (43 households). 8% of the remaining households in the sample have 1-3 household members (10 households) and the final 5% have a household size of 10+ people (6 households). The smallest household interviewed was a 1 person household, the largest household interviewed consisted of thirteen members.

The average family size in the area was 6, which indicates a high population growth rate and dependency ratio, with implications for household food security. In the study area, large households tended to have lower disposable incomes per adult equivalent. This can be linked to a shortage of farm land from which to feed their family.

4.4.3 Household access to RUSACCO and Child Education

Access to RUSACCO services has an impact on the educational attainment. This means that, the income improved through access to the saving and credit service enable the poor households educate their children. Even though the type of education and job availability matters, it is believed that the educated people have wider opportunities for access to skilled and semi-skilled jobs. Therefore, they can generate better incomes, which improve their purchasing power and the subsequent food security. Furthermore, these people are largely absorbed in the different sectors of the economy. Based on these assumptions, an attempt has been made to investigate whether the provision of saving and credit services make differences on the child education between members of

RUSACCO and non-RUSACCO member households in the study areas. Hence, the following table portrays the number of households able to send their children to different level of education (Primary, secondary and tertiary).

Table 9: Individual households’ access to RUSACCO and chilled education

Level of Education	Members of Yenesanet Fana RUSACCO Union N=71		Non-members of RUSACCO union N=60	
	Number of Households	%	Number of households	%
Primary Education	57	80%	27	44%
Secondary Education	14	20%	5	8%
Tertiary Education	4	6%	0	48%
Total	71		60	100

Source: computed from the field survey data, 2014

In the table 9, 80%, 20% and 6% of RUSACCO member households able to sent their children to primary, secondary and tertiary education respectively, Whereas 44% and 8% of non-RUSACCO member households were able to sent their children to primary and secondary school respectively and they didn’t able to send their children to tertiary level at all. This shows that, 20 percent of RUSACCO members and majority percent of non-RUSACCO members in the above mentioned households are never sent their children to schools. Moreover, the level of schooling in the non-member households was investigated because of the fact that, for the poor households in the rural areas, child education especially girls education depends on the income of the family.

To this end, the result shows that 80 percent of RUSACCO member households and 44 percent of non-member households are currently sent their children to primary schools. As a result, there are significant proportions of non-RUSACCO member who are never sent their children to school. The low schooling of children implies that families are using child labor for household tasks such as keeping livestock, fetching water, collecting fire wood, washing clothes, cleaning houses and caring for the small children as well as engaging in the family businesses. These activities are closely related to the short-term food security. Hence one can safely say that, families use child labor to maintain household food security in the short run. This is because children largely supplement the household food security either in the form of income generation or labor contribution. The important point in this comparison is that, the rates of children enrollment are higher in the RUSACCO member households. This can be attributed to the service of saving and credit, which subsequently improved the incomes of member-households. Thus it can be argued that, access to saving and credit cooperative services improve the child education, at least in the primary level, which in turn create a window to participate in the skilled and semi-skilled jobs. There is a need to design strategy aiming at enhancing child educational enrollment.

Increased earnings and savings for poor people open up the possibilities of investing on their children's future by educating them. This clearly shows that, those who are members to saving and credit cooperative services can send their children to school. This result supports the finding of Gebre hiowot (2005)

which states that, there are 76 percent of improvements in the children's education of microfinance client households as compared with 72 percent of non-clients. Furthermore, the above finding confirms that of Tsehay and Mengistu (2002) which states that, a minimum of 57.1 percent of rural beneficiaries have sent their children to school.

In addition to these a World Bank study (2005) on the incidence of poverty and education indicated that, there is high likelihood that less educated people to become poor and to be food insecure. It also clearly indicated that, the more household head is educated, the less likely to be his household is food insecure and faced in Poverty. This implies that, educating children can be used as a long-term strategy for insurance during household food insecurity.

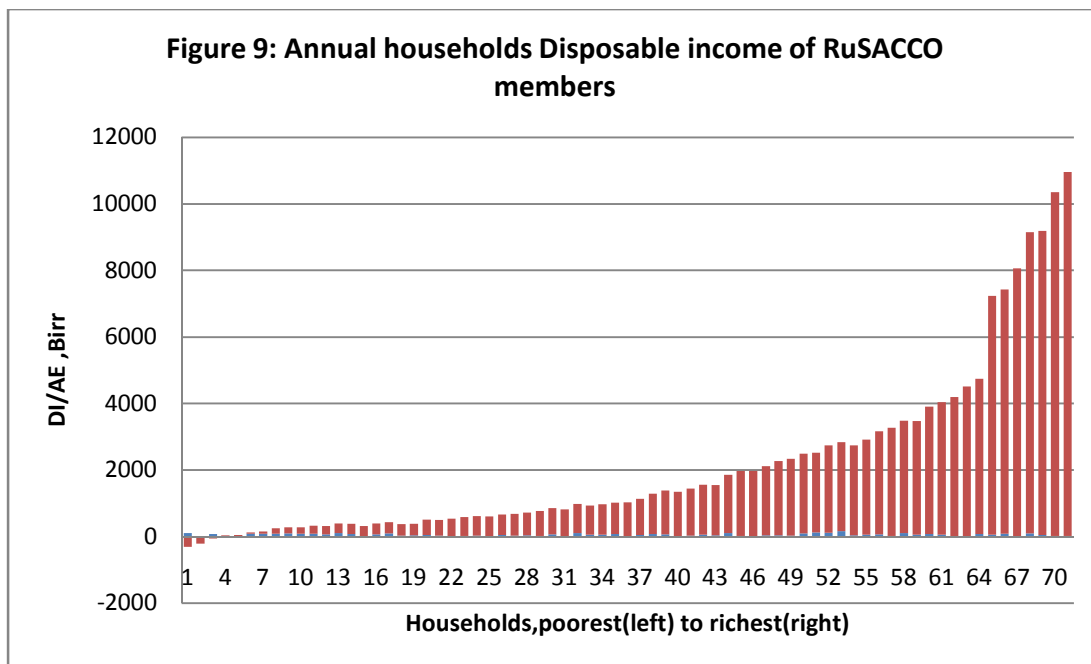
4.5 The impact of RUSACCO union

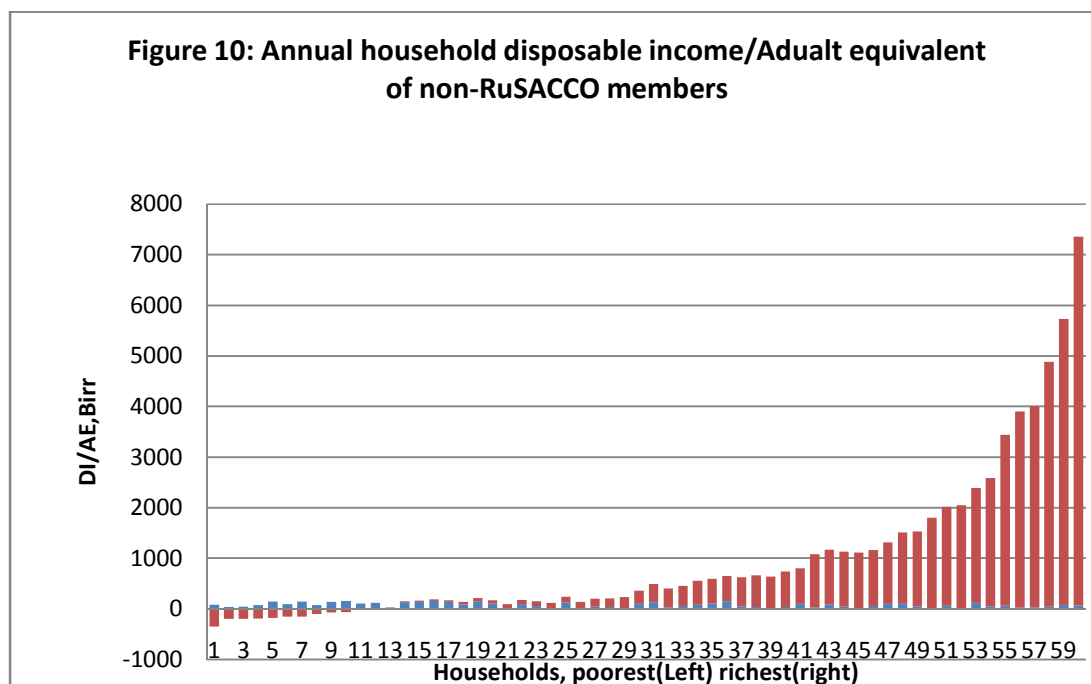
4.5.1 Impact on disposable income

Income has been mentioned as one of the indicator of the household's food security. More specifically, it is considered as one of the indicators of access to food. A household with higher income is less susceptible for food insecurity problem. Rural Saving and Credit Cooperatives (RUSACCOs) on the other hand believed to play positive role in this regard. With this in mind respondents of this study was asked to indicate their yearly income and food sources of both members and non-members of RUSACCO union. The impact of income on individual households depicted in the form of Disposable income as the following

4.5.1.1 Disposable incomes of Yenesanet Fana RUSACCO union members and non-members households.

Disposable income is defined as the cash remaining after a household has met its food energy needs at a standardized level (see the above definitions). Figures 9 and 10 below provide an overview of income distributions across the two samples. Each bar represents a household, with the poorest households on the left and the richest on the right. To allow comparison between households (as each household has unique demographic characteristics) results are standardized 'per adult equivalent'. The bars show the income available to the household after it has met its basic food energy requirements, according to current WHO standards. This is described as disposable income. Two household appears below the X axis (negative disposable income) from RUSACCO members and eight non-member households.





Each bar in figures 9 and 10 above represent a household. Households below the X axis are not able to meet their basic food energy needs. Approximately 3% (2 households) of the 71 households sampled from RUSACCO members, and approximately 13% (8 households) of the 60 households sampled from non-RUSACCO member were unable to meet their minimum food needs (based on WHO, 1985, reference standards), during the April 2013- March 2014 reference period, as can be seen from the households below the X axis. They are 'food poor'. From the RUSACCO member households 48% (33 households) of the 69 households above the X axis had annual disposable incomes per adult equivalent below 1000 birr (US\$50). From non-RUSACCO member, 61% (33 households) of the 54 households above the X axis had annual disposable

incomes per adult equivalent of less than 1000 birr. This indicates that non-RUSACCO member household's annual income lower and vulnerable to shocks than RUSACCO member households.

4.5.1.2 Wealth category by quintile of RUSACCO member and Non-member households

Table 10: Disposable income per adult equivalent shown in quintile (Q1 poor to Q5 better off) for the member and non-member of RUSACCO households

Name	Average wealth category by quintile					Median
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
RUSACCO member households	159.40	486.44	974.97	2,323.40	6,214.17	1019.38
Non-RUSACCO member households	17.00	79.63	305.26	943.05	3,162.87	364.73

Source: computed from the field survey data, 2014

In the table 10 above RUSACCO member households are wealthier than non-RUSACCO member households. The average disposable incomes of RUSACCO members are more than two fold better than non-RUSACCO member households in each quintile. The median disposable incomes of RUSACCO members are three fold greater than non-RUSACCO members. This shows the annual income of Yenesanet Fana RUSACCO union member households are better than the non-member households.

4.5.1.3 Statistical significance test of disposable income among RUSACO member and non-member households.

An independent sample t-test was applied to examine whether or not significance difference exists between RUSACCO member and non-member households. The t-test is a parametric statistic and perhaps one of the simplest analyses used in dissertation and thesis research. The examination was done by comparing the mean value of disposable income of member households against with non members. The assumptions underlying in the t-test are: The scores of the data represent a random sample from the population under study, normal distribution of the data exists, and the variance in the two groups are equal and obtained by using the pooled estimate of a common variance (Kleinbaum and Kupper 1978, Norusis 1992).

The equation is given by

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where $\bar{X}_1 - \bar{X}_2$ is the mean difference of a variable between RUSACCO member (group 1) and non member households (group 2).

S_p^2 = is the pooled sample variance and it is calculated by

$$\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \text{ With } n_1 + n_2 - 2 \text{ degree's of freedom.}$$

The degrees of freedom $n_1 + n_2 - 2$ together with the t- value determined the level of its significance. Here, a two tailed test was employed in order to accept or reject the null hypothesis. The null and alternative hypotheses of the test are:

Ho= there was no significant difference between the mean value disposable income of RUSACCO members and non- members for the corresponding independent variable.

H1= there exists a significant difference between the mean value disposable income of the two groups.

SPSS Statistical analysis software was used to make analysis of the test statistics. According to the Independent t- test analysis result, there was a mean difference of 1155.06 Birr disposable income between the two groups. And, the mean value of the two groups is significantly different from one another at 0.05 level of significance. The result of the t-test also revealed that there was high standard deviation in the disposable income of RUSACCO members than that of the non-members.

Table 11 Summary statistics of independent t-test

Variable Name	RUSACCO Members			Non-Members			t-value	Level of significance
	N	Mean	SD	N	Mean	SD		
Disposable Income	71	2107.11	2588.62	60	952.05	1509.94	3.045	.003

4.5.2 Impact on standard of living threshold

A standard of living was set based by adding the local cost of basic non-food needs, derived through discussion with local key informants (see Table 12).

Table 12: Goods and Services required for Minimum Standard of Living

Expense type	Cost/person/year	Applies to
Clothes-Man	300.00	Adult male aged over 15 years
Clothes-women	200.00	Adult female aged over 15 years
Clothes-Child	250.00	Child aged 4 to 14 years
Soap	480.00	The house hold
Salt	144.00	The household
Sugar	360.00	The household
Kerosene	528.00	The household
Cooking oil	500.00	The household
Matches	24.00	The household
Coffee	300.00	The household
Berberere	250.00	The household

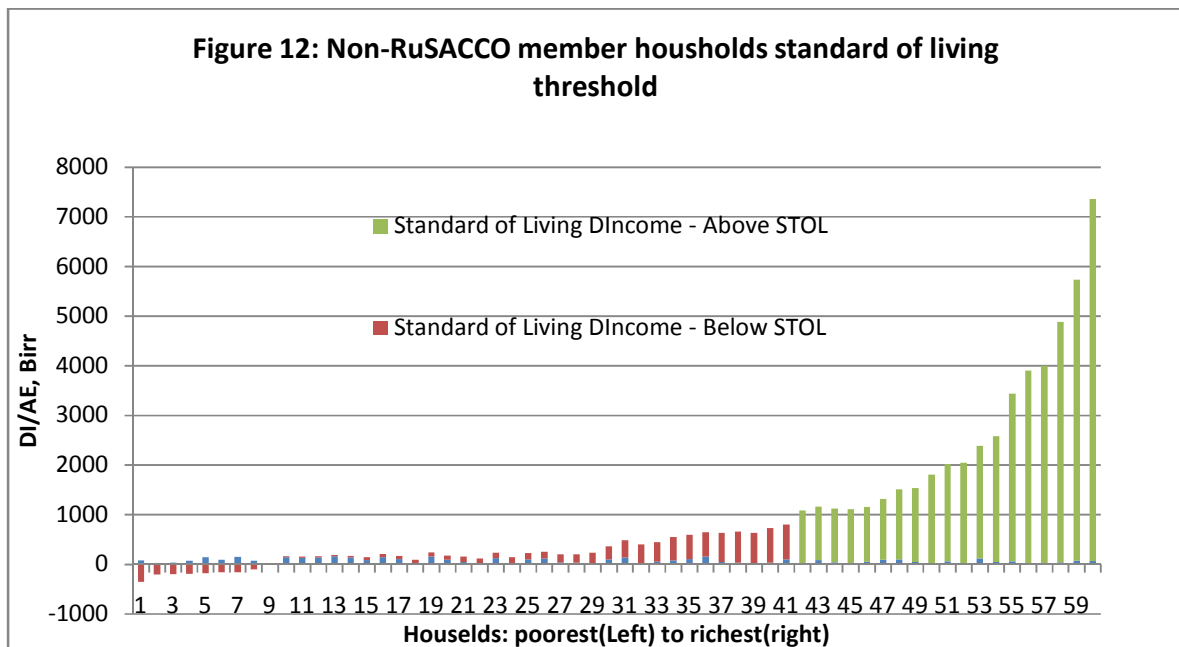
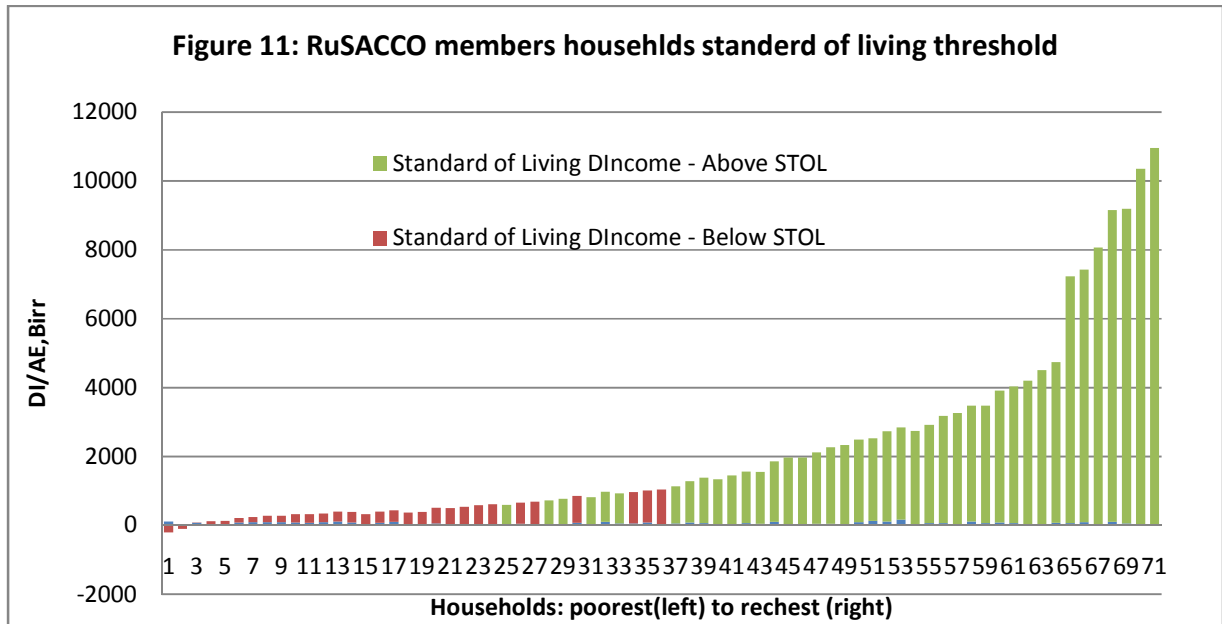
Source: computed from the field survey data, 2014

¹The cost of the minimum standard of living was initially established during collection of contextual information through focus group discussions on various issues such as crop and livestock production, local units of measurements and price information within the main markets. This was

¹ Individual food energy requirement was calculated by age and sex from World Health Organization 'Energy and protein requirements' (WHO technical report series 724, Geneva 1985) for the population of a typical developing country. Averaged over the entire population requirement approximates to 2100 kcal/ person/ day.

² See www.evidencefordevelopment.org

validated through some specific interviews with relatively poorer households in the sampled villages.



Figures 11 and 12 show the standard of living among RUSACCO members and non-member households, based on the local cost of basic non-food needs, derived through discussion with local key informants (see Table 10 above)

Those households represented in light green in figures 11 and 12 can both feed themselves to the required level and have sufficient remaining income to purchase a minimum set of non-food needs. Twenty eight households (39%) of those sampled from RUSACCO members and 33 households (53%) of those sampled from non-RUSACCO member households were above the X axis but are represented in red. This is because although they have sufficient income to meet their food energy needs, their remaining income is not sufficient to purchase essential non-food items. In total, of the 71 households sampled from Yenesanet Fana RuSACCO union, 2 households (3%) were negative disposable income (not have sufficient income to meet family food energy needs), whereas from 60 non-RUSACCO member sampled households 8(13%) were 'food poor' as they did not have sufficient income to meet their basic minimum food energy requirements.

4.5.3 Food budget for the median households.

Tables 13 and 14 provide food budgets for the median household in each sample ranked by disposable income. Table 13 is for a household comprising a married couple with two children, aged 5 and 10. It indicates that in the 2013/14 season they couldn't able to meet the noon food need of household.

The household need over 1019 Birr (roughly £40 per year to meet noon food need, at prevailing market exchange rate).

Table 13: Household food budget for the median of RUSACCO member households (n=71)

Activities	Kcal/day	Cash(Birr/day)
Income as food consumed	844,600	
Income as money		5,405.00
Household food requirement	<u>2,726,550</u>	
Food purchase requirement to make up shortfall ²	2,476.25	
Cash remaining after food purchase		2928.75
Cost of non-food to meet minimum standard of living		3,336.00
Surplus over required to meet minimum SoL		-407.25

Table 14: Household food budget for the median of non-RUSACCO members (n=60)

Activities	Kcal/day	Cash (Birr/day)
Income as food consumed	3,759,120	
Income as money		2600.00
Household food requirement	<u>4,471,250</u>	
Food purchase requirement to make up shortfall	832.90	
Cash remaining after food purchase		1767.10
Cost of non-food to meet minimum standard of living		4036.00
Surplus over required to meet minimum SoL		-2268.00

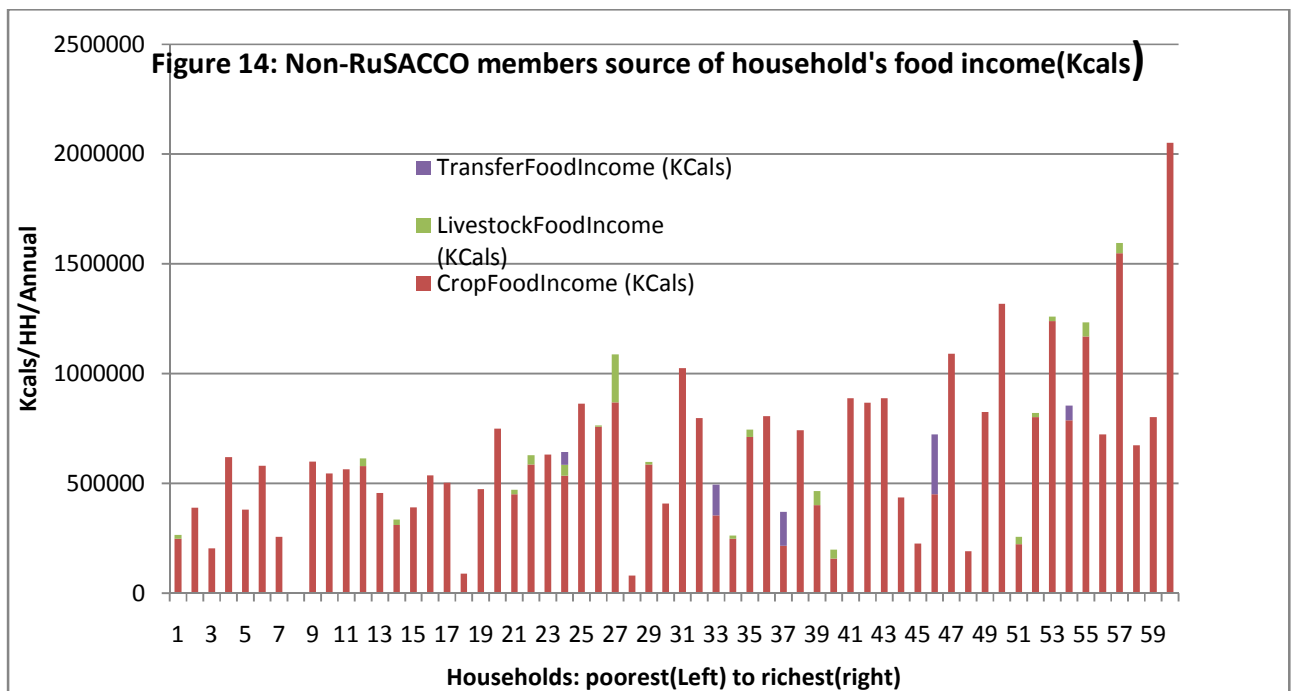
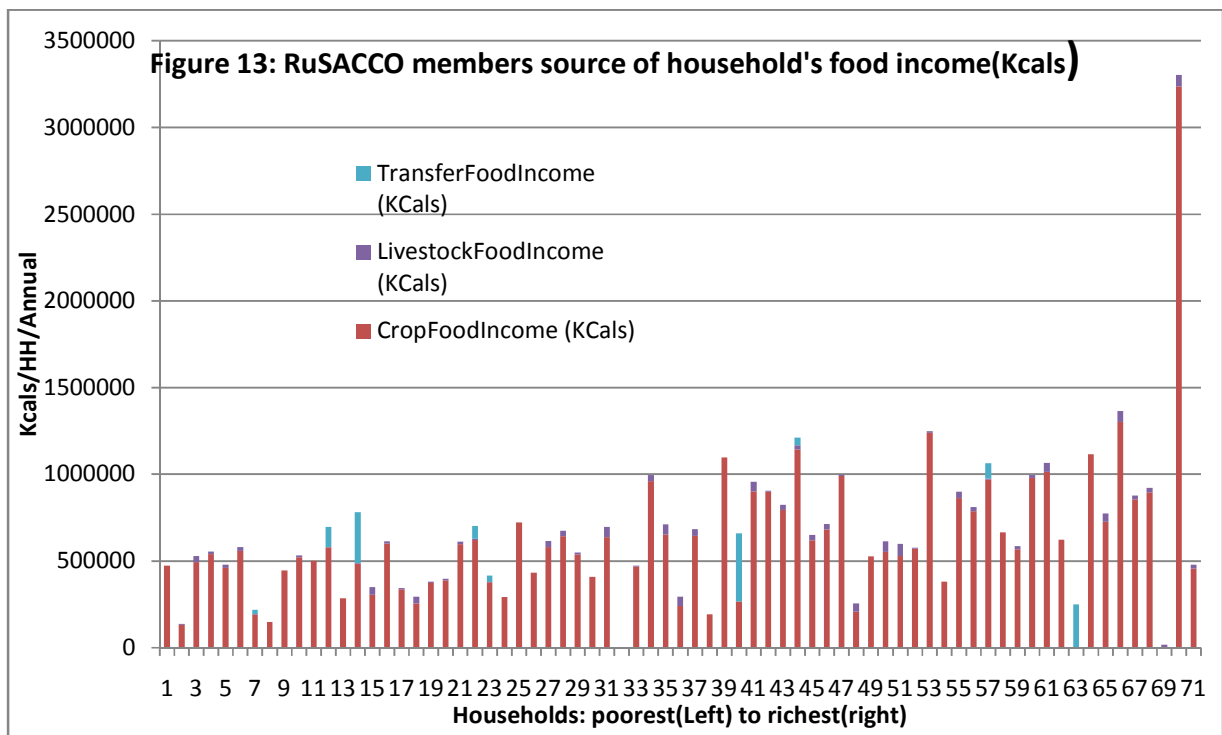
Table 14 is for a household with four children under the age of 15. It indicates that in the 2013/14 season they shared an average daily deficit of the minimum standard living of just below 2268.00 Birr (roughly £90 per year) or household need 2268 birr to meet their noon food need, at the then prevailing market exchange rate.

² Assuming calorific deficit is met by purchasing Maize at 4.5 Birr per kilo.

4.5.4 Sources of household food income of Yenesanet Fana RUSACCO member and non-members

4.5.4.1 Calorie Consumption

The per capita calorie consumption is one indicator of household members' food security. When food shortage is a common occurrence, the level of calorie intake is an important welfare indicator in countries like Ethiopia. When calorie consumption by a household is adjusted for variations in age, sex and household composition, it clearly reflects the household consumption level. The calorie consumption can be accounted for by converting conventional household sizes into household adult equivalent. Thus, the Figures 13 and 14: show household sources of income as food (kcal) consumed by RUSACCO members and non-members during the period April 2013-March 2014.



The food income pattern displayed in figures 13 and 14 shows that the main source of household food income in both (RUSACCO members and non-

members) was from own crop production supplemented by livestock and transfer.

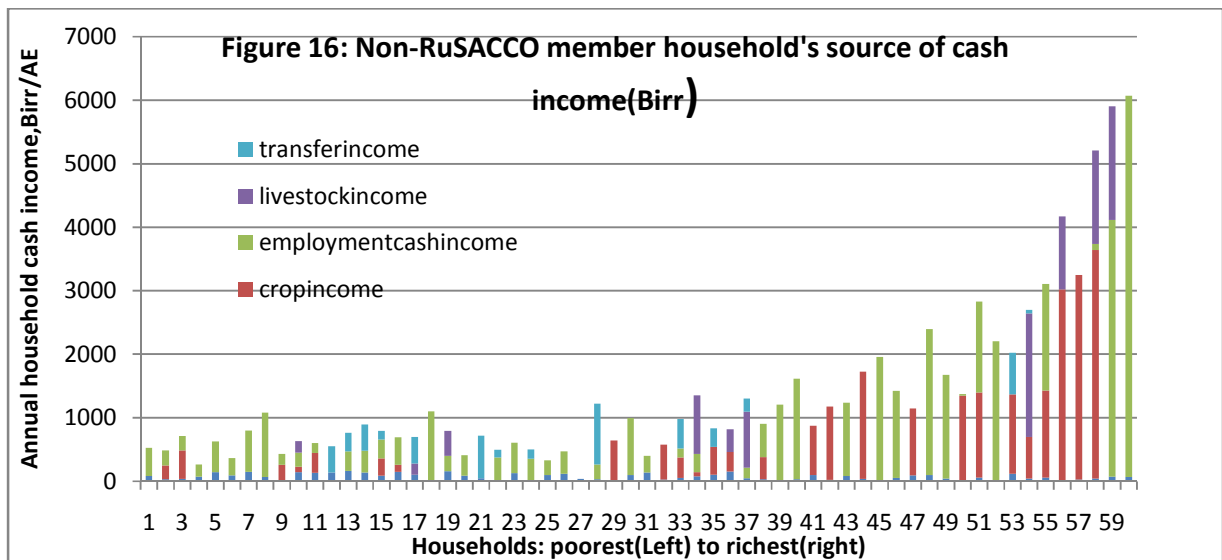
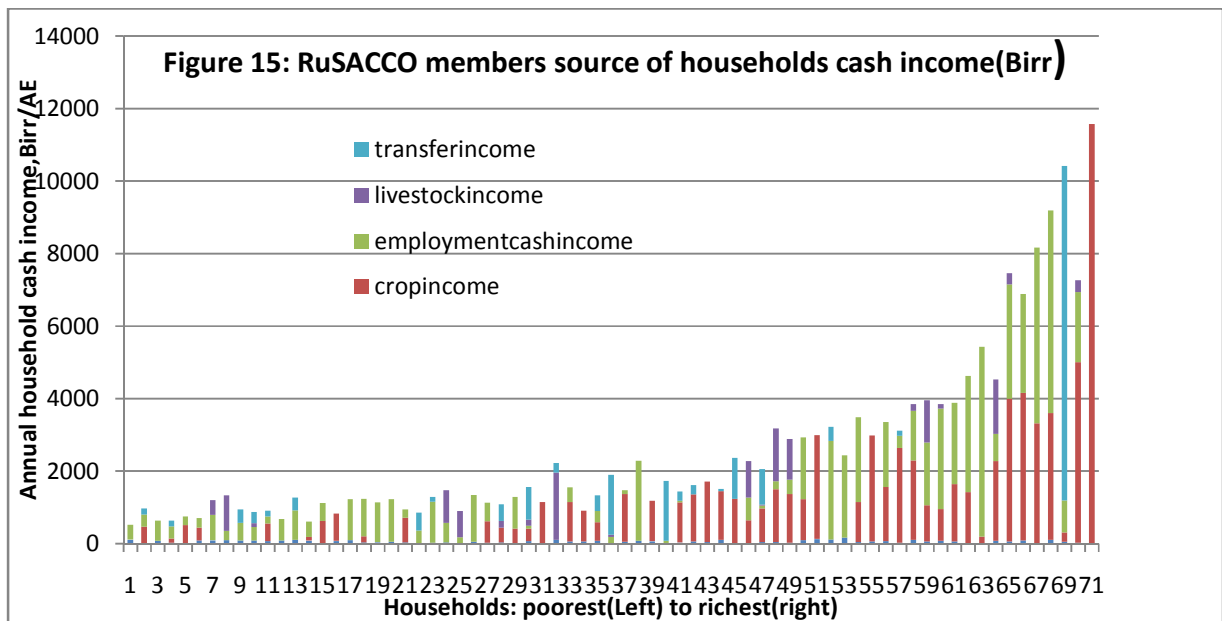
As can be seen from the above figure, the proportion of sample population who fall in the lowest calorie intake is low for the RUSACCO member households. The lowest calorie is indicated by the food poverty line based on WHO standard. Households fall in this category are labeled as food poor. In this case, there are 8 food poor households in the non-RUSACCO sample households, which are 13 percent as compared to RUSACCO member households 3 % (only two households). Taking 2600 Kcal/ per person per day as a cutoff level of food security, this suggests that the RUSACCO beneficiary households are relatively the most food secure.

As far as the result is concerned, most of the non-beneficiary households are on the food poverty line where as larger proportion of beneficiary households is above the food poverty line. This clearly shows that the prime objectives of RUSACCO services are to lift poor people out of abject poverty and it seems that, this program is achieving its intended purpose.

The differences between RUSACCO beneficiary and non-beneficiary households imply that, RUSACCO beneficiaries are relatively better-off in their household incomes as well as asset diversification which definitely lead to better calorie consumption. More importantly it implies that, since most of the beneficiaries are involved in trade, they could generate better income than non-beneficiaries and these incomes created better purchasing power.

4.5.5 Sources of Household cash income of Yenesanet Fana RUSACCO and non-RUSACCO members

Figures 15 and 16 show sources of household income as cash of RUSACCO members and non-members, during the period April 2013-March 2014 reference year



These figures show the proportion of household cash income derived from each of the four income categories used in collecting household data: crops, livestock, employment and transfers. No income from the sale of wild foods was recorded.

In the majority of households sampled from RUSACCO members, the main source of income was derived from employment 39% (mainly pity trade) and followed by the sale of crops which contributed 33%. The other two sources of income i.e. livestock and cash transfers/gifts contributed to 15% and 13% households' incomes respectively. In non-RUSACCO members the dominant source of cash income was employment (casual labor) which contributed to the incomes of 44 households (47%), followed by income from the sale of crops 28%. Livestock and cash transfers/gifts contributed to 11% and 15% households incomes respectively.

Chapter 5. Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

The objective of the study is to investigate whether there are differences in household asset ownership, source of income, household disposable incomes, child education, Household standard of living, and food intake in Kilocalories (WHO standard) among members and non-members of Yenesanet Fana RUSACCO union. Based on these, the research findings are summarized as follows:

Household asset are one indication of wealth and level of income. Based on this, the level of household asset ownership of RUSACCO members are better than non-RUSACCO members. The average farm land holding of members and non-members have no significant differences. Majority of both households own farm land less than one hectare, which is 54% and 73% of member and non-member households respectively. The reason for low levels of ownership of non-RUSACCO member households may be due to lack of access to credit.

In the case of cattle ownership, 21% of RUSACCO members' sampled households own cattle five and more than five as compared to that of non-RUSACCO member that owned only 5% of sampled households. The other areas of comparison were the ownership of tin roofed houses, in this case 52% of RUSACCO member's households own tin roofed houses as compared to 26% of non-RUSACCO members.

The major sources of household incomes for the RUSACCO member beneficiaries are small businesses (self-employment) 39% and followed by the sale of crop that contributed 33%. The other two sources of income i.e. livestock and cash transfers/gifts contributed to 15% and 13% households' incomes respectively. In non-RUSACCO members the dominant source of cash income was employment (casual labor) which contributed to the incomes of 44 households (47%), followed by income from the sale of crops 28%. Livestock and cash transfers/gifts contributed to 11% and 15% households incomes respectively.

The RUSACCO member households have more disposable income than non-RUSACCO members. For instance, the mean household disposable income of RUSACCO member is 2107.11 birr whereas the mean household disposable income of non-RUSACCO member household is 952.05 birr. Hence the income gap between the two categories of mean households is 1,155.06 birr per annual. According to statistical software the independent t-test analysis result, the mean value of the two groups is significantly different from one another at 0.005 level of significance. The result of the t-test also revealed that there was high standard deviation in the disposable income of RUSACCO members than that of the non members.

RUSACCO member beneficiaries are better in educating their children in such a way that 80%, 20% and 6% of RUSACCO member households able to sent their children to primary, secondary and tertiary education respectively, Whereas 44% and 8% of non-RUSACCO member households were able to sent their children to primary and secondary school respectively and they didn't able to send their children to tertiary level at all. This shows that, 20 percent of RUSACCO members and majority percent of non-RUSACCO members in the above mentioned households are never sent their children to schools. Moreover, the level of schooling in the non-member households was investigated because of the fact that, for the poor households in the rural areas, child education especially girls education depends on the income of the family. To this end, the result shows that 80 percent of RUSACCO member households and 44 percent of non-member households are currently sent their

children to primary schools. As a result, there are significant proportions of non-RUSACCO member who are never sent their children to school. The low schooling of children implies that families are using child labor for household tasks such as keeping livestock, fetching water, collecting fire wood, washing clothes, cleaning houses and caring for the small children as well as engaging in the family businesses. These activities are closely related to the short-term food security. Hence one can safely say that, families use child labor to maintain household food security in the short run. This is because children largely supplement the household food security either in the form of income generation or labor contribution.

RUSACCO member beneficiary households are better in living standard than non-RUSACCO member households: the standard of living among RUSACCO members and non-member households, based on the local cost of basic non-food needs, derived through discussion with local key informants (see Table 10 above). Those households represented in light green in figures 11 and 12 can both feed themselves to the required level and have sufficient remaining income to purchase a minimum set of non-food needs. Forty three (61%) of those sampled from RUSACCO members and 29 households (46%) of those sampled from non-RUSACCO member households were above the standard of living. But twenty eight households (39%) of those sampled from RUSACCO members and 33 households (54%) of those sampled from non-RUSACCO member households were above the X axis but are represented in red. This is because

although they have sufficient income to meet their food energy needs, their remaining income is not sufficient to purchase essential non-food items.

The adult equivalent calorie consumption demonstrated that, 3% of RUSACCO member beneficiary households consumed low calorie (below 1660 Kilo calorie/person/day) which is far below WHO standard (2600Kcal/AE/day). For the non-beneficiary in the same district the rate is 13%. Moreover, 97% of RUSACCO member beneficiary households meet their energy needs to WHO standard, whereas 87% of non-RUSACCO member households meet their energy need to WHO standard. These findings showed that, the food shortage is more prevalent in the non-beneficiary households.

5.2 Conclusion

Access to saving and credit cooperative services improve and diversify the income of beneficiary households. The comparisons made between the incomes of RUSACCO member beneficiary and non-member households show that there is a significant difference among RUSACCO member and non-member households. Furthermore, the assessment made on the income diversification strategies of the two categories demonstrate that, the beneficiary households have been more engaged in self employment activities than non beneficiaries, especially in the petty trading sector which include grain and small ruminant trading, tea shops, vegetables and fruits among others. This means that, small business is the main source of incomes for the RUSACCO member households. Employment plays a significant role in rural village economy of

Yenesanet Fana RUSACCO union member households; it makes up 39% and 33% of total cash income respectively for members and non-members. Lack of saving and credit cooperative services could be a constraining factor to income diversification, which can be an important risk management strategy for poor households. Furthermore, saving and credit services are used to spread risks when catastrophe situations occur. Such circumstances may not affect the diverse income generation activities of households equally and severely.

From the total 71 RUSACCO member and 60 non-RUSACCO member households sampled, 3% and 13% respectively, were unable to meet their minimum food requirements, as set out by the WHO (1985 reference standards). As to the role of micro finance services on food security, beneficiary households have shown better calorie consumption. Moreover, most of the non-beneficiary households fall below food poverty line in terms of both income and calorie consumption. The improved level of income and the subsequent expenditure on food items led to better calorie consumption among the beneficiary households in the study areas. Thus, a significant number of RUSACCO member beneficiary households fall above the (2600Kcal/person/day).

The disposable income of 46% of RUSACCO member households and 54% of non-members was lived below the standard of living threshold (their income was not sufficient to purchase essential non-food items). These households are vulnerable to external shocks; their disposable incomes are small and so they

would not be able to withstand shocks resulting in the loss of food or cash income. This makes them particularly exposed to the effects of climate change on production and agricultural employment.

5.3 Recommendations

Based on the preceding conclusion, the following recommendations are made:

- ✓ Yenesanet Fana RUSACCO union interventions should focus on agricultural laborers who do not have farmland or own very small plots of farmland, with large families they are unable to feed as a consequence. As the agro-ecology of the area is drought prone in the lowland and soil fertility is poor, with only small and fragmented plots of land owned in the midland area, agriculture is not sufficiently productive to feed the population. As such, diversification of income to non-agricultural activities through the provision of rural micro credit is needed, along with market analysis to identify viable investment opportunities
- ✓ RUSACCO service delivery should be flexible in terms of repayment periods and frequency of repayment in such a way that during catastrophe circumstances (drought, conflict, etc) repayments should be postponed to the next wet season.
- ✓ Since the saving and credit cooperative services has been serving positive role in improving the users food security situation and this role of it has been magnified by the majority of the respondents of this study, the institution is recommended to continue the provision of its services to

the present users of its program as well as to extend its service to non-users too.

- ✓ The size of loan to be provided to the rural households at present need to be improved as much as possible so as to enable the loan takers to use it in more meaningful ways for better benefit and/or meaningfully diversify their source of income.
- ✓ The current coverage of beneficiary households (8687 households in three districts) should be increased to reach as many poor households as possible.
- ✓ Finally, participatory research is required to gain adequate understanding of the RUSACCO member household economies, cash management behavior, risk management strategies and indigenous credit systems to further complement the RUSACCO services.

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7. Appendices

Appendices 1: Disposable Income and standard living of RuSACCO member and non-members households.

Table 1: Disposable Income of RuSACCO Members And Non-members households

DI of Non-members		DI of RuSACCO members	
HH ID	DI/AE	HH ID	DI/AE
81	-355.66	108	-210.22
32	-200.32	1	-97.93
38	-199.49	76	8.44
72	-190.73	24	91.45
144	-179.79	14	112.24
92	-159.09	84	135.66
147	-155.87	91	154.37
71	-99.94	93	186.21
22	3.06	87	192.19
141	17.48	85	244.23
132	20.63	69	252.53
137	26.55	88	256.2
160	29.91	106	289.07
138	35.33	82	309.04
86	53.22	8	318.07
145	66.6	74	322.03
105	67.51	97	333.74
9	81.19	36	339.53
157	82.58	39	347.17
90	87.82	53	454.19
51	104.03	33	468.84
6	110.67	2	537.91
126	111.42	25	561.99
17	124.97	35	580.41
100	130.07	13	587.97
120	134.16	49	613.48
41	161.61	29	658.68
36	168.56	37	686.15
16	217.53	19	748.8
98	263.13	68	787.18
135	354.41	15	801.25
28	375.06	104	875.12
54	397.24	58	875.17
77	472.35	57	914.98
104	489.84	78	936.97
152	499.22	18	1019.38

47	582.18	50	1083.85
35	627.2	80	1209.27
7	633.52	65	1320.54
34	701.15	9	1332.52
99	702.59	31	1417.26
26	1057.45	63	1499.5
83	1082.54	43	1505.88
40	1088.72	103	1750.53
8	1104.71	20	1951.27
55	1105.19	12	1958.54
95	1219.33	46	2071.76
96	1412.11	42	2228.23
46	1488.77	30	2303.15
10	1793.07	94	2396.82
58	1961.53	125	2400.61
18	2033.54	113	2621.17
118	2271.5	163	2675.49
45	2541.01	40	2699.98
60	3380.15	59	2857.53
21	3882.89	66	3106.77
30	3971.96	23	3247.63
44	4840.82	107	3371.68
73	5661.69	64	3407.12
67	7290.06	79	3828.34
		61	3977.86
		4	4192.9
		10	4497.92
		75	4668.75
		62	7166.79
		89	7340.99
		16	8054.7
		101	9053.22
		54	9138.94
		27	10327.65
		21	10938.17

Table 2: RUSACCO members households Standard of Living

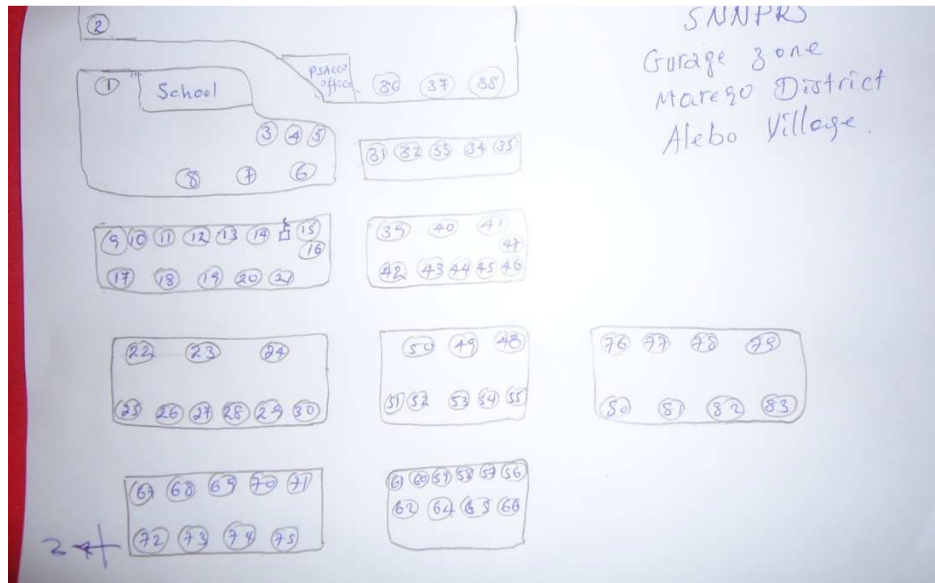
HHs Blow standard of living		HHs Above Standard Of Living	
HHs ID	DI/AE	HHs ID	DI/AE
108	-210.22	13	587.97
1	-97.93	37	686.15
76	8.44	19	748.8
24	91.45	15	801.25
14	112.24	104	875.12
84	135.66	58	875.17
91	154.37	50	1083.85
93	186.21	80	1209.27
87	192.19	65	1320.54
85	244.23	9	1332.52
69	252.53	31	1417.26
88	256.2	63	1499.5
106	289.07	43	1505.88
82	309.04	103	1750.53
8	318.07	20	1951.27
74	322.03	12	1958.54
97	333.74	46	2071.76
36	339.53	42	2228.23
39	347.17	30	2303.15
53	454.19	94	2396.82
33	468.84	125	2400.61
2	537.91	113	2621.17
25	561.99	163	2675.49
35	580.41	40	2699.98
49	613.48	59	2857.53
29	658.68	66	3106.77
68	787.18	23	3247.63
57	914.98	107	3371.68
78	936.97	64	3407.12
18	1019.38	79	3828.34
		61	3977.86
		4	4192.9
		10	4497.92
		75	4668.75
		62	7166.79
		89	7340.99
		16	8054.7
		101	9053.22
		54	9138.94
		27	10327.65
		21	10938.17

Table 3: Non-RUSACCO members households Standard of Living

HHs Blow standard of living		HHs Above Standard Of Living	
HHs ID	DI/AE	HHs ID	DI/AE
81	-355.66	26	1057.45
32	-200.32	83	1082.54
38	-199.49	40	1088.72
72	-190.73	8	1104.71
144	-179.79	55	1105.19
92	-159.09	95	1219.33
147	-155.87	96	1412.11
71	-99.94	46	1488.77
22	3.06	10	1793.07
141	17.48	58	1961.53
132	20.63	18	2033.54
137	26.55	118	2271.5
160	29.91	45	2541.01
138	35.33	60	3380.15
86	53.22	21	3882.89
145	66.6	30	3971.96
105	67.51	44	4840.82
9	81.19	73	5661.69
157	82.58	67	7290.06
90	87.82		
51	104.03		
6	110.67		
126	111.42		
17	124.97		
100	130.07		
120	134.16		
41	161.61		
36	168.56		
16	217.53		
98	263.13		
135	354.41		
28	375.06		
54	397.24		
77	472.35		
104	489.84		
152	499.22		
47	582.18		
35	627.2		
7	633.52		
34	701.15		
99	702.59		

Appendices 2: Sampled households Village Map

A. Under Mareko district Alibo Village Map



B. Under Meskan District Mechmena Village Map



Appendices 3: Individual household interview form

Introduction: I am a student of Indira Gandhi Open University under the department of Rural Development. As partial requirement of the program, I am undertaking a research study with the title: Impact of RUSACCO on individual household food security and income in the case of Yenesanet Fana RUSACCO union. The purpose of this questionnaire is to systematically and objectively secure information to better understand the rural saving and credit cooperative role on improvement of the food security and disposable income situation of rural households using the RUSACCO members and non-members households at present. So you are kindly requested to extend your cooperation for the success of this study by genuinely answering all questions in the questionnaire. I assure you that your individual answers will be kept strictly confidential. I would like to thank you in advance for your kind cooperation.

Individual Household Economy

AGRICULTURAL YEAR: April 2013-March 2014

Date:

Household number:

Place:

Interviewer:

Interviewee:

Have you (i) explained the purpose of the interview, (ii) covered confidentiality, and (iii) explained that participation is voluntary?
Y / N

Has the interviewee given their consent? Y / N

1. Name of current household head: Record the name they would use for 'official' purposes.

2. Details of all household members: Include everyone who eats and sleeps here; also include 'part-time' residents (i.e. family members who work away for part of the year but contribute to household income).

Name	For children of school age, is the child in school? Indicate Primary or Secondary. (Do not include household members who have left school.)	Sex	Age	Full-time or part-time	If part-time, state total number of months away from home

3. Land: Include information for each plot.

Type of land (e.g. upland, marshland)	Area of each plot	Area cultivated	Irrigated: y/n	Area rented from others last year	Area rented out to others last year
1.					
2.					
3.					

4. List major assets (i.e. items that can contribute to household income): e.g. bicycle, plough, house for rental, brick mould, sewing machine, land for rental, mobile phone, radio, crop-processing machine, ox cart, brewing utensils, etc.

Asset	Number	Note the cost of replacing tools (e.g. the cost of a hoe) and the frequency and number replaced

House

Roof type: tin or grass?	Number of rooms

List livestock held by the household during the study period:

Animal	Number

5. Crop production: With the interviewee, make a sketch of their plot/s of land, indicate the size of the plot/s, and list all the crops grown on that land in the last full agricultural year. Use the back of this sheet and indicate Season 1 / Season 2 where relevant.

Next, fill in the following table, indicating total crop production, amounts sold, other uses, amounts consumed by the household and inputs and input costs. Do not attempt to convert local measures to kg during the interview. Check if 'sacks' are 90kg or 50kg. Use the back of the form if necessary for any answers.

N.B. INCLUDE GREEN CROPS (e.g. 'GREEN MAIZE', also referred to as 'fresh maize') as separate items (e.g. list both 'maize' and 'green maize', if relevant).

Crop	Total production (local measure)	Total production (standard units, e.g. 'kg' or 'item')	Amount sold (standard units, e.g. 'kg' or 'item')	Sale price per unit	Months sold	Other uses e.g. given away, saved for seeds, etc. (standard units, e.g. 'kg' or 'item')	Amount consumed by household (standard units, e.g. 'kg' or 'item')	Inputs & input costs Note the quantity of production inputs used, and their cost. Note cost of any non-household labour employed in cultivation.

6. Livestock and livestock products. Include all livestock and poultry. Use the back of the form if necessary for any answers.

Animal	Number	Amount of milk consumed	Milk sold How much, when, and at what price?	Number of eggs consumed	Eggs sold How many, when, and at what price?	Amount of meat consumed	Meat sold How much, when, and at what price?	Live sales How much, when, and at what price?	Other uses e.g. skins, wool, animals given away, etc. If sold, at what price	Inputs & input costs Note veterinary, drug and any other costs incurred.

7. Employment: List all sources of employment, for each household member. Use the back of the form if necessary for any answers.

Month	Work	Who?	How many days per month?	Total value of work per month
1				
2				

8. Wild foods: Is any wild food collected? Include total quantity consumed and sold

Food Name and (if necessary) describe type of food, e.g. dark green leaves	Amount sold (standard units, e.g. 'kg' or 'item')	Sale price per unit	Months sold	Amount consumed by household (standard units, e.g. 'kg' or 'item')	Other comments

9. Transfers: Include all sources including relief, support from relatives who are not part of the household, neighbours, etc.

Source of assistance e.g. NGO, neighbour, church, relative, government relief	Type of assistance If food, record food type (e.g. maize, cassava, etc.)	Quantity If food, total amount (standard units). If cash, total per year.	If food, quantity sold (standard units) and sale price	If food, quantity kept for own household consumption (standard units)	Other information e.g. when assistance was received

10. Other food transfers: Check if any food is gained by children or others, e.g. gleaning after the harvest, begging, etc.

Food	Total amount consumed per year (standard units)	Other comments e.g. other uses, and when the food is given to the family

11. Other sources of income not yet recorded (e.g. from property rental, hire of bicycle or other equipment, pensions, other employment benefits, etc.). **Cross check for any remittances from 'part-time' members of the household. These should be noted in the employment section of the form.**

Source of income/benefit	Value per year	Other information, e.g. when income was received

12. Is the household a member of the multi-purpose co-operative?

13. Is anyone in the household a member of a saving and credit cooperative.

Yes/No

Did anyone in the household receive credit or loans during the survey period? If Yes

Source of credit / loan	Purpose of credit / loan	Value of credit / loan	Repayment per month	Total repayment over the year

14. Are any adults in the household unable to work due to disability or old age? Who?

15. Did any household member die during the study period (use appropriate term, e.g. 'pass away')? Who? In which month did this happen?

Did you able to cover your food? If yes, for how many month?

Do you have any questions or comments?

