

**DETERMINANTS OF SMALLHOLDER FARMERS ACCESS TO
FORMAL CREDIT:
THE CASE OF METEMA WOREDA, NORTH GONDAR, ETHIOPIA**

M.Sc. Thesis

SISAY YEHUALA

April, 2008

Haramaya University

**DETERMINANTS OF SMALLHOLDER FARMERS ACCESS TO
FORMAL CREDIT:
THE CASE OF METEMA WOREDA, NORTH GONDAR, ETHIOPIA**

**A Thesis Submitted to the Faculty of the Agriculture
Department of Rural Development and Agricultural Extension
School of Graduate Studies
HARAMAYA UNIVERSITY**

**In Partial Fulfillment of the Requirements for the Degree of
MASTER OF SCIENCE IN RURAL DEVELOPMENT AND
AGRICULTURAL EXTENSION
(RURAL DEVELOPMENT)**

**By
Sisay Yehuala**

**April 2008
Haramaya University**

SCHOOL OF GRADUATE STUDIES
HARAMAYA UNIVERSITY

As Thesis research advisor, I hereby certify that I have read and evaluated this Thesis prepared, under my guidance, by Sisay yehuala entitled “DETERMINANTS OF SMALLHOLDER FARMERS’ ACCESS TO FORMAL CREDIT: IN THE CASE OF METEMA WOREDA, NORTH GONDAR, ETHIOPIA”. I recommend that it be submitted as fulfilling the Thesis requirement.

Tesfaye Lemma (Ph.D)

Major Advisor

Signature

Date

Ranjitha Puskur (Ph.D)

Co-advisor

Signature

Date

As member of the Board of Examiners of the M.Sc. Thesis Open Defence Examination, we certify that we have read and evaluated the thesis prepared by Sisay Yehuala and examined the candidate. We recommended that it be accepted as fulfilling the thesis requirement for the degree of Master of Science in Rural Development and Agricultural extension (Rural Development).

Fekadu Beyene (Ph.D)

Chairperson

Signature

Date

K.P.M. Chinnan (Ph.D)

Internal Examiner

Signature

Date

Habtemariam Abate (Ph.D)

External Examiner

Signature

Date

DEDICATION

I dedicate this thesis to my wife **BIZUALEM KEBEDE**, and all my sons and daughters for nursing me with affections and love and their dedicated partnership in the success of my life.

STATEMENT OF AUTHOR

First, I declare that this thesis is my bonafide work and that all sources of materials used for this thesis have been duly acknowledged. This thesis has been submitted in partial fulfillment of the requirements for an advanced M.Sc degree at the Haramaya University and is deposited at the University Library to be made available to borrowers under rules of the Library. I solemnly declare that this thesis is not submitted to any other institution anywhere for the award of any academic degree, diploma, or certificate.

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Name: Sisay Yehuala

Signature.....

Place: Haramaya University, Haramaya

Date of submission:

BIBLIOGRAPHY

The author, Sisay Yehuala, was born in North Gondar zone Dabat Woreda on February 13, 1959. He attended his elementary and junior school education in Dabat Elementary and Junior School and high school education at Debark Secondary School. After completion of his high school education, he was employed in the ministry of education and served for five years as a teacher in the elementary School.

He joined Debre Zeit junior college of agriculture in September 1982 and graduated with diploma in Rural Economics and Social Development (RESO) in 1984. Soon after graduation of the diploma program, he joined the Ministry of Agriculture (the then Gondar province Agricultural Office) at Libo awraja Agricultural Office and North Gondar zone Agricultural Development Department and worked at different positions since September 2000.

Then, after 15 years service in the ministry of agriculture, he joined the then Alemaya University in September 2000 and graduated with Bachelor of Science Degree in Agricultural Extension in 2003. After graduation, he continued to serve in North Gondar office of agriculture since September 2006. In September 2006 he joined the School of Graduate Studies at Haramaya University, Department of Rural Development and Agricultural Extension (Rural development). He is married and a father of five children.

ACKNOWLEDGEMENTS

First and foremost let me praise and honor the almighty God for the opportunity and capacity given to me to realize my aspiration.

Several individuals and organizations deserve acknowledgement for their contributions to the study. I am greatly indebted to my major advisor Tesfaye Lemma (Ph.D) and co-advisor Ranjitha puskur (Ph.D) for their unreserved help, advice, directing, insight guidance, critical review of my thesis manuscript, invaluable support and suggestions as without their professional help it was difficult to be successful in my academic, research work and thesis write up. I am also deeply grateful to Improving productivity and Market Success of Ethiopian farmers project ILRI/ IPMS for offering me full sponsorship of the research works.

The interest, involvement in my research work, and keen assistant of Ato Degsew Melak, head of North Gondar agricultural and rural development department was special to me, and is highly appreciable. My sincere appreciation and thanks also goes to my friends Ato Hailu Birhanu, Ato Dejenie Kebede, Ato Teshome Mullu, Ato Abebe Alemu, Ato Adane Adamsaged, Ato Tafese Kebede, W/o Yezabnesh Alemu, Ato Henok Araya and all other zonal agricultural and rural development department and Integrated livestock development project (ILDLP) staffs for their cheerful accommodation of resources, and without which the study can not be completed.

I acknowledge the help received from Ato Worku Teka Metema woreda IPMS rural development officer, Tesfaye Tamiru, and all other staffs of Metema woreda office of agriculture, workers of ACSI Metema sub-branch office, the extension workers and smallholder farmers in the study area and other collaborated individuals deserve special thanks for their unforgettable cooperation during data collection.

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LIST OF ABBREVIATIONS

ACSI	Amhara Credit and Savings Association
AIDB	Agricultural and Industrial Development Bank
AISCO	Agricultural Input Supply Corporation
ANRS	Amhara National Regional State
ARCPB	Amhara Regional Cooperative Promotion Bureau
BoFED	Bureau of Finance and Economic Development
BoA	Bureau of Agriculture
BRD	Bureau of Rural Development
CBE	Commercial Bank of Ethiopia
CSA	Central Statistical Authority
DA	Development Agent
DBE	Development Bank of Ethiopia
DPPC	Disaster prevention and preparedness commission
DTU	Development Technology Unit
FAO	Food and Agricultural Organization
FMSC	Farmers Multi Purpose Service Cooperatives
GDP	Gross Domestic Product
GO	Government Organization
HH	Household
IFAD	International Fund for Agricultural Development
ILRI	International Livestock Research Institute
IPMS	Improving Productivity and Market Success
LPM	Linear Probability Model
MFI	Micro Finance Institution
MLE	Maximum Likelihood Estimator
NBE	National Bank of Ethiopia
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for Development Cooperation

LIST OF ABBREVIATIONS (*Continued*)

OaA	Office of Agriculture
OLS	Ordinary Least Squares
ORDA	Organization for Rehabilitation and Development in Amhara
PA	Peasant Association
REST	Relief Society of Tigray
ROSCA	Rotating, Saving and Credit Association
SACCO	Saving and Credit Cooperatives
SEEP	Small Enterprise Education and Promotion
SME	Small and Medium Enterprise
SPSS	Statistical Measures for Social Sciences
UNDP	United Nation Development Program
UNFP	United Nation Population Fund
VIF	Variance Inflation Factor

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DETERMINANTS OF SMALLHOLDER FARMERS ACCESS TO FORMAL CREDIT: THE CASE OF METEMA WOREDA, NORTH GONDAR, ETHIOPIA

ABSTRACT

In Ethiopia, among other things, lack of finance is one of the fundamental problems hampering production, productivity and income of rural farm households. Since access to institutional finance is very limited, the majority of the poor are forced to search financial services through informal channels. The study was sought to ascertain factors that affect smallholder farmer's access to formal credit and also the status of women and different wealth groups' access to formal and informal credit sources in the study area. A two stage sampling method was employed to select three out of eighteen rural peasant associations and 130 farm households. Structured interview schedule was developed, pre-tested and used for collecting quantitative data for the study from the sampled farm households. Focus group discussion, group interview and field observations were held to generate qualitative data. Descriptive statistics and logit model were used for analyzing quantitative data. The output from the study indicates that 56 (43.1%) of the sampled farm households were formal credit users, whereas the remaining 74 (56.9%) were non-users. It was also found out that credit access to female headed households is still limited and the difference between the wealth groups in accessing credit from the formal sources was also statistically significant. Farmers acknowledge group lending that solves the problem of collateral requirement by lending institutions, controls misuse of borrowed funds and minimizes the risk of default and they also recognize the provision of saving services by MFI, while strongly criticizing the isolation of very poor farmers from the group formation. Moreover, the smaller loan size, earlier saving requirement which was not convenient to the farmers, and repayment period by the MFI were among the critical problems. Participation in extension package programs, Experience in credit use from the formal sources, total cultivated land size, number of livestock in TLU, collateral or group formation and membership of FMSC were highly important in influencing access to formal credit use as evidenced by the model output. Therefore, policy aimed to accelerate agricultural development in the area could be successful if these factors and problems are taken into consideration to access credit from the formal financial sources.

1. INTRODUCTION

1.1 Background

Ethiopia is one of the largest countries in Africa both in terms of land area (1.1 million km²) and population of 77.4 million 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 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.

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

uncreditworthy (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).

In Ethiopia, several microfinance institutions (MFIs) have been established and have been operating towards resolving the credit access problem of the poor particularly those who engage in petty business (Befekadu, 2007). Microfinance outreach is still so low in Amhara region or elsewhere in Ethiopia. For example, ACSI (the largest MFI in the country) managed to reach a total of over 698,000 poor people so far with regular credit. Currently, there are over 385,000 credit clients (with over 34% of them being poor women) and another 151,000 individual voluntary savers. But, given the number of economically active people outside the reach of the conventional financial service, estimated at over 2.9 Million, ACSI and other smaller MFIs and Saving and Credit Cooperatives (SACCOs) in the region only manage to reach between 10 and 12% of the demand. There are many economically active poor people still un-reached (Getaneh, 2005a).

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.

1.2 Statement of the Problem

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 can not 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 hinders 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.

To narrow the gap between owned and required capita rural farm households have been accessing credit from formal and informal financial institutions. In the Amhara region about 45.5% of the households had borrowed money for their livelihood in the last years, but the rest 55.5% could not. 65% of the HHs got credit from informal financial institutions in rural areas, which provided very small loan, for short period and especially for consumption. This indicates that the majority of the rural households could not borrow from the formal credit

sources due to lack of access to these sources. This big share of credit covered by the informal sources of finance also indicates that there is a huge unmet demand of credit (BRD, 2003).

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.

In the Amhara region, western low land woredas including Metema until a few years ago land was not a problem. But labor is in short supply and is expensive especially during peak weeding and harvesting periods. Farmers mostly use hired labor. This indicates that there is a high demand for cash during the peak periods for labor. Due to the fact that the formal sector is not in a position to satisfy the credit requirements of the farmers during the periods, they depend on the informal sector for their credit needs. Most informal lenders provide cash advance before the crop is harvested, farmers are then obliged to repay the loan in cash or in kind based on previous commitment made with the lender. Theoretical and empirical evidence in the region show that in the past years formal credit institutions failed to reach the poor, particularly women and the very poor households. On account of this background this study was undertaken, to fill the information gap on the factors affecting smallholder farmers' access to formal credit in Metema.

This study was intended to deal with the following research questions; what is the view of clients regarding service delivery of formal financial institutions in the study area? What is the position of different wealth and sex groups' access to formal and informal credit? What are the determinant factors that are affecting access to formal credit by smallholder farmers?

1.3 Objectives of the Study

The specific objectives of the study are:

1. To assess smallholder farmers' perception of the strengths and weaknesses of formal financial institutions in the study area
2. To identify the status of women and different wealth groups access to formal and informal credit sources
3. To identify factors that affect small-holder farmer's access to formal credit.

1.4 Scope and Limitation of the Study

The study aims at identifying determinant factors that affect smallholder farmer's access to formal credit and the status of women and different wealth groups' access to formal and informal credit. The scope of the study will be limited to Metema woreda, North Gondar zone. 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.

1.5 Significance of the Study

The lack of capital and the absence of attractive investment opportunities are considered to be important reasons behind inadequate economic development in many developing countries. This is why an attempt is made in most developing countries to encourage, through development policy measures, capital formation as well as the supply of financial means in the form of credit through official financial institutions (Manig, 1996).

Because of the lack of access to credit in the formal sector, productive assets of the poor are depleted; assets used as collateral are transferred from the poor to wealthier informal lenders, and households may become impoverished. Therefore, the findings of the research would be

of great policy use. The study of factors that affect smallholder farmer's access to formal credit and assessing the status of women and different wealth groups in the study area is important in providing information that will enable to take effective measures by lending and policy makers to improve access to credit.

Therefore, the outcome of the study would be useful to identify innovative options and institutional arrangements that would serve as an input for policy makers in formulating rural credit policy.

1.6. Organization of the Thesis

This thesis is organized into five chapters. Chapter one constituted the introduction, which focuses mainly on the background, statement of the problem, objectives, the scope and limitation and significance of the study. Review of the theoretical and empirical literature pertinent to the concern of the thesis is presented in Chapter two. Chapter three describes the research methodology that includes a brief description of the study area, data collection procedures and analytical techniques. Chapter four reports on results of the study along with discussion. Finally, summary of the major findings, conclusion and recommendation are presented in Chapter five.

2. LITERATURE REVIEW

2.1 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 the free on line dictionary (undated), credit transactions have been indispensable to the economic development of the modern world. Credit puts to use property that would otherwise lie idle, thus enabling a country to more fully employ its resources. The presence of credit institutions rests on the readiness of people to trust one another and of courts to enforce business contracts. The principal function of credit is to transfer property from those who own it to those who wish to use it, as in the granting of loans by banks to individuals who plan to initiate or expand a business venture. The transfer is temporary and is made for a price, known as interest, which varies with the risk involved and with the demand for, and supply of, credit.

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.

2.2 Rural Credit

2.2.1 Definitions and concepts

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 whom 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).

2.2.2 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).

2.3 Perspectives on Rural Finance

Traditional and new views of rural finance

In the 1950s and early 1960s, credit provision was considered a key instrument for breaking the 'vicious circle' of low incomes, low savings, and low productivity. However, in that period emphasis was far more on market oriented farmers and commercial agriculture than on peasants. From the mid-1960s, and up to the present time, small farmers and the rural poor have increasingly become the chief target of credit interventions. In addition, since the early-1970s a strong equity dimension emerged in the aims of credit schemes and small farm projects.

The traditional approach to credit policy is for funds for lending to farmers to be predominantly supply-led. This means that they originate from the central bank or from external donors, rather than from local saving in the rural economy (Ellis, 1992). According to

Assefa (2004), the new rural financial market approach assigned a different role to the government with less direct intervention of the government in credit allocation and credit delivery.

Ellis (1992), stated that Past credit policies have tended to make wrong assumptions about peasants, viz. that they are unable to save, and that their demand for credit is highly sensitive to the level of the interest rate. There were new views of credit objectives, instruments (interest rate, credit targeting, and loan portfolio regulation and others) and institutions that arise from the defects of the old. A traditional view that smallholder farmers and poor rural people are unable to save has been shown to be wrong in several experiments. The main features of the rural poor in this context are: their income is uneven; their potential to save involves very small amounts, they can not afford 'costs' associated with saving, and they are naturally concerned with the security of saving. For peasants who are not so-poor, lack of saving is much more to do with lack of opportunity, or distrust of the alternatives available, than to do with low savings capacity. Households keep their assets in goats or cattle rather than in the bank, especially when the bank discourages savings, or appears to be run by untrustworthy officials.

On the other hand, the traditional view that market interest rates discourage farmers from making use of credit is wrong in most cases. It rests on the mistaken assumption that credit demand by farmers is highly elastic with respect to the price of credit, whereas for small farmers requiring short-term loans to overcome cash flow problems, demand is in reality inelastic.

The successful reorientation of credit policy in the future requires an imaginative and experimental approach to institutional innovation. Rural credit provision needs to be located in a context of diverse institutions providing lots of different services, not a single bureaucracy providing just one kind of service. The few case studies of successful credit institutions show that devices like regular small savings collected on the doorstep, group lending and group accountability for loan repayment, and improved incentives and

performance methods within financial institutions, provide potential ways forward (Ellis, 1992).

2.4 Rural Financial System and Rural Finance Reform in Ethiopia

Rural finance in Ethiopia, as in other developing countries, has dualistic features. There exist both formal and informal credit institutions in the country.

2.4.1 Formal financial institutions in Ethiopia

The formal sources are financial institutions that are set up legally and engaged in the provision of credit and mobilization of savings. These institutions are regulated and controlled by the National Bank of Ethiopia (NBE). In the Ethiopian context formal financial sector includes National Bank of Ethiopia (NBE), commercial banks (owned by private and public), Development Bank of Ethiopia (DBE), credit and savings cooperative, insurance companies (both public and private) and microfinance institutions (owned by regional governments, NGOs, associations and individuals), (NBE, 2003).

During fiscal year 2002/03, the numbers of banks operating were nine, of which three were government owned. The number of insurance companies was also nine, of which one was state owned (annual report of NBE, 2004). According to the report, foreign entry in to the financial sector is not allowed until domestic banks attain a certain degree of desired competitiveness and the National Bank's supervisory and regulatory capacity is adequately strengthened.

The numbers of bank branches reached 339, of which 172 or about 51 percent belong to the Commercial Bank of Ethiopia. Despite modest branch expansion, Ethiopia remains as one of the under-banked countries even at sub-Saharan African countries standard. The bank branch to population ratio was 1:20,400 during 2002/03. Similarly, total capital of the banking system reached Birr 2.7 billion, of which about 75 percent was hold by government owned

banks. Commercial Bank of Ethiopia accounted for more than 47 percent of total capital of the banking system (excluding NBE).

Total branches of insurance companies reached 106 at the end of the fiscal year (2002/03). Yet geographical distribution of bank and insurance branches was highly skewed to major towns and cities. Nearly 42 percent of insurance and 31 percent of bank branches were located in Addis Ababa (NBE, 2004).

Microfinance institutions in Ethiopia

According to a report from NORAD (2003), Microfinance can be defined as provision of a broad range of client-responsive financial services to poor people through a wide variety of institutions. Microcredit activities in rural and urban Ethiopia were initiated by local and international NGOs (Wolday, 2004). According to Pischke *et.al*, (1996), there were 30 NGOs in Ethiopia who were delivering microcredit services but concentrated in urban areas. Although the NGOs had contributed to testing innovative methodologies and products, they had the problem of combining the humanitarian objectives of the NGOs with the financial objectives of the microcredit program.

In Ethiopia integration of the credit schemes initiated by local NGOs like the Relief Society of Tigray (REST) and Organization for Rehabilitation and Development in Amhara (ORDA) into the formal financial system contributed to the formulation of a regulatory and supervision framework for efficient delivery of services to the urban and rural poor and the issuance of a new proclamation for Licensing and Supervision of Micro-Financing Institutions in 1996 (Proclamation No.40/1996) (Wolday, 2004).

According to Getaneh (2005a), to further stimulate economic activities and provide opportunities for the majority of poor to escape poverty through availing more and appropriate financial services, the Government has been refining the regulatory framework for the microfinance operations. The regulation that put a ceiling on the interest rate that micro-financial institutions could charge from their credit clients no longer exists and a new liberal system is in operation (Directive No. MFI/92/98) whereby MFIs could decide the level of

interest rate they charge as long as they can remain in the competitive market, thus opening up a new opportunity in the effort to ensure both operational and financial sustainability for MFIs.

Although most MFIs in developing countries aim to reach poor people, it has become increasingly apparent that they rarely serve very poor people. Most MFIs reach the “upper poor” in much greater numbers than the “very poor.” The extent to which microfinance programs are able to reach the poorest of the poor remains an open debate (SEEP network, 2006).

On the other hand, according to Wolday (2004), the Ethiopian microfinance industry has been growing in terms of its outreach as well as its asset and capital base. As of December 2003, the 23 MFIs through a network of 465 service outlets (called 'branches' or by some MFIs 'sub-branches') the number of 'active borrowers' (i.e., the number of loan clients with outstanding loan balance) has reached 753,084 and the number of active voluntary savers (i.e., the number of voluntary savers with outstanding savings balance) has reached 318,000. Because Ethiopian MFIs typically provide one loan per household (usually to the head of the household), an outreach of 753,084 households' means, the industry has reached around 3.8 million people. This figure is based on a conservative estimate that there are 5 members in a household.

Amhara credit and saving institution (ACSI)

As indicated by Getaneh (2005b), the Amhara Credit and Saving Institution (ACSI) were established in the Amhara region, and aims to fill the gap of formal institutions by meeting the needs of small scale borrowers in income generation schemes. It was initiated by the Organization for the Rehabilitation and Development in Amhara (ORDA), an indigenous NGO engaged in development activities in the Amhara region. In a move to depart from the more usual direct provision of relief, the NGO created a department to supply small credit to rural people on a pilot basis. That department grew into a separate institution, and ACSI was licensed as a microfinance share company in April 1997, with the primary mission of

improving the economic situation of low income, productive poor people in the Amhara region through increased access to lending and saving services.

According to Getaneh (2006), in terms of Outreach, currently, in ACSI there are about 484,000 active credit clients (about 35% women), with an active credit balance. But, given the number of economically active people outside of the reach of the conventional financial service, estimated at about 3 Million, the outreach is clearly minimal. It is only 12-15% of demand taking only the number of the very poor. Presently, ACSI is operating in all Woredas of the Region, and has covered about some 75% of total Kebeles. There are many economically active poor people still un-reached.

Cooperatives

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).

Amare (2005), referring to ARCPB indicated that in Amhara national regional state (ANRS) there were a total of 1,025 farmers' multipurpose service cooperatives (FMSCs) with a combined capital of Birr 45,132,744 by July 2002. In 2004 around 622 (60.68%) FMSCs were actively engaged in agricultural input credit extension activity. They administered most of the fund borrowed by the regional government from commercial banks. They administered more than 80% of the input credit in 2004 in the region.

2.4.2 Informal credit institutions in Ethiopia

The inability of the formal financial sector to provide adequate financial services to small farmers and the poor in general continued even after the reform (Assefa 2004). A study by the National Bank of Ethiopia (1996) concluded that "CBE and DBE have only catered for insignificant demand for credit of small farmers. The bulk of financial services provided to small and micro-enterprises in rural and urban areas, therefore, mostly originated from the informal sector such as Iqqub, moneylenders and friends" (NBE, 1996)

On the other hand, as Dejene (2003) stated the non-formal sources in Ethiopia include relatives and friends, moneylenders, neighbors, Iddir, Iqqub and Mahaber. The major sources of loans include friends and relatives (66 percent), moneylenders (14 percent), and Iddir (7 percent). In other words the bulk of the rural credit comes from informal sources. Every year, the informal sector mobilizes resources equivalent to about 10 percent of deposits mobilized by all banks in Ethiopia. Rural Iddirs mobilized through informal loans alone an amount 3.5 times the total capital of all micro finance institutions in Ethiopia.

The socio-economic base line survey in the Amhara region review that the most widely used financial institutions in rural areas were informal, which provided very small loan size, for short period and especially for daily consumption. The survey result indicates that from the total respondents about 65 per cent of the households were accessing credits from informal institutions. It also identifies that the percentage share of the number of borrowers by institution indicates that ACSI caters to 22%, co-operatives 9 %, NGOs 3%, Arata Abedari 20% relatives/friends 44% and others 2% (BRD, 2003).

It is argued that informal sources, however, do not generate enough and affordable finance for business to stimulate economic development. In particular, the individual moneylender (the Arata Abedari) is extremely expensive, and is only resorted to in the absence of any alternative. In this case borrowers are required to provide guarantors and the interest rate is excessively high. Until recently the annual interest rates that the money lenders charged was estimated to range from 60% to 120% (Getaneh, 2005).

2.4.3 Rural finance reform in Ethiopia

Following the overthrow of the Derge regime, changes in economic policies as well as political, administrative and institutional structures began to be introduced by the new government. Hence, financial liberalization was among the reforms that have been undertaken by the new government. Financial liberalization is important component of a successful development strategy.

Financial liberalization in Ethiopia began at the end of 1992. The financial reforms undertaken in Ethiopia include elimination of priority access to credit, interest rate liberalization, restructuring and introduction of profitability criteria, reduced direct government control on financial intermediaries and limits bank loans to the government, enhancement of the supervisory, regulatory and legal infrastructure of the NBE, allowing private financial intermediaries through new entry of domestic private intermediaries (rather than privatization of the existing ones) and introduction of treasury bills through auction markets.

Restructuring of the financial institutions was felt necessary to promote competition, reduce government ownership and control, and balance the type of institutions and up grade services (Assefa, 2004).

2.5 Access to Rural Financial Service by Poor Rural Households

2.5.1 Smallholder farmers access to formal credit

Penchansky R. and Thomas W. J., (1981), stated that “to some authors "access" refers to entry into or use of the health care system, while to others it characterizes factors influencing entry or use.” Moreover, according to the free on line dictionary (undated), access can be defined as, the right to obtain or make use of or take advantage of something (as services or membership). Diagne et al., (2000) stated that a household is said to have access to a type of credit if at least one of its members has a strictly positive credit limit for that type of credit. Similarly, a household is classified as credit constrained for a type of credit if at least one of its members is constrained for that type of credit.

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 (Schmidt and Kropp, 1987). For small-scale enterprises, reliable access to short-term and small amounts of credit is more valuable, and emphasizing it may be more appropriate in credit programmes aimed at such enterprises.

Women are frequently discriminated against in formal credit markets in developing countries (Buvinic, Sebstad and Zeidenstein, 1979). The belief in discrimination against women in formal credit markets, often based upon the limited number of women borrowers in the market, is perceived as an outcome of lenders’ rejection of women’s applications for loan contracts. Over a decade ago, Buvinic, Sebstad and Zeidenstein, emphasized that there are: “.

. . two major factors which restrict women's access to formal credit more than men's. These are related to women's lack of control over economic resources and the nature of their economic activity”.

A decade later, researchers are still trying to clarify the reasons that limit women's access to formal credit. In her assessment of credit as the missing piece in micro enterprise development, McKee (1989), emphasized the gender-based credit constraints, such as limited education, inferior legal status and unpaid reproductive responsibilities exacerbated the problems women face when operating small businesses.

In another attempt to evaluate women's access to credit, Lycette and White (1989), noted that there is little direct evidence of women's limited access to credit. The authors argued that it is difficult to carefully analyze the problem because many formal financial institutions do not keep records of financial transactions by gender since women are such a small proportion of their clients. Nonetheless, based on a few case studies, the authors reported that women small-business owners, in both urban and rural areas, face problems with regard to credit that men do not experience. The perception that formal financial institutions discriminate against women does not only focus on developing countries in Africa, Asia and Latin America. This view is also pervasive in developed countries. A large literature treats the issue of bank discrimination against female business owners in Western countries, but the measurement of discrimination is largely based on subjective perceptions and lacks statistical support (Stevenson, 1986).

In Ethiopia, the poor have been highly deprived of financial services. The Commercial Bank of Ethiopia (CBE), Development Bank of Ethiopia (DBE) and other six private banks have a total of 371 branches and the ratio of population to bank branch is 203834:1. This shows that the bank branches do not cover a number of districts. But even in localities where bank branches exist, the majority of the population has no access to financial services, due to high collateral requirements (NBE 2002/03).

As stated by Wolday (2002), not only the rural poor are excluded from the formal financial system, also small and medium enterprises (SME) lack access to financial services, due to the fact that formal banks are either unwilling or unable to serve SME. These banks face high risk and transaction costs, difficulties in enforcing contracts, and penalization by the central bank (NBE) for lending to enterprises that lack traditional collateral. They also lack reliable information on borrowers, appropriate information systems and instruments for managing risk.

Empirical data in Ethiopia in the Amhara region, suggest that in 56 Woredas of the region in 2003, male-headed households have had higher access to use credit than female-headed households. The survey result shows that from all male respondents about 47.1 percent have got credit while from the total female respondents only 38.7 percent of the households have got credit. It indicates that the female-headed households, who are relatively more vulnerable segment of the society, have less access to credit (BRD, 2003).

2.5.2 Empirical studies on determinants of access to credit

A number of factors explain why certain borrowers prefer to use credit. Factors related to the participation of credit users in the credits market were therefore investigated. Such factors can be divided into borrowers characteristics, and the loan terms and conditions imposed by lenders (Kashuliza and Kydd, 1996; Zeller, 1994). Schmidt and Kropp (1987) revealed that the type of financial institution and its policy will often determine the access. Where credit duration, terms of payment, required security and the provisions of supplementary services do not fit the needs of the target group, potential borrowers will not apply for credit even where it exists and when they do, they will be denied access. In addition, Bigsten et al. (2003), and fliesig (1995), stated that in developing countries asymmetric information, high risks, lack of collateral, lender-borrower distance, small and frequent credit transactions of rural households make real costs of borrowing vary among different sources of credit.

A study by Atieno (2001), indicates that income level, distance to credit sources, past credit participation and assets owned were significant variables that explain the participation in

formal credit markets. Hussien (2007), also indicated that Farm households are more likely to prefer the informal sector to the formal sector with respect to flexibility in rescheduling loan repayments in times of unexpected income shocks. This was also supported by Padmanabhan (1996), comparing the informal credit sector from the formal stated that proximity, comfortable atmosphere, quick credit, all times access, freedom of deployment, repayment flexibility and lower transaction costs are the advantages of the informal sector have made them almost indispensable, particularly to small farmers.

According to Hossain (1988), the Grameen Bank experience shows that most of the conditions imposed by formal credit institutions like collateral requirements should not actually stand in the way of smallholders and the poor in obtaining credit. The poor can use the loans and repay if effective procedures for disbursement, supervision and repayment have been established. On the other hand, Getaneh (2005a), stated that group lending approach effectively ration out some groups of farm households (The poorest of the poor). That is co-borrowers tend to self select themselves into a group of homogenous members that effectively discriminates against some others to reduce risk of carrying the burden of repayment incase of defaults of co-borrowers.

Access to formal credit can also be affected by household characteristics. As stated by Hussien (2007), the probability of choosing the formal credit sector was positively affected by gender, educational level, household labor and farm size. He further explained that education, credit information and extension visit are more likely to increase the information base and decision making abilities of the farm households including the ability to compare pros and cons of choosing appropriate credit and production technology.

In another study, based on the data from a sample survey of 699 randomly selected peasant farmers in Bolivia, Miller and Ladman (1983), applied discriminant analysis to identify a set of socio-economic, physical and psychological factors that influence credit use among small farmers with a view to differentiate between borrowers, potential borrowers, and non-borrowers. The results of the study indicated that borrowers were characterized by higher resource base, farm size, higher level of education, large number of cattle, higher household

incomes, higher level of market integration, greater use of improved technology, larger operating costs and investments, higher risk ability, etc. Potential borrowers were characterized by further distance from markets, low level of market integration, higher transaction costs, less number of cattle, etc. Further more, non-potential borrowers were characterized by lack of interest to expand production, lower level of education, limited use of improved technology, shortage of labour and proximity to market.

Physical distance of farm households from formal lending institutions is one of the factors that influence access to formal credit. According to Hussien (2007), farm households are discouraged to borrow from credit sector if it is located farther. This is because both temporal and monetary costs of transaction, especially transportation cost, increase with lender-borrower distance which raises the effective cost of borrowing at otherwise relatively lower interest rate in the sector.

A study in Egypt by Mohieldin and Write (2000), employing a probit model analysis of the formal credit sector shows the impact of the explanatory variables on the outcome of whether a person has a loan. Both the requirements of the individual (demand side) and of the lending institution (supply side) determined whether a loan is extant. The results of the study indicated that educational level, ownership of land, total assets, and sizes of the household were significant factors.

Assefa (1989), empirically tested a set of socio-economic and other important factors influencing agricultural credit use among small farmers aimed at differentiating borrowers from non-borrowers. Using discriminant analysis, Assefa found that large farm size, high investment, adoption of improved technology were significant variables in distinguishing borrowers from non-borrowers.

Hussien (2007), in his study also found out that the use of extension package, in effect, requires adequate labor supply, thus a positive effect of household labor on the choice of formal credit for the farm input. The choice of the formal sector increases with the number of productive members of the farm households. It was also indicated that the low level of

education of the farm households may have contributed for limited use of formal sector credit by farm households. Men tend to borrow more from the formal and semiformal sources than women do. That is being a female reduces the likelihood of borrowing from the formal and semiformal credit sectors where it increases the probability of borrowing from the informal credit sources.

Hence, based on the above explanations and the author's knowledge of the credit schemes of the study area the following conceptual framework depicted the most important variables expected to influence smallholder farmers' access to formal credit in the study area.

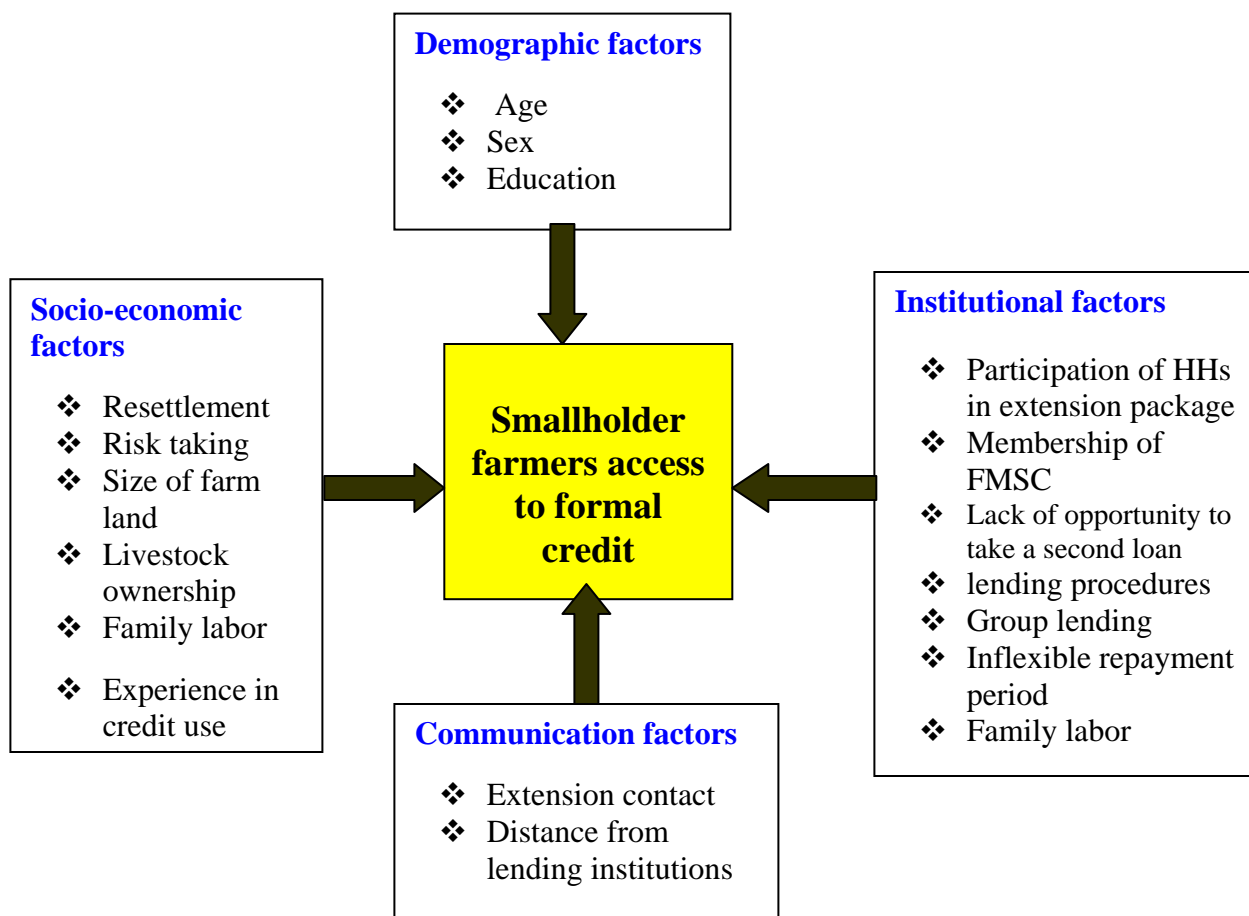


Figure 1. Conceptual framework

3. RESEARCH METHODOLOGY

This Chapter contains five sections. The first section of this chapter describes the study area. In section two data types, data sources and data collection methods are presented. Section three and four present sampling procedure and data analysis methods respectively. Section five provides definition of variables and working hypothesis.

3.1 Description of the Area

Geography and location

North Gondar Administrative Zone, in which the study woreda Metema is found, is located in the north –western part of the country (Figure 2) between 11°56' and 13°45' North latitude and 35°11' and 35°50' East longitudes, 738 km. from Addis Ababa. The boundaries of the Zone adjoin Tigray region in the North, Ageawe Zone and West Gojam Zone in the South, Waghimra Zone and South Gondar Zone in the East and the Sudan in the West. The zone comprises 21 woredas of which one is urban. The total area of the Zone is 50,970 square kms, most of it located in the North Central area of the highlands.

Metema woreda is located about 900 km Northwest of Addis Ababa and about 180 km west of Gondar town. Metema is one of the western most woredas of the Amhara Regional State. The woreda has an international boundary of more than 60 km between Ethiopia and Sudan. Metema is found North of Quarra and Alefa, West of Chilga south of Tach ArmaCheho Woreda and east of Sudan border.

The altitude of Metema ranges from as low as 550 to 1608 m above sea level while the minimum annual temperature ranges between 22°C and 28°C. Daily temperature becomes very high during the months of March to May, where it may get to as high as 43°C. Nearly all of the land in the woreda is in the lowlands except some mountain tops.

Figure 2. Location of North Gondar zone in the Amhara region

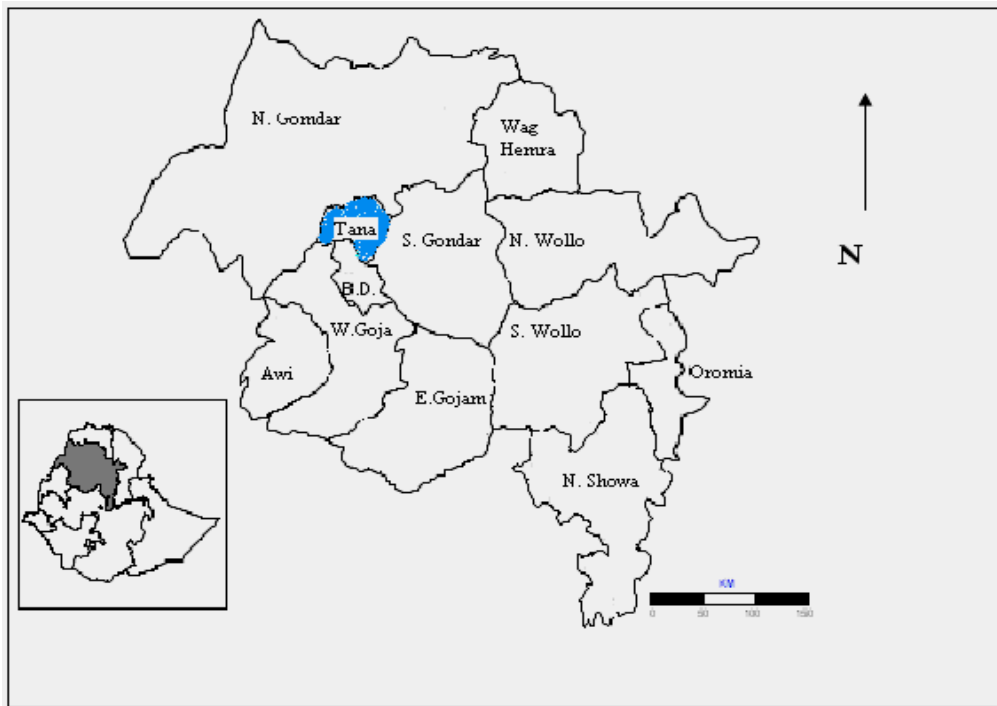


Figure 3: Location of Metema, the study woreda in North Gondar zone



The mean annual rainfall for the area ranges from about 850 to around 1100 mm. Based on this data, about 90% of the woreda receives mean annual rainfall of between 850 and 1000 mm. Metema has a unimodal rainfall. The rainy months extend from June until the end of September. However, most of the rainfall is received during the months of July and August. Rainfall during these months is erratic, combined with the poor workability of most of the soils, farm operations are also affected. The soils in the area are predominantly black and some are soils with vertic properties (IPMS, 2004).

Population

According to the data obtained from Metema woreda office of agriculture, the total population of the woreda is 78,741 of which 50.5% are males and 49.5% are females. In the woreda there are about 26847 rural agricultural household heads, out of which 63.4% and 36.6% are male and female headed households respectively.

Farming system and land use

Except under few instances, altitudinal differences in the Woreda are not significant. However, some areas in the southwest seem to have lower elevations. According to IPMS (2004), two farming systems can be delineated in the Woreda.

1. Cotton, rice/livestock farming system
2. Sesame, cotton, sorghum and livestock based farming system

1. Cotton, rice/livestock farming system

Four out of the 18 PAs belong to this farming system. They are Meka, Awlala, Genda Wuha and Kemechela. They are found northeast of the woreda. These PAs predominantly grow cotton followed by sorghum, sesame and rice in few areas. Crops grown are similar in the whole woreda. The PAs in this farming system have some different features in terms of suitability for crop production and amount of rainfall received. These PAs are relatively colder in temperature, are higher in altitude and rainfall and, soils are black and water logging is a problem. Farmers in these PAs practice slightly early planting of crops.

2. Sesame, cotton, sorghum and livestock based farming system

Fourteen PAs belong to this farming system. Sesame, cotton and sorghum are the major crops in this farming system (in order of importance). A farmer could grow any one of these crops. The environmental conditions are equally suitable for all these crops. The crop is chosen by the farmer upon consideration of the season, high or low rainfall and possible market prices. Altitude and rainfall in this farming system is lesser than the other farming system.

According to the Metema Woreda office of agriculture the total area of the woreda is about 440,085ha. Much of the woreda is under acacia dominated forest and grasslands (Table 1).

Table 1: Land use type and area coverage in Metema Woreda

No	Land use type	Area (ha.)
1	Cultivated land	103908
1.1	Smallholder	71324
1.2	Commercial farms	13908
1.3	Potential cultivable land	18676
2	Forest +grass land	312300
3	Uncultivable land	23877
4	Total area	440085

Livestock resources

Livestock production is an integral part of the production system. Production of cattle (milk, meat), goat (meat) and poultry is a common practice. Cattle are exported to the Sudan while goats are mainly used for the local market. According to the information obtained from Metema office of agriculture in 2007, livestock population amounts to cattle 141794, goats 52993, sheep 10849, donkey 12177, poultry 37895 and bee hives 23789.

Cooperatives

There are 18 peasant associations (PA) in the woreda of which 17 have multipurpose cooperatives. The remaining one PA will establish its own Cooperative in the near future. The

information from Metema woreda office of agriculture indicates, out of the total of 26,847 households in the woreda, only 5512 (4864 male and 648 female) or 20.5 % are organized under multipurpose cooperatives and there are no saving and credit cooperatives in the woreda.

Some of the functions of the cooperatives include: coordination of short term credit for purchase of inputs like DAP, Urea, seed, sprayer etc in collaboration with Agricultural Input Supply Corporation (AISCO) and Metema Cooperative Union and medium term credit for purchase of bee hives and goats for production in collaboration with DPPC and regional bureau of cooperative. The cooperatives also buy produce (sesame, cotton and sorghum) when prices are low at the time of harvest, transport to Gondar or Bahar Dar and sell at a better price, purchase and distribute inputs like cotton seed. The cooperatives also loan limited amount of money to cover expenses like weeding, oxen rental etc. Two cooperatives (Kumer and Gorogoro) provide milling service. The short term credit for input was given at 12.5% interest. They are not only serving as credit channels from other sources but also some of the cooperatives provide credit services from their own sources.

Rural finance

The Amhara Credit and Saving Institution (ACSI) is the major provider of credit and saving service for the rural population in the region. The credit repayment schedule varies from one investment type to the other. For example, credit for purchase of oxen, DAP, Urea, chemical, seed is for 8 months, trading (honey, salt, coffee, tea rooms etc) is for 12 months. The maximum loan period in ACSI is 1 year. ACSI focuses more on encouraging people to save their money and rely on their own income. Since 2002, interest for all types of credit has increased from 12.5 % to 18 %, including transport cost for ACSI staff to train farmers about the importance of credit, saving, supervision expenses, credit evaluation etc. in the respective peasant associations. The Metema sub branch has no problem with repayment of credit from farmers, because of the high demand for credit.

ACSI insists repayment of credit to be effected immediately after harvest. However, price of crops tend to be very low due to high supply during December/January and farmers are

obliged to sell their products at low price to pay their credit. The maximum amount of loan for a farmers is birr 5000. A farmer is obliged to open a saving account and deposit 5 % of the principal plus a saving of 1 % of the principal every month (IPMS, 2004).

3.2 Data Types, Data Sources and Data Collection Methods

Both qualitative and quantitative data were collected from primary and secondary data sources. Qualitative data that helped to assess smallholder farmer's perception of the strengths and weaknesses of formal financial institutions in the study area were collected through personal observation, focus group discussions, group and key informant interviews using checklists, semi structured and open ended questionnaires. The perception of farm households in the strengths and weaknesses of the formal financial institutions was assessed based on the operational modalities like, group lending, earlier saving requirement, repayment period, interest rate and loan size.

Structured questionnaire was prepared to collect quantitative data for the study. Primary data sources were the sample farm households both male and female headed from different wealth groups, and other key informants. Secondary sources were office of agriculture and Amhara credit and saving institution (ACSI) Metema sub-branch. The questionnaire was pre tested to evaluate for consistency, clarity and to avoid duplication and to estimate the time requirement during data collection.

3.3 Sample and Sampling Method

A two stage sampling method was employed. Three out of eighteen rural peasant associations in the Woreda were selected purposively based on the assumption to represent enough number of female headed HHs, different wealth groups and FMSC that gives credit service to their members in the PAs. In the second stage, the population in each PA (from the selected 3 PAs) were stratified in to different wealth groups and each group were also stratified into male and female headed farm households and a total of 130 farm households were selected randomly using probability proportional to size in the respective wealth groups and sex.

The sampling frame was identified using wealth ranking criteria set by the community. Possession of livestock, cultivated land size, number of farming oxen and type of house owned were the most important criteria used for wealth ranking in the study area. This was done, by providing a recent list of farm households of the sampled PAs to a farmer group and the group categorized each farm household to various wealth categories. Then sample farm households were taken from each category.

The group which was used to establish the relative wealth position of the households in a community, was composed of key informants in each PA (men, women, elders, and youth) based on the assumption that community members have a good sense of who among them is more or less well off. Local peoples' perceptions are crucial for getting a deeper insight of farmers' wealth status. There were different discussion and interview groups at each PA representing the wealth and sex categories of the community. Each group contains 10-12 members with different proportion of the social groups.

According to the criteria set by the wealth ranking group, farmers who have greater than 10 cows, greater than 10 ha of cultivated land size, more than two pairs of oxen and house with corrugated iron or grass house with partition and good management were considered as better farmers. Farmers who have 4 to 10 cows, 3 to 10 ha of cultivated land, 1 to 2 pairs of farming oxen and house with corrugated iron or grass house with partition and medium management were considered as medium farmers. Farmers who have 2 to 3 cows, 1 to 2 ha of cultivated land, 1 farming oxen and house with grass house with relatively medium management were considered as poor farmers. However, farmers who have less than or equal to 1 cow, less than 1 ha of cultivated land, with no farm oxen and lived with grass house without partition or poor management unable to feed the household through out the year were considered as very poor farmers.

Table 2: Sample farm households from 3 peasant associations in Metema Woreda

wealth categ- ory	Mender 6, 7															
	Meka PA				and 8 PA				Kokit PA				Total			
	Male		Female		Male		Female		Male		Female		Male		Female	
	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S
1	52	3	3	0	67	3	4	0	23	1	0	0	142	7	7	0
2	132	6	8	1	99	5	16	1	160	7	12	1	391	18	36	3
3	175	8	32	1	152	7	34	2	502	23	182	8	829	38	248	11
4	157	7	78	3	241	11	86	4	373	18	209	10	771	36	373	17
Total	516	24	121	5	559	26	140	7	1058	49	403	19	2133	99	664	31

Source: Field survey, 2007

Description- P = population S = sample

1 = Rich, 2 = Medium rich, 3 = Poor and 4 = Very poor

3.4 Methods of Data Analysis

Both qualitative and quantitative techniques were used to analyze the data. Qualitative data that were obtained by observation, focus group discussion, and group interview were organized in the field. Quantitative data were analyzed using descriptive statistics such as mean, percentage, standard deviation, tabulation, ratio and frequency distribution. In addition, the t-test and Chi-square statistics were employed to measure the mean and percentage differences between credit users and non-users. A binary logit, model which best fits the analysis for determinant factors that affects small holder farmers access to formal credit was employed.

Specification of the Logit Model

This study was intended to analyze which and how much the hypothesized regressors were related to the small holder farmers' access to formal credit. As already noted, the dependent variable is a dummy, which takes a value of zero or one depending on whether or not

smallholder farmers use formal credit. However, the independent variables were both continuous and discrete.

There are several methods to analyze the data involving binary outcomes. However, for this particular study, logit model was selected over discriminant and linear probability models. If the independent variables are normally distributed the discriminant-analysis estimator which follows ordinary least square procedures (OLS) is the true maximum likelihood estimator (MLE) and therefore asymptotically more efficient than the logit model which requires maximum-likelihood method. However, if the independent variables are not normal, the discriminant-analysis estimator is not consistent, whereas the logit MLE is consistent and therefore more robust (Maddala, 1983; Amemiya, 1981).

The linear probability model (LPM) which is expressed as a linear function of the explanatory variables is computationally simple. However, despite its computational simplicity, as endorsed by Pindyck and Rubinfeld (1981), Amemiya (1981), and Gujarati (1988), it has a serious defect in that the estimated probability values can lie outside the normal 0-1 range. Hence logit model is advantageous over LPM in that the probabilities are bound between 0 and 1. Moreover, logit best fits the non-linear relationship between the probabilities and the explanatory variables.

In the analysis of studies involving qualitative choices, usually a choice has to be made between logit and probit models. According to Amemiya (1981), the statistical similarities between logit and probit models make the choice between them difficult. The justification for using logit is its simplicity of calculation and that its probability lies between 0 and 1. Moreover, its probability approaches zero at a slower rate as the value of explanatory variable gets smaller and smaller, and the probability approaches 1 at a slower and slower rate as the value of the explanatory variable gets larger and larger (Gujarati, 1995).

Hosmer and Lemeshew (1989) pointed out that the logistic distribution (logit) has got advantage over the others in the analysis of dichotomous outcome variable in that it is

extremely flexible and easily used model from mathematical point of view and results in a meaningful interpretation. Hence, the logistic model is selected for this study.

Therefore, the cumulative logistic probability model is econometrically specified as follows:

$$P_i = F(Z_i) = F\left(\alpha + \sum \beta_i X_i\right) = \frac{1}{1 + e^{-Z_i}} \dots\dots\dots(1)$$

Where, P_i is the probability that an individual will use formal credit or does not use given X_i ;
 e denotes the base of natural logarithms, which is approximately equal to 2.718;
 X_i represents the i^{th} explanatory variables; and
 α and β_i are parameters to be estimated

Hosmer and Lemeshew (1989) pointed out that the logit model could be written in terms of the odds and log of odds, which enables one to understand the interpretation of the coefficients. The odds ratio implies the ratio of the probability (P_i) that an individual would choose an alternative to the probability ($1-P_i$) that he/she would not choose it.

$$(1 - P_i) = \frac{1}{1 + e^{Z_i}} \dots\dots\dots(2)$$

Therefore,

$$\left(\frac{P_i}{1 - P_i}\right) = \left(\frac{1 + e^{Z_i}}{1 + e^{-Z_i}}\right) = e^{Z_i} \dots\dots\dots(3)$$

Or,

Taking the natural logarithm of equation (4)

$$Z_i = \text{Ln}\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_m X_m \dots\dots\dots(5)$$

If the disturbance term (u_i) is taken into account, the logit model becomes

$$Z_i = \alpha + \sum_{i=1}^m \beta_i X_i + u_i \dots\dots\dots(6)$$

3.5 Definition of Variables and Working Hypothesis

3.5.1 Dependant variable

The dependent variable for the logit analysis is of dichotomous nature representing small holder farmer's access to formal credit. This is to distinguish or discriminate between those users or non-users of formal credit in the study area. Y- Household uses credit from formal sources during the year (FORCTAKE): This is the dependent variable. It takes value of "1" for users "0" for non-users to formal credit.

3.5.2. Explanatory variables of the study

Review of literatures on factors influencing smallholder farmers' access to formal credit, past research findings and the author's knowledge of the credit schemes of the study area were used to establish working hypotheses of this study. In other words, among a number of factors, which have been related to smallholder farmers' access to formal credit, in this study, the following demographic, socio-economic, communication and institutional factors were hypothesized to explain the dependent variable.

1. **Age of the farm household head (AGE):** It is a continuous variable, defined as the farm household heads age at the time of interview measured in years. Those farmers having a higher age due to life experience will have much better association with cooperatives and other formal credit institutions, and it was hypothesized that farmers with higher age may have more access to use credit from the formal sources.
2. **Sex of respondent (SEX):** this is a dummy variable that assumes a value of "1" if the head of the household is male and "0" otherwise. According to (Buvinic, Sebstad and Zeidenstein, 1979) "there are two major factors which restrict women's access to formal credit more than men's. These are related to women's lack of control over economic resources and the nature of their economic activity". With this background including the existing gender differences; male headed households have mobility,

participate in different meetings and have more exposure to information; therefore it was hypothesized that male headed households have more access to use formal credit.

3. **Literacy level (EDLVL):** It is categorized in to illiterate and able to read and write or literate, it is a dummy variable. Farmers who can read and write are expected to have more exposure to the external environment and accumulate knowledge. They have the ability to analyze costs and benefits. The more educated the household head the more credit he will use for consumption purposes. According to Musebe et al, (1993), as the household gets more formal education, the probability of obtaining credit increases. Therefore, it was expected that those farmers who can read and write have better credit requirement that leads to access to use formal credit sources.
4. **Family labor (FAMILABR):** This refers to the total number of family members of the household who have the potential to work on the farm which was measured in man equivalent. The larger the number of family labor, the more the labor force available for production purpose. The more the labor force available, lower is the demand for hired labor, this means no or low cost for hired labor. If demand for hired labor decreases due to availability of family labor the need for credit decreases. Therefore, family labor was hypothesized to have negative impact on access to credit.
5. **Extension contact (EXECON):** This refers to the number of contacts with extension agents that the respondent made in the month. Farmers who have a frequent contact with extension agents are expected to have more information that will influence farm household's demand for credit from the formal sources. Therefore, it was hypothesized that this variable positively influences farmer's access to use formal credit.
6. **Participation of households in extension package program (PARTIEXT):** This is a dummy variable which takes a value "1" and "0" for participation and non-participation in extension package program respectively. If a household participates in extension package program, then it is expected to have credit for the purchase of farm

inputs or technologies. Therefore, it was expected that, this variable positively influences farmer's access to use credit from the formal sources.

7. **Membership of farmer's multipurpose cooperatives (MEMCOOP):** This is a dummy variable which takes a value "1" for membership and "0" otherwise. Some of the households of the PAs are members of the multipurpose service cooperatives and they get different services including credit (according to the credit arrangements of the Amhara regional government, agricultural input credit is channeled through cooperatives and therefore cooperatives have to lend to both members and non-members. But for other agricultural activities credit is provided for members only). Therefore, it was hypothesized that farmers who are members of cooperatives have more access to credit from cooperative source.
8. **Resettled farm households (RESFHH):** These are farmers who were living in high land parts of the region and who were severely suffering from food insecurity. Now they are settled in the lowland parts of the region and at the beginning of their settlement farm implements and other farm inputs are provided on credit basis. This is a dummy variable which takes a value "1" for resettlers and "0" otherwise. Therefore, it was expected that new resettlers have better access to use formal credit.
9. **Experience in credit use from the formal sources (EXCRIFS):** This refers to the number of years the household head uses credit from formal financial institutions. A farmer having more experience in formal credit use will have higher tendency towards using the formal credit sources and vice versa. Hence, this variable is assumed to have positive influence on the dependent variable.
10. **Farm size in hectare (TOCULASI):-** It is the total land size cultivated (it is the sum of owned cultivated land, rented-in land and land secured through sharecropping arrangements) by the household. It is a continuous variable. The larger the cultivated land size the more the labor required that demands additional capital that might be obtained through credit. The main hypothesis was that the farmer who cultivates larger size of

land can utilize more capital and will demand for credit and therefore he/she will be more accessed to credit from the formal sources.

11. **Total livestock ownership (NLSTLU):-** This refers to the total number of animals possessed by the household measured in tropical livestock unit (TLU). Livestock is considered as another asset which is liquid and a security against crop failure. As the total number of animals in the household increases, the household would be less likely to go for credit. This can be attributed to increase wealth and income base of farm households which makes more money available in the households that minimizes demand for credit. Hence this variable was assumed to have negative influence on the dependent variable.
12. **Attitudes towards Risk (RITAKE):** The other factor, which influences the household's access to formal credit, is their attitude towards risk. Many farmers, as can be expected, are very risk-averse that even when credit is available, they do not like to venture into activities. This is due to risks of repaying loans that come from loss of crops due to seasonal changes, pest and insect damage. It will be measured based on the farmer's positive or negative perception. This is a dummy variable which takes "1" if they respond as they don't fear risk to take loans and "0" otherwise. Therefore, it was expected that farmers who are risk averse will not demand credit and it negatively affects access to use credit from the formal credit institutions.
13. **Lack of opportunity to take a second loan (LAOPLOAN):** Loans taken by farmers are expected to be repaid based on the agreement made. According to the rule of the region failure by farmers to repay their loans in time or to repay at all will forbid them from getting further loans. This is a dummy variable which takes a value "1" for non-defaulters and "0" otherwise. Therefore it was expected that farmers who did not repay their loans will not have access to additional credit from the formal credit institutions.

14. **Farmers perception of group lending (COLLATGF):** smallholder farmers are expected to form a group (that can serve as collateral) to take credit from the formal credit sources. But farmers perceived that group lending is difficult to access credit from these sources. It is a dummy variable which takes a value “1” for those who perceived group formation was a constraint and “0” otherwise. Therefore, it was expected that farmers who are unable to form a group or deprived of membership by the group were not able to use formal credit.
15. **Physical distance of farmers from lending institutions (DINST):** Farmers near the lending institutions have a location advantage and can contact the lender easily and have more access to information than those who live more distant locations. Therefore, location advantage was expected to increase access to use credit from the formal institutions.
16. **Farmers’ perception of Loan repayment period (SHOREPIN):** Formal credit institutions have rules and regulations that limits the time at which the borrower should repay the loan. If farmers fail to repay on time they will be sent to the court or their property may be confiscated. Due to this reason farmers fear taking loans from formal credit sources. This variable represents the borrower’s perception of how the loan repayment periods and time discourages farmers from participating in credit market. This is a dummy variable which takes a value “1” for those who perceive it as a constraint and “0” otherwise. And it was hypothesized that, this variable negatively influences the dependant variable.
17. **Farmers’ perception of Lending procedures (LEPROC):** To get formal loans farmers are expected to pass through different processes, which is time-taking, cumbersome and some times difficult to understand. Rather they prefer to take from the informal credit institutions for the sake of ease even if it charges higher interest rates. Schmidt and Kropp (1987) also reported that 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 complicated

application procedures and restrictions. This variable represents the borrower's perception of difficulty of the lending procedure. It is a dummy variable which takes a value "1" for those who perceive it as a constraint and "0" otherwise. Therefore, it was expected that, this variable negatively affects smallholder farmer's access to credit from the formal credit sources.

4. RESULTS AND DISCUSSION

This chapter presents and discusses the results of the analysis that has been conducted to address specific objectives of the research. The chapter is divided into five major sections. The first section of this chapter presents characteristics of sample farm households. Formal and informal credit institutions in the study area are presented in the second section. In the third section, smallholder farmer's perceptions of the strengths and weaknesses of formal financial institution are analyzed. The status of women and different wealth groups' access to formal and informal credit is analyzed in the fourth section. Finally, the fifth section presents the econometric analysis that identifies the most important factors that affect smallholder farmers' access to formal credit.

4.1. Characteristics of Sample Farm Households

Rural household's access to formal credit services is influenced by demographic, economic and social characteristics of households. This section report is on the background and the difference between user and non-user of formal credit services on variables pertinent to the concern of the thesis. Access to formal credit by smallholder farmers to the context of this study is measured in terms of users and non-users.

4.1.1 Demographic characteristics of sample households

Table 3 shows the family size of the sample respondents. Accordingly, the average family size of the sample respondents was found to be 5 persons. The largest family size was 12 and the smallest was 1. The result from the table shows that from the total sample households about 68.9 percent of the credit non-users and 55.4 per cent of the users had the family size that ranges from 1-5.

Table 3: Family size of the respondents by credit users group

Family Size	Non-Users		Credit users		Total	
	N	%	N	%	N	%
1-5	51	68.9	31	55.4	82	63.1
6-8	20	27.0	21	37.5	41	31.5
>8	3	4.1	4	7.1	7	5.4
Total	74	100	56	100	130	100

Source: Survey results (2007)

The average age of the household heads was 40.21 years, with minimum and maximum ages of 22 and 80 years respectively. The average age of formal credit users and non-users was 42.04 and 38.82 years respectively. Male and female headed households had similar average age and it was almost equal to the total average (Table 4). With regard to sex the sample was composed of 76.2% male headed households and 23.8% female headed households. 14.3 percent of the users and 31.1 percent of the non-users were female headed households. The number of credit user female headed households is lower than the credit users as compared to male. The implication is that male headed households had more access to credit from the formal financial sources.

About 48.5 per cent of the sample households were literate, while 51.5 per cent of the sample households were illiterate. Of the total sample respondents 67.8 per cent of credit non-users and 30.4 per cent of users were illiterate (Table 4). This may probably mean that literate farmers have more exposure to the external environment and information which helps them easily associate to credit sources. This percentage difference was also true for male and female headed households. According to the survey result, 77.4 per cent and 43.4 per cent of female and male headed sample households were illiterate respectively (Table 4). The percentage difference between male and female household heads in terms of literacy level may mean that female headed households have less access to use credit due to the fact that their low level of education.

Table 4: Demographic characteristics of sample household heads

Characteristics	Non users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)	
	N	%	N	%	N	%	N	%	N	%
Sex										
male	51	68.9	48	85.7					99	76.2
Female	23	31.1	8	14.3					31	23.8
Literacy level										
Illiterate	50	67.8	17	30.4	24	77.4	43	43.4	67	51.5
Literate	24	32.2	39	69.6	7	22.6	56	56.6	63	48.5
Age Mean	38.82		42.04		40.42		40.14		40.01	
St.dev	10.01		10.33		10.79		10.10		10.23	

Source: Computed from the field survey data, 2007

4.1.2 Socio-economic and institutional characteristics of the sample households

The results of the survey indicated that only 48.5 per cent of the respondents had extension contact, while 51.5 per cent did not have any contact with extension agents. An average number of extension contact days for credit user and non-user sample households were 3.43 and 0.81 days per three months or 13.72 and 3.24 days per annum respectively, and also for female and male headed households was 0.9 and 2.26 per three months or 3.6 and 9.04 days per annum (Table 5). On the other hand, from the sampled respondents only 35.5% of the female headed households and 52.5% of male headed households were provided extension services from development agents.

Experience in credit use from the formal sources varied among the sample households. The number of sample households who had experience with using credit from formal financial institutions was only 30.8 percent. The average years of credit experience of sample households from the formal financial institutions in the study area were 1.05 years and the maximum and minimum experience were 8 years and 0 year respectively. Credit users from the formal sources have an average experience of 2.29 years whereas the non-users have an average year experience of 0.11 year (Table 5). In addition female headed households

participated on an average for 0.45 year as compared to male headed households who participated on an average for 1.23 years (Table 5). This low level experience of credit use by female headed households may probably limit them from formal credit access as compared to male headed households who had more access to formal credit.

The distance in hours that the potential beneficiaries traveled on foot for accessing credit from formal financial institutions was assessed. The average distance traveled by the sample farm households to their nearest credit institution was about 1:49 hours. On an average, non-users traveled about 1:57 hours while users traveled on average 1:38 hours. On the other hand, the mean distance traveled by female headed households was lower than the total average as well as the male headed households (Table 5). This implies that distance was not a limiting factor especially to female HHs to access credit from the formal sources. Because according to this result, the less credit accessed female farmers are living nearby formal credit lending institutions.

Table 5: Socio-economic and institutional characteristics of households

Characteristics	Non-users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)	
	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.
Extension contact days	0.81	1.28	3.43	2.94	0.90	1.51	2.26	2.67	1.94	2.51
Experience in Credit use in years	0.11	0.48	2.29	2.21	0.45	1.03	1.23	2.0	1.05	1.84
Distance from credit organization in hours	1.57	1.39	1.38	1.58	1.35	1.23	1.53	1.54	1.49	1.47

Source: Computed from the field survey data, 2007

From the total respondents 38.5% were members of farmers' multipurpose cooperatives. Among them 62.5% were credit users while only 20.3% were not credit users from the formal sources. On the other hand it is obvious that in cooperative's principle, male and female headed households have equal right to be a member of the farmers' multipurpose

cooperatives. However, due to the existing gender differences only 22.6 per cent of female headed households were members of the cooperatives (Table 6). This may probably mean that low status of female headed households in the membership of farmer's multipurpose cooperatives may affect their access to formal credit sources.

The number of respondents who participated in the extension package program was only 11.5 per cent. As the figures in Table 6 indicated, out of the total respondents, 23.2 per cent from the credit users and 2.7 per cent from the non-users have participated in agricultural extension package program. This was because farmers in the study area uses extensive farming system, fertilizer and other agricultural technologies are not widely used.

In addition the participation of female and male headed households in the extension package program during the surveyed year was 3.2 per cent and 14.1 per cent respectively (Table 6). This difference may mean that the low level participation in the extension package program may limit female headed households as compared to male who have relatively better participation in the program.

Table 6: Other socio-economic and institutional characteristics of HHs (discrete variables)

Characteristics	Non-users (N=74)		users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)		
	N	%	N	%	N	%	N	%	N	%	
	Participation in extension package										
Yes	2	2.7	13	23.2	1	3.2	14	14.1	15	11.5	
No	72	97.3	43	76.8	30	96.8	85	85.9	115	88.5	
Membership of cooperatives											
Yes	15	20.30	35	62.50	7	22.6	43	43.4	50	38.50	
No	59	79.70	21	37.50	24	77.4	56	56.6	80	61.50	

Source: Computed from the field survey data, 2007

Livestock ownership

Next to land, livestock is the most important asset for rural households in the study area. Farmers in the study area undertake both crop and livestock production activities. Though livestock holding size varied among the sample farmers, 88.5 per cent of the total respondents owned livestock. Based on *strock et al.* (1991) the livestock population number was converted into tropical livestock unit (TLU), to facilitate comparison between the two groups. The mean livestock holding of the respondent farm households was 4.44 TLU. The minimum number of livestock maintained was none and the maximum was 45.71 TLU. Credit users possessed relatively more livestock unit than non-user households (Table 7).

On the other hand, female headed households in the study area owned smaller number of livestock (on average 1.68 TLU) as compared to male headed households (on average 6.03 TLU). The implication is that female headed households with no ownership or with smaller size of livestock reflects lack of ownership of an important asset, which is expected to affect access to agricultural credit.

Table 7: Size of holding of sample respondents

Livestock type in TLU	Non-users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=31)		Total (N=130)	
	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.
Cattle	3.54	6.94	5.26	6.56	1.35	2.05	5.2	1.35	3.74	6.81
Donkey	0.25	0.39	0.5	0.44	0.11	0.31	0.43	0.43	0.35	0.43
Goats	0.23	0.38	0.3	0.56	0.15	0.27	0.30	0.50	0.26	0.46
Sheep	0.01	0.06	0.05	0.21	0.02	0.09	0.03	0.16	0.03	0.14
Chicken	0.05	0.06	0.08	0.11	0.05	0.06	0.06	0.09	0.06	0.08
Total Livestock in TLU	4.08	7.24	4.93	4.48	1.68	2.35	6.03	7.82	4.44	6.23

Source: Computed from the field survey data, 2007

It is evident from the table that respondents in the area keep more cattle, donkey and goats than other categories of livestock. Oxen are the most important source of draught power for cultivation of land in the area.

Land holding

Land is a vital resource to farmers. In the study area, as shown by the study result there was major difference in the mean land holding of formal credit users and non-user households. The average size of owned cultivated land was about 2.7 ha, with 0.25 ha being the minimum and 22.5 ha being the maximum land holding. Credit users cultivated, on average, a larger area of land than non-users. Moreover, female headed households owned an average of 1.05 ha of cultivated land, while male headed households owned on an average 3.21 ha (Table 8).

Table 8: Land holding and cropping pattern of the sample households

Characteristics	Non users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)	
	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.	Mean	St.de.
Total cultivated										
land (ha)	1.46	1.48	4.33	3.48	1.05	2.03	3.21	2.96	2.70	2.91
Sesame	0.65	1.04	2.08	2.82					1.26	2.12
Sorghum	0.68	0.91	1.5	1.16					1.03	1.1
Cotton	0.11	0.3	0.6	0.8					0.32	0.62
Teff	0.02	0.16	0.09	0.31					0.05	0.23
Finger millet	0.03	0.11	0.03	0.18					0.03	0.14

Source: Computed from the field survey data

The major crops grown by respondent farmers in order of area coverage were sesame, sorghum, and cotton. Sesame is the most widely grown cash crop in the area followed by sorghum in which the largest proportion used for consumption purposes.

Adequacy of family labor

Following conversion factors suggested by strock *et al.* (1991), family labor working on the farm was converted into man equivalent. The survey results showed that the average family labor of all respondents was 2.22 man equivalents. The average family labor of the credit users and non-users of sample respondents in man equivalent were different (Table 9).

Besides, the average family labor of female and male headed households was 1.77 and 2.37 man equivalent respectively.

Respondent's perceptions of labor availability during peak cropping season were assessed. The survey result indicated that about 22.3% and 77.7% of the sample households thought as they had adequate and inadequate labor for agricultural activities, respectively. About 85.7 per cent of users and 71.6 per cent of the non-users had inadequate labor supply for agriculture (Table 9). Moreover, more than three fourths of the female and male headed households were also thought as they were with inadequate labor supply. These figures clearly indicate that labor is in short supply to the majority of the farmers in the study area. Labor shortage increases the demand for hired labor, which increases operating expenses to farmers that also increases the need for credit.

Table 9: Family labour and the view of respondents about seasonal labour availability

Characteristics	Non-users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)	
	N	%	N	%	N	%	N	%	N	%
Labor availability										
Inadequate	53	71.6	48	85.7	25	80.6	76	76.8	101	77.7
adequate	21	28.4	8	14.3	6	19.4	23	23.2	29	22.3
Dependency ratio										
mean	0.45		0.41		0.40		0.44		0.43	
St.dev	0.28		0.21		0.33		0.23		0.25	
Family labor in man equivalent										
mean	2.18		2.28		1.77		2.37		2.22	
St.dev	1.40		0.86		8.60		1.26		1.20	

Source: Computed from the field survey data, 2007

The ratio of the dependent family members to economically active members was 0.43 with minimum value of zero (no dependent member) to the maximum of 1. In this study,

dependent family members are defined to include children under 10, disabled persons and adults older than 64 years.

Table 10: Sources of labour of respondents by labour source for different farming activities

Major activities by crop type	Family labor only		Friends and relatives		Support from PA		Labor exchange		family and hired labor		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
	Ploughing	59	64.1	3	3.3	1	1.1	1	1.1	28	30.4	92
Weeding	17	18.5	2	2.2	1	1.1	6	6.5	66	71.7	92	100
Harvesting and threshing	33	42.9	2	2.6			7	9.1	35	45.5	77	100

Source: Survey results, 2007

Note: 15 respondents did not harvest sesame and cotton crops due to excess rain affecting their crops in the surveyed year.

The survey result in Table 10 revealed that sample households used family labor to plough their land as a major source. And also family labor and hired labor simultaneously contributed less than family labor alone. However, the major sources for weeding, harvesting and threshing of the identified major crops were family and hired labor together. Therefore, hired labor was important to offset seasonal labor shortage facing the majority of the farmers. The implication is that hired labor requires additional capital, which increases demand for credit.

4.1.3 Farm household's opinion on the risk of borrowing and lending procedures of formal financial institutions

The risk of borrowing arises from the natural disaster facing the farmers and the inflexible repayment period of formal financial institutions. Risks associated with seasonal changes like excess rain and drought, pest and insect damage influence farmers' attitude towards credit use that may be difficult to repay their debt due to the changes that may occur. From the total sample households, 49.2 per cent did not want to take risk by borrowing from formal financial

sources. Among the credit user and non-user groups 26.8 per cent of the users and 66.2 per cent of the non-users also thought that it is risky to borrow from the formal credit sources and they fear to take credit due to risk problems (Table 11).

The survey result also indicated that male and female headed households have different views on the risk of borrowing from formal financial institutions. Though, farmers have similar demand for credit they have different thoughts towards borrowing from this sources. 67.7% of female headed households and 43.4% of male headed households thought taking loan from formal financial institutions is risky (Table 11) for repayment. The result indicates that the majority of the female headed households fear the risk of repayment, while the majority of the male headed households perceived differently. This perception difference might be one of the problems for lower status of women in the credit market.

Table 11: Farm household’s opinion on the risk of borrowing and lending procedures of formal financial institutions

Characteristics	Non-users (N=74)		Credit users (N=56)		Female HH (N=31)		Male HH (N=99)		Total (N=130)	
	N	%	N	%	N	%	N	%	N	%
Lending procedure										
Yes	17	23.0	11	19.6	3	9.7	25	25.3	28	21.5
No	57	77.0	45	80.4	28	90.3	74	74.7	102	78.5
Attitude towards Risk										
Yes	49	66.2	15	26.8	21	67.7	43	43.4	64	49.2
No	25	33.8	41	73.2	10	32.3	56	56.6	66	50.8

Source: Computed from the field survey data, 2007

To get loans in microfinance institutions, though it is minimized farmers are expected to pass through different processes. The major processes are applying for credit, recruited by the PA screening committee and then group formation. From the total respondents 78.5 per cent responded that there was no problem in the lending procedures of MFIs. 77.0 per cent of the

non-users and 88.4 per cent of the users responded that the lending procedure was not a constraint to access credit (Table 11). Mekonnen (2004), reported that given the high level illiteracy among clients, maximum effort in ACSI was made to avoid cumbersome appraisal process that require sophisticated project proposal and other written applications that conventional banks require.

On the other hand, from the total respondents 90.3 per cent and 74.7 per cent of female and male headed households thought that the lending procedure was not difficult and constraint to access credit (Table 11). Hence, the result shows that the lending procedure was less difficult to female headed households as compared to male; this may be because MFIs facilitates the process to women to participate in the credit market.

4.2 Formal and Informal Credit Sources of Smallholder Farmers in the Study Area

In the study area (Metema) there are government and private banks, MFIs including ACSI and farmers' multipurpose service cooperatives. There are also a number of financial institutions outside these formal credit institutions like relatives and friends, private moneylenders, neighbors, Iddirs and Equubs. In the last years, in the study area smallholder farmers were accessing credit from MFIs and non-formal credit sources.

4.2.1 Formal sources of credit and operational modalities of the financial institutions in the study area

Among the formal financial institutions, ACSI (which is a microfinance institution serving in the Amhara region) and farmers' multipurpose cooperatives (serving basically member farmers and also non-member farmers to provide credit for agricultural technologies) were providing credit services for smallholder farmers in the study area.

According to the information obtained from Metema woreda ACSI sub-branch office; in the woreda, ACSI has 4323 (16.1%) credit clients, among whom 47.5% were women. On the other hand, cooperative is one of farmers' organizations that play an important role in the

farming community. In the study area according to Metema woreda OoA, cooperatives play a major role in market stabilization through purchasing farmers product after harvest and selling it in off-season at reasonable prices. They also provide services like agricultural input credit for both members and non-members and other agricultural loans to their members. Therefore, this section would make clear the operational modalities of these MFIs in the study area.

Group lending /guarantor in MFIs

According to the information from Metema woreda ACSI sub-branch office, property collateral was not used directly in the disbursement of institutional loans to smallholder farmers in the woreda. Since the poor shall not be required to avail any collateral, ACSI follows the group guarantee and lending model. ACSI is the only microfinance organization in Metema woreda which uses solidarity groups. Therefore, it is ACSI which requires group formation by potential borrowers as a precondition to access productive loans. The process is self selection based group formation. In group lending, group members know each other well; they have the possibilities to know if an applicant lacks the ability to put borrowed funds to good use. Potential borrowers are recruited by the PA credit and saving committee.

On the other hand, as indicated by the woreda OoA, most FMSC in Metema are mainly engaged in their traditional activities of disbursement of seasonal agricultural input loans. However, there are some cooperatives which accumulate capital and are able to deliver agricultural loans to members. These loans are short term, small in size and are expected to be paid back in the following harvest season. Service cooperatives use membership of cooperative as a guarantee to advance loans to farm households. This by itself is not sufficient in the study area but also guarantor is required to provide productive loans to farmers.

Saving requirement

Broadly two kinds of saving systems by smallholder farmers are observed in the area, traditional saving and saving in MFI. Traditional saving (forming livestock for wealth accumulation and security against emergencies) is the most widely used way of saving.

There are also two kinds of saving in ACSI, Voluntary and compulsory savings. In voluntary saving clients receive a record book where their deposits and withdrawals entered. No obligation to save like compulsory saving. They can save the amount they have and they want and they can also withdraw at any time at request. In compulsory savings which is prior saving required from borrowers, in which loan clients have obligatory savings (in addition to their voluntary individual saving) to which all members contribute regularly through out their membership with the institution. There is no saving and credit cooperatives in the woreda, and farmers multipurpose service cooperatives did not give saving service to their members.

Repayment period

The maximum repayment period or the loan duration from ACSI has for long been limited to one year as stated by the woreda ACSI sub-branch office. Moreover, the repayment time for agricultural loans was immediately after crops are harvested. In ACSI borrowers in the group (group members) are expected to repay their loans at the same time.

In the study area, the repayment period of service cooperatives for loans delivered from their own source is decided by member farmers and the maximum loan term is limited to one year. Hence, the repayment time for loans from their own sources can vary according to the decision made by the cooperative members, in most cases it is expected immediately after crops are harvested but it is flexible. The repayment time of agricultural input loans that are channeled through cooperatives and ACSI are decided uniformly by the regional agricultural input and credit coordinating committee. This is also immediately after crops are harvested.

Interest rate

According to Getaneh (2005b), a minimum interest rate is set that can be paid to depositors. The relevant directive in this regard (Directive No. MFI/13/2002) reads: “the minimum interest rate that shall be paid per annum by microfinancing institutions on saving and time deposits shall be 3%”. ACSI charges an interest rate up to 18 per cent from loan clients.

Moreover, according to the woreda OoA, there are two types of interest rates charged by the cooperatives in the study area. For agricultural input loans channeled through them, the

interest rate is 12.5%, which is decided by the regional agricultural input and credit coordinating committee. For other agricultural loans delivered by the cooperatives from their own sources the interest rate charged from borrowers is decided by the cooperative with the participation of member farmers. However, the interest rate had been changing from time to time, and the interest rate among cooperatives was also different based on the decision made by members. According to the agreement made between borrowers and the cooperative both the principal as well as the interest was repaid in-kind. The crop type to be repaid was also included in the agreement. In most cases it was sesame which is the major cash crop in the study area.

It was observed that in the selected PAs the interest paid for example from Kokit service cooperative was 20 kg of sesame crop for a loan amounting Br. 500.00 and also in Mender 7 service cooperative it was 10 kg of sesame for Br. 200.00 loan amount for six months loan period. Based on the current price at the repayment time the rate of interest in monetary terms in the surveyed year was found to be 44 percent.

Loan size

According to Mekonnen (2004), the very poor would have no business experience. The best practice to introduce the very poor to the business world is to start with small, but surely progressive loan size between loan cycles. He also reported that the maximum first time loan a poor client is entitled to be Br. 750, but revisions are being made to accommodate new loan products.

In the farmers multipurpose service cooperatives, the loan amount delivered to members from their own sources varied among cooperatives according to the amount of capital they had. For example among the surveyed PAs, Kokit's service cooperative (the largest in the woreda) provides a maximum loan amount of Br. 500.00 and Mender 7 Br. 200.00 only. However, loan from other sources can go beyond this limit. It was observed from the surveyed PAs that the maximum loan size delivered from GO and NGO sources (for fattening purpose) were Br. 5000.00.

4.2.2 Informal credit sources of smallholder farmers in the study area

According to G/Yohannes (2000), informal lending is by far the most important source of finance to the rural and urban population. The informal lenders 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 can not be met by the formal financial institutions. Nevertheless, the informal sector is not without limitations. Despite its flexibility, rapidity and transparency of procedures, the interest rates charged on these loans are often exorbitant.

In the study area sources of informal credit were identified. These sources in their order of importance include; private moneylenders, friends and relatives, neighbors, *Equbs* and *Iddirs*.

The percentage share of borrowing money varied from institution to institution and the purpose of borrowing too. For instance, households who have borrowed from non-formal credit sources used almost equal proportion for production (51.6%) and consumption (48.4%) purposes respectively. It was found that almost all of the households who borrowed from relatives spend for consumption purposes. However, about 29.5% of the households who have borrowed money from private moneylenders used it for household consumption and the remaining 70.5% used it for production purpose (Table 12).

Table 12: Purpose of the loan obtained from informal credit sources

purpose	Private moneylenders		Friends and Relatives		others		Total	
	N. of clients	%	N. of clients	%	N. of clients	%	N. of clients	%
Hiring labor	23	52.3					23	38.3
Renting oxen	8	18.2					8	13.3
Purchase of food	9	20.4	9	90.0	5	100.0	23	40.0
Others	4	9.1	1	10.0			5	8.4
Total	44	100.0	10	100.0	5	100.0	59	100.0

Source: Survey results, 2007

Private moneylenders

It is the major source of informal credit in the study area (Table 12). The source of private moneylenders consists of those farmers who are better-off, tradesmen, and rarely government employees. The transactions are; private moneylenders provide cash advance before the crop is harvested and borrowers are then expected to repay in cash or most of the time in kind based on previous commitment made with the lender. A very common example is in sesame grower farmers; where the anticipated value during the harvest is advanced and collection is in kind, and the majorities who make the advances are often sesame traders. The lender may or may not sign a loan contract and loans are typically short term, characterized with higher interest rate (equal or greater than 100%). It was identified that sometimes there is a risk of default in case of crop failure. The type of loan found from private moneylenders is locally called “*Shell*”.

Friends and relatives

According to G/Yohannes (2000), in Ethiopia, where there is a long tradition of mutual assistance, individuals who need funds call on friends and relatives for help. Acceptance of such help, however, obligates the borrower to reciprocate by providing non-financial services or by supplying funds in turn when the lender needs to borrow. Lending between friends and relatives often carries low interest or no explicit interest charge. And oral promise, confidence, trust and mutuality are frequently all that is needed as collateral or security.

In the study area friends and relatives are the second most important sources of informal credit (Table 12). The credit from friends and relatives was used for different purposes, like production, meeting consumption demands and social obligations. It is a custom of the people in the area to assist each other to smooth seasonal cash flows. Credit from this source is not tied with any collateral requirements and no interest is charged from this source in the area.

Neighbors

Like relatives and friends, neighbors are the other source of informal credit in the study area. This type of credit depends largely on mutual trust and its other characteristics are similar to friends and relatives.

The “*Idir*”

It is a type of traditional organization in which a small fraction of money is collected from members whose aim is to provide mutual aid and financial support under emergency situation (Tesfaye, 1993). Though it is not common in the farming community, there are small numbers of *Idirs* in the study area. It rarely provides cash in credit basis for members.

The “*Equb*”

Equb (rotating savings) is a form of social organization in which members come together for the purpose of savings in cash or in kind. The normal practice is that members contribute money or material on a monthly or a weekly basis, and lots are drawn every month so that the one who wins the chance gets the total sum (Tesfaye, 1993). *Equb* is popular in urban areas and rarely found rural PAs of the woreda. There is no interest charged from this source.

4.3 Smallholder Farmers Perceptions of the Strengths and Weaknesses of Formal Financial Institutions

This section deals with farmers’ perception of the strengths and weaknesses of formal financial institutions in relation to their lending methodologies discussed in the previous section. Information collected through group interview and focus groups discussions were presented to capture the assessment of the community. In this section the researcher tries to explain the strengths and weaknesses of formal financial institutions from the point of view of different wealth and sex groups in the study area. The discussion groups were organized based on their wealth and sex category (indicated in the methodology part of this thesis).

Farmers’ view of group borrowing/guarantor by wealth and sex category

The farmers under different wealth categories and also male and female in their group have common understanding about group borrowing. According to farmers understanding, in group borrowing, group members are jointly accountable for the repayment in the event of default and therefore, the whole group provides monitoring and enforcement mechanism as group members put pressure on borrowing members to repay their loans. In the event of a group

member being incapable of repaying the loan the group pays the loan on behalf of a defaulting member. Farmers recognized that if credit is properly used it is productive and there is no way of defaulting. Farmers also acknowledge that group borrowing solves the problem of collateral requirement; and it has played an important role in the past years in controlling misuse of credit by farmers. However, there are different views of group borrowing by wealth and sex groups in the study area.

From survey result, respondent farmers indicated their perception of group borrowing in the study area. Different wealth and sex groups perceived group borrowing differently, whether it is a constraint to access credit from MFI. The majority of the very poor and female headed respondent farmers reported that group borrowing was a constraint to access credit from MFI who required group formation as a precondition to access credit (Table 13).

The difference between wealth groups in perceiving group borrowing was statistically significant at 10% level. This may be due to the fact that the wealthier farmers do not want the poor in their group not to take risk in case of default. The difference between the two sex groups was also significant at 1% probability level.

Table 13: Farm household’s opinion on the constraints and difficulties of group borrowing

Wealth status/sex	Yes		No		X ² -value	Total	
	N	Per cent	N	Per cent		N	Per cent
Rich	3	42.9	4	57.1	7.092*	7	5.4
Medium rich	13	61.9	8	38.1		21	16.1
Poor	29	58.0	21	42.0		50	38.5
Very poor	41	78.8	11	21.2		52	40.0
Male	59	59.6	40	40.4	7.974***	99	76.2
Female	27	87.1	4	12.9		31	23.8

Source: Computed from the field survey data, 2007

*** and * represent level of significant at 1% and 10% respectively.

Poor farmers have found group borrowing inconvenient. They face problems to form a group because the better-off do not want them in their group. This is because some farmers thought that the poorest of the poor have not enough assets which serve as guarantee in case of default. Even though theoretically, the poor can form a group among themselves, in practical cases farmers reported that there are factors that limit them from forming a group among themselves.

From these farmers' point of view, recruiting potential borrowers is carried out by the PA credit and saving committee. If a group is unable to repay the loan the screening committee is responsible to collect the loan by using enforcement mechanism on the defaulters. Therefore, in order to minimize the risk of default and their responsibility the PA credit and saving committee undertakes prior evaluation to select borrowers who are capable of repaying their loans. Due to this reason the screening committee requires that not all of the group members are poor. Therefore, the very poor farmers are marginalized in the group membership. Farmers in the group discussion reported that:

“We the very poor farmers could not form a group among ourselves because the Kebele screening committee requires that some of the group members have assets. To form a group with wealthier farmers they don't want us, because we don't have cattle, sheep or goats some of us even a chicken which can serve as a guarantee for group members if we are unable to repay the loan. For example in the middle of us, (pointing his finger and showing one of the group members) he was one of the defaulters last year and his group members had paid his debt. After that when we ask for membership they mentioned the defaulter and they see us at the same eyes with the defaulter”.

(Source: authors field notes. Metema, November 2007).

Female headed households in the study area are characterized with low level of livestock and landholding size. From female headed households perspective these assets are indirectly seen as a guarantee to access credit from the formal credit institutions by the PA credit and saving committee. They criticized the institution's terms that restricts to form a group composed of close relatives. Due to this policy of the institution, female headed households and the very

poor farmers who are neglected by other groups are still unable to form group with their relatives.

In the study area it was observed that when there is a natural disaster the very poor farmers are unable to repay their loans in time due to lack of assets. In the event that a member defaults, the group pays the loan on behalf of a defaulting member and if the group fails to repay the loan they will be denied of future access to credit. It was observed from the view of rich farmers that they do not want the poor in their group due to fear of default. They were reluctant to have a defaulting member in their group.

In the case of FMSC in the study area, guarantor is required to provide agricultural loans and no property collateral was asked by the cooperatives. The strength of guarantor to secure loans provided by service cooperatives can be seen from different perspectives.

From the poor farmers' point of view, guarantor solves the problem of group formation (especially to the very poor) and property collateral requirement by conventional banks. It was indicated that guarantor is convenient to poor farmers because the majority of the farmers are native to the area, they have relatives, friends and neighbors and therefore it is easy to find guarantor in their village except the non ethical farmers, like those most frequently defaults.

They reported that cooperative loans are less secure and the risk of default is relatively higher and delay in loan repayment is common. It was also understood that when a farmer borrows from different sources (ACSI and Cooperative) it is ACSI's loan that is more likely to be repaid first. This was because the group members feel more responsibility in ACSI than guarantors in cooperatives. The risk of default in cooperatives was also higher than in ACSI.

Women also support guarantor and argue that default problem was not due to the weakness of the guarantor rather weak enforcement on borrowers or the guarantor to repay their loans to cooperatives. In ACSI not only the strength of the group members minimizes the risk of default but also the continuous follow up and evaluation made by the institution. From women farmers perspective it can be concluded that using guarantor as collateral by far is helpful to farmers than group lending if there is a strong enforcement mechanism by the institutions to

eliminate the risk of default and other misuse of credit by farmers. Guarantor is the most widely used system for borrowing money especially from the informal credit sources in the study area.

Farmers perceptions of saving requirement by wealth and sex category

Farmers towards the use of modern saving have the same perception that saving system encourages farmers to save. It was also believed that it is only ACSI, which provides those saving services. They also recognize that the institution not only gives the service of saving but also continuously promotes to farmers the importance of saving, and due to the fact that the involvement of people in voluntary saving is growing from time to time in the study area.

The study also revealed that the majority of the respondent farmers from each wealth and sex group have positive perception towards saving in MFI. However, the positive perception by farmers' wealth and sex groups decreases from the rich to the very poor and also between male and female households (Table, 14). The difference in perception between wealth groups was statistically significant at 5% probability level. This may imply that it was the income status of farmers that make perception difference among the groups. The difference between male and female headed households was also significant at 10% probability level.

Table 14: Respondent farmers' perception of saving in ACSI

Wealth status/sex	Agree		Neutral		Disagree		X ² -value	Total	
	N	%	N	%	N	%		N	%
Rich	6	85.7	1	14.3	0	0	23.695**	7	5.4
Medium rich	17	81.0	0	0	4	19.0		21	16.1
Poor	35	70.0	9	18.0	6	12.0		50	38.5
Very poor	32	61.5	18	34.6	2	3.9		52	40.0
Male	74	74.7	16	16.2	9	9.1	7.259*	99	76.2
Female	16	51.6	12	38.7	3	9.7		31	23.8

Source: Computed from the field survey data, 2007

** and * represent level of significant at 5% and 10% level respectively.

Farmers reflected their view from the discussion that traditional saving is risky, cash kept in the house can be stolen; livestock can die of disease or can not be easily changed in to cash when needed. Therefore, saving in MFI will also help the depositors to access credit from this institution. However, they criticized the long process to withdraw deposits of compulsory savings.

Compulsory saving is earlier saving requirement by loan clients which is seen as partial collateral by the institution. From the farmers' point of view, earlier saving requirement excludes those unable to meet this requirement especially the very poor farmers. Moreover, time, low income, and distance from MFI were some of the limiting factors to save regularly in the institutions. Because of physical distance problems farmers reported that the cost of transportation to reach to the MFI is higher than their one time deposit.

Farmers view of the repayment period by wealth and sex category

Farmers thought that repaying loans by group members at the same time under all conditions is not suitable since ability to pay may not be uniform and also repayment capacity typically varies across seasons. This has disadvantages according to the farmer's perception that one has to wait until incapable group members have repaid. This may also affect the farmer continual access to credit for working capital.

Table 15: Respondent farmers' perception of the repayment period as a constraint to access credit in ACSI

Wealth status/sex	Yes		No		X ² -value	Total	
	N	Per cent	N	Per cent		N	Per cent
Rich	1	14.3	6	85.7	9.120**	7	5.4
Medium rich	9	42.8	12	57.2		21	16.1
Poor	28	56.0	22	44.0		50	38.5
Very poor	35	67.3	17	32.7		52	40.0
Male	53	53.5	46	46.5	1.156	99	76.2
Female	20	64.4	11	35.6		31	23.8

Source: Computed from the field survey data, 2007

** represent level of significant at 5%.

It was also apparent from the survey result that repayment period was perceived by farmers differently with a variation in their wealth status and gender. The majority of poor and very poor respondent farm households perceived the inflexible repayment period as one of the constraints to access credit from the institution. The percentage difference between the wealth groups was statistically significant at 5% probability level. From the total respondents 64.5 per cent of female and 53.5 per cent of male headed households responded that the inflexible repayment period was a problem to access credit (Table 15). However, the difference between the groups was not statistically significant.

Credit distributed from ACSI for agricultural activities are flexible, and this helps farmers to allocate the loan for any alternative agricultural purposes. For example, among the common purposes of borrowing by farmers are purchases of breeding animals like cattle or goats. In this case the one year term limit becomes too restrictive; it may be difficult to pay fully in a year. Due to the reasons farmers forced to take other loans from informal credit sources with higher interest rate in order to repay previous loans.

Farmers also pointed out about the repayment time that borrowers are expected to repay their loans immediately after harvest. In the study area, most commonly it was January that agreement was made between the institution and borrowers to be the repayment time; because, this is the month the last crop is harvested. Repaying at the same time will force farmers to sell their products at lower prices.

Women farmers reported that the economic status of female headed households in the study area was lower than male farmers. When there is shortage of production due to excess rain or drought they sometimes are unable to repay their loan in time. From women point of view, if any request comes from farmers for dalliance of the repayment until price rise or to extend to the next harvest season, no chance and excuse or did not show any flexibility to relax the repayment time what ever problems are faced by farmers. They comment that the institution's repayment policy is rigid and inflexible.

The repayment period of FMSC loans

In farmers multipurpose cooperatives, according to the view of poor and female headed households, if there are risks that occur due to seasonal changes (drought and excess rain), pest and insect damage and price failure the decision with regard to the repayment time could be reconsidered, that means it is flexible.

Moreover, the repayment time of agricultural input loans that are channeled through cooperatives are decided uniformly by the regional agricultural input and credit coordinating committee. This is also immediately after crops are harvested. Cooperatives are responsible to deliver and collect agricultural input loans but they are not mandated to reconsider the repayment time.

Farmers perceived that, in cooperatives as compared to their low level of capital accumulation, the relaxed repayment time might affect other farmers' future access to credit. Farmers thought that farmers' service cooperatives were weak and some times no mechanism for enforcement in case of default, poor repayment performance and very relaxed repayment time as compared to ACSI in the study area.

Sample farmer households perception with regard to the repayment period in FMPC was assessed. Almost in all wealth and sex groups the majority of the respondent perceived repayment period was not a constraint in cooperatives (Table 16). The difference in terms of wealth and sex among the groups were not statistically significant.

Table 16: Respondent farmers’ perception of repayment period as a constraint to access cooperative loan

Wealth status/sex	Yes		No		X ² -value	Total	
	N	Per cent	N	Per cent		N	Per cent
Rich	1	14.3	6	85.7	2.387	7	5.4
Medium rich	6	28.6	15	71.4		21	16.1
Poor	9	18.0	41	82.0	0.502	50	38.5
Very poor	13	25.0	39	75.0		52	40.0
Male	19	19.2	80	80.8	0.502	99	76.2
Female	10	32.3	21	67.7		31	23.8

Source: Computed from the field survey data, 2007

Farmers’ opinion on the rate of interest by wealth and sex category

Farmers in the group discussion did not have clear information about the amount of interest rate paid to the depositors. But they know as interest is paid to their deposit. Farmers have different perception of the amount of interest rates charged by the formal financial institutions.

It was observed from the discussion and group interview that farmers were not more interested about the interest rate to be paid to the deposit, rather access to safe saving services were appreciated. According to their view the level of interest charged by the institution is neither high nor low; they thought that it was reasonable. They also indicated that ACSI provides a door-to- door service when supplying the loan as well as collecting the repayment. Therefore, the level of interest charged as compared to its service as perceived by farmers is justifiable because private moneylenders charges up to 100 per cent interest rate in the same place. In relation to this, Hossain (1988), suggested on the issue of interest rates, “the bank also supports the view that high interest rate credit can help to keep away the influential non-target group from a targeted credit program”.

Though, the interest rate charged by ACSI is greater than banks, from the farmers’ point of view the rate of interest did not hinder farmers to use credit from the institution. They also

realized that, if the credit from the institution is properly used for productive purposes it was profitable to cover the interest charged by the institution.

Respondent farmers were also asked whether the interest rate charged by ACSI was a constraint to access credit from the institution. However, their view on the interest rate was almost uniform. The survey result in Table 17 indicated that the majority of different wealth and sex groups perceived that the rate of interest was not higher and it was not a constraint to access credit from this source. The difference in perceiving the rate of interest in ACSI between wealth and sex categories was not statistically significant.

Table 17: Respondent farmers' perception of the interest rate charged by ACSI

Wealth status/sex	Yes		No		X ² -value	Total	
	N	Per cent	N	Per cent		N	Per cent
Rich	2	28.6	5	71.4	2.387	7	5.4
Medium rich	2	9.5	19	90.5		21	16.1
Poor	8	16.0	42	84.0		50	38.5
Very poor	7	13.5	45	86.5		52	40.0
Male	16	16.2	83	83.8	0.502	99	76.2
Female	3	9.7	28	90.3		31	23.8

Source: Computed from the field survey data, 2007

The view of farmers on the interest rate charged by cooperatives

The views of different wealth and sex groups in the interest rate charged by cooperatives were almost homogeneous. Farmers perceived that in cooperatives the terms and conditions of credit including the interest rate are decided by members. Since interest rate is paid in kind, the higher interest rate in the surveyed year is due to a change in price of the crop that was not predicted at the time of the decision. On the other hand if the price of crop were lower in the surveyed year the interest rate may be lower than the interest rate charged by other formal credit institutions. In addition, farmers perceived that what ever the interest rate is paid to the cooperative, farmers would be benefited from the profits of the cooperative in the form of dividend.

Respondent farmers' perception of the interest rate charged by cooperatives was also quantitatively measured (Table 18). According to their response, the interest rate in cooperatives was not a problem and the difference between the wealth and sex groups was not statistically significant.

Table 18: Respondent farmers' perception of the interest rate charged by cooperatives

Wealth status/sex	Yes		No		X ² -value	Total	
	N	Per cent	N	Per cent		N	Per cent
Rich	1	14.3	6	85.7	3.293	7	5.4
Medium rich	2	9.5	19	90.5		21	16.1
Poor	4	8.0	46	92.0		50	38.5
Very poor	4	7.7	48	92.3		52	40.0
Male	8	8.1	91	91.9	0.005	99	76.2
Female	3	14.3	28	85.7		31	23.8

Source: Computed from the field survey data, 2007

Farmers view of the loan size by wealth and sex category

It was observed that because of the labor shortage created during critical weeding and harvesting seasons of sesame, cotton and sorghum in the area, demands for hired labor increases. Farmers also used rented oxen to plough their farm. Therefore, they could not cover all the farming costs from their own sources. Hence, there is a high demand for credit in the study area. The demand for credit in the area is not only in terms of availability but also in the loan size.

Respondent farmers' decision was important not to agree or disagree whether they were satisfied or not on the amount of the loan provided by MFI. As indicated in Table 19, the survey result revealed that the majority of rich, medium rich and poor respondent farmers thought that the size of the loan from MFI was not satisfactory. However, more than half of the very poor farmers and female headed households were satisfied, by the loan size provided. The difference among the wealth groups in perceiving the loan size was significant at 10%

level. Male and female headed households have different perceptions on the loan size; though it was not statistically significant.

Table 19: Respondent farmers’ perception of the loan size delivered by ACSI

Wealth status/sex	Agree		Neutral		Disagree		X ² -value	Total	
	N	%	N	%	N	%		N	%
Rich	0	0	1	14.3	6	85.7	22.122**	7	5.4
Medium rich	8	39.1	1	4.8	12	57.1		21	16.1
Poor	14	28.0	7	14.0	31	62.0		50	38.5
Very poor	21	40.4	6	11.5	25	48.1		52	40.0
Male	31	31.3	10	10.1	58	58.6	2.776	99	76.2
Female	12	38.7	5	16.1	14	45.2		31	23.8

Source: Computed from the field survey data, 2007

** represent level of significant at 5%.

Farmers required large loan size. Based on their previous year experience, the loan provided by ACSI was too small, and the amount could not meet the demand of farmers, especially the better-off farmers that require two to three folds from the maximum limit provided by the institution.

Poor farmers have different views of the loan size. Some of the farmers from this group reported that at the existing condition the maximum loan size Br. 5000.00 is not small to poor farmers. They perceived that small size loans with repeated loan cycles are important. Small size loan to poor farmers is easy for repayment. It was also observed that small size loan helps to reach large number of potential borrowers.

There was also a different view of the loan size of the institution from this group. They reported that; Metema is cash crop producing woreda, Sesame and cotton. Most farmers even the poor used hired labor during weeding and harvesting practices. Therefore, there is a competition for labor and as a result the price for labor increases and demand for operating expenses or cash requirement increases. Therefore, Br. 5000.00 limit is restrictive and rigid.

Moreover, the small size loan creates a financing gap which forces farmers to borrow from private moneylenders at a higher interest rate.

From the point of view of women farmers the loan size from ACSI is not small; however, their major criticism goes to the maximum first time loan, which is too small to poor women to start business.

According to the result of the survey the minimum loan size obtained from ACSI during the surveyed year was Br. 1000.00, while the maximum was Br. 5000.00 and the average loan size were Br. 2426.66 (Table 20).

Table 20: Loan disbursed from MFI for sample households during the surveyed year in Br.

Source	No of households	Minimum	Maximum	Mean	Std. Dev.
ACSI	45	1000.00	5000.00	2426.66	894.78
Service cooperatives	28	100.00	5000.00	733.92	1213.35

Source: Computed from the field survey data, 2007

Farmers' opinion of the loan size from cooperatives

It was indicated that the minimum, maximum and the average loan size delivered for farmers from service cooperatives including external sources (GOs and NGOs) in the surveyed year is clearly indicated in Table 21.

It was observed that there was no any perception difference between wealth and sex groups in the group discussion with regard to the loan size of cooperatives. Farmers pointed out that though, the size of the loan from service cooperatives own source is too small, clients now that the cooperatives at this instant couldn't go beyond this limit. They also perceived that it is up to the members of the cooperatives to increase the size of the loan at any convenient time. However, the unsatisfactory size of the loan in cooperatives also forced farmers to seek other formal and informal sources.

4.4 Women and Different Wealth Groups Access to Credit Sources

4.4.1 Demand for rural credit by smallholder farmers

According to Zeller (1994), when taking credit is perceived as a decision making process, then it starts with the decision of the individual to apply for credit. In fact, the demand for loans depends on the self-financing potential, access to credit facilities and risk taking ability of borrowers. Demand is an important factor to access credit.

From the total respondents about 86.2 per cent of rural households want to borrow money for their daily livelihood, where as the remaining 13.8 per cent were not interested to borrow money at the time of the surveyed year (Table 21). It was found that about 87.9 percent of male and 80.7 percent of female headed households want to borrow money.

According to their wealth category, different wealth groups were demanding production and consumption credit in the study area. More than 80% Of each wealth category were demanding credit during the surveyed year (Table 21) Thus, it is apparent from the results that there is a high demand for credit in the study area by all smallholder farmers.

Table 21: Smallholder farmers demand to credit

Wealth status/sex	Yes		No		Total	
	N	Per cent	N	Per cent	N	Per cent
Rich	6	85.7	1	14.3	7	5.4
Medium rich	17	81.0	4	19.0	21	16.1
Poor	46	92.0	4	8.0	50	38.5
Very poor	43	82.7	9	17.3	52	40.0
Total	112	86.2	18	13.7	130	100.0
Male	87	87.9	12	12.1	99	100
Female	25	80.6	6	19.4	31	100

Source: Computed from the field survey data, 2007

4.4.2 Female headed households in the credit market

Theoretical and empirical studies show that one of the disadvantaged groups from the economic point of view is women. Though microfinance institutions work to reach women, because of the existing gender differences women are still less accessed to use formal credit. Therefore, in this study it was tried to investigate the current status of female headed households in the credit market in the study area.

The position of female headed households in accessing credit and Farmers' perceptions of the extent to which MFIs is being addressing women's needs

The study found that credit access of female headed households is still limited. According to the survey result, out of the total respondents about 76.2% (84.8% male and 15.2% female) of the households had borrowed money in the surveyed year. From the credit user respondents the majority (43.4%) of the farmers borrowed from non-formal sources, 40.4% from the formal and 16.3% borrowed from both sources. Credit access from both formal and informal sources simultaneously may mean that the size of the loan from the formal sources was not satisfying the credit requirements of smallholder farmers in the study area.

The formal credit sources, ACSI and farmers service cooperatives covered about 56.6 per cent of the credit users in the surveyed woreda (Table 22). Of the total credit users by ACSI 82.1% and 17.9 % were male and female headed households respectively. In addition, from the farmer cooperatives 81.8 percent and 18.2 percent of the credit users were male and female headed households respectively. While the remaining 30.4% of the formal credit users were accessed from both sources simultaneously, among them the share of female headed households was 5.9%. On an average, the share of credit provided to female headed households from formal credit sources was only 14.3 percent.

On the other hand, the total number of sample households who have borrowed from informal sources were 59.6% out of which female headed households were 13.6%. Among the informal credit institutions, the share of private moneylenders or Arata Abedari were significantly large, relatives and friends are also the second most important sources of

informal credit in the study area. Other informal credit sources covered 8.5% of the credit users. Broadly, the credit share of female headed households from the informal financial institution was 13.6%.

Table 22: Respondent farmer’s access to formal and informal credit Sources by sex

Credit source	Male (N=99)		Female (N=31)		Total (N=130)	
	N	%	N	%	N	%
From formal sources only	33	82.5	7	17.5	40	40.4
From informal sources only	36	83.7	7	16.3	43	43.4
From both sources simultaneously	15	93.7	1	6.3	16	16.2
Total	84	84.8	15	15.2	99	100.0
Sources from ACSI only	23	82.1	5	17.9	28	50.0
Sources from cooperatives only	9	81.8	2	18.2	11	19.6
From ACSI and Cooperatives simultaneously	16	94.1	1	5.9	17	30.4
Total formal sources	48	85.7	8	14.3	56	100.0
Sources from Private money lenders	40	90.9	4	9.1	44	74.6
Sources from Relatives and friends	6	60.0	4	40	10	16.9
Sources from Neighbors	4	100.0	0	0	4	6.8
Sources from Iddirs	1	100.0	0	0	1	1.7
Total informal sources	51	86.4	8	13.6	59	100.0

Source: Computed from the field survey data, 2007

Mekonnen (2004) reported that women were allocated some portion of the credit, but a good portion of it was destined to their male counterparts, violating the institutional objective. This partly has to do with the fact that women are still highly handicapped with lack of business skills, much more than their male counterparts. On the other hand, Getaneh (2005a) indicated that microfinance generally targeted women. A basic premise is that economic participation is a foundation for other dimensions of empowerment. The recent microcredit summit report indicated that women constitute over 79% of clients in the industry globally. However, only 35% of ACSI clients were women.

The data obtained from Metema woreda ACSI sub branch office supports that the percentage share of women clients in the woreda increased in the last five years since 2003 (Table 23).

Table 23: The number of women credit clients in Metema

Year	Number of credit clients in ACSI		Number of credit clients in FMSC	
	Total clients	Women's percentage share	Total clients	Women's percentage share
2003	3681	8.3	833	6.2
2004	2655	28	942	7.6
2005	3046	25.4	1050	7.6
2006	3622	40.5	982	3.1
2007	4323	47.5	Not available	

Source: Field survey data, 2007

Currently, in ACSI when new clients are registered for credit from the men headed households it is the women who makes all the agreements with the institution and it is to the women that the loan is provided.

The data obtained from Metema woreda office of agriculture revealed that out of the total of 26,847 households in the woreda, 5512 or 20.5 % were organized under multipurpose cooperatives and the percentage share of female headed households from the total household heads in the woreda were 36.6%. However, the number of female headed households that were cooperative members was only 11.8 per cent. The share of women in credit service (both input credit and other agricultural credit) from the cooperatives in the past five years was also too low (Table 23).

Farmers in the group discussion also perceived that before two to three years ago there was no strong commitment to involve women as a major client in the institution. But, these days there are some indicators which show that the institution is working to reach women farmers in the credit market. As it is discussed in the previous section, the percentage share of women clients in ACSI in the woreda increased in the last five years.

Currently, in ACSI when new clients are registered for credit from the male headed household it is the woman who makes all the agreements with the institution and it is to the women that the loan is provided. On the other hand it was observed that the status of female headed households in formal credit use was limited. In these regards there were different perceptions among the farmers.

Male farmers thought that there is no any difference changing the loan client from husband to wife in credit utilization. They reported that;

“Borrowing in the name of women in male headed households does not mean reaching women. It is putting the money from the right pocket to the left pocket”.

(Source: authors field notes. Metema, November 2007).

They also argued that most of the very poor women are heads of households and these are still the most vulnerable groups who are neglected in credit use due to group formation and other related problems. They suggested that the institution had to work yet to reach these female headed households rather than changing the title from husband to wife.

Women thought that providing loans to women solves the problem of misuse of loans by their male counterparts and it helps women to contribute their part in the production process by proper utilization of the loan. In addition when women participate in the lending process as a main client from the household, they showed strong motivation to repay the loan than male counterparts.

It was observed also from the women that reaching women as a major client in the credit system have an implication to women to play an important role in the decision making process and it is in line with Kabeer (2001) who found that male loan holders generally reported sole decision-making in relation to use of loans, the running of loan-funded enterprise and disposal of income from these enterprises, suggesting that wives of male loan holders did not have a great deal of say on these matters. While women loan holders did

appear to exercise a greater degree of say than the wives of male loan holders, they were more likely to report joint and less likely to report sole decision-making than male loan holders.

The result from the survey data would support the above argument that from the total credit clients of ACSI in the sampled farm households only 13.3% of them were female headed households. In addition farmers' perception of MFI in reaching female headed households was also measured quantitatively. 66.2 per cent of the sample households did not agree that female headed households were major credit targets for ACSI, while 32.3 per cent thought they were and the remaining 1.5 per cent were neutral (Table 24). The percentage difference between male and female respondent farmers was not statistically significant.

Table 24: Respondent farmers' perception of reaching out to female headed household in the credit service of ACSI

Sex	Agree		Neutral		Disagree		X ² -value	Total	
	N	%	N	%	N	%		N	%
Male	29	29.3	2	2.0	68	68.7	2.802	99	76.2
Female	13	41.9	0	0	18	58.1		31	23.8
Total	42	32.3	2	1.5	86	66.2		130	100.0

Source: Computed from the field survey data, 2007

In FMSC of the study area, from farmers' point of view, women had limited access to credit and membership of cooperatives. There were different views for limited access of women in FMSC.

According to the view of male farmers, women had limited access to cooperatives credit. Because there was no clearly indicated objective and special efforts made to address and encourage women to participate or to access credit in the cooperatives. On the other hand, in the principle of cooperatives, all members have equal rights to participate and to share the benefits, and women as a member had the right to access credit and other benefits from the cooperatives. But, according to male farmers perspective "most female headed households did not apply for credit as compared to male headed households". In line with application

problems Mohiuddin, (1993), also reported that demand factors relate to women's unwillingness and inability to apply for and accept credit from formal financial institutions due to several reasons.

Women argue that “women have multiple roles in the house, for female headed households including leadership roles”. Therefore, shortage of time, lack of information and mobility problems limit female headed households from applying in time. Moreover, women reported that cooperative leaders perceived that “lending to women is risky”, they thought, “women have lower assets than men and due to that reason women may not repay their debt like men”. As a result, women were denied of access to credit from cooperatives.

Respondent farmers view was also assessed in the study that whether female headed households were major credit targets in the farmers' service cooperatives. The result shows that the majority (88.5%) of the farmers forwarded their disagreement as indicated in Table 25. The difference between the sex groups was not statistically significant.

Table 25: Respondent farmers' perception of the participation of female headed households in the credit service of cooperatives

Sex	Agree		Neutral		Disagree		X ² -value	Total	
	N	%	N	%	N	%		N	%
Male	7	7.1	4	4.0	88	88.9	1.205	99	76.2
Female	3	9.7	1	3.2	27	87.1		31	23.8
Total	10	7.7	5	3.8	115	88.5		130	100.0

Source: Computed from the field survey data, 2007

Based on the survey results on the status of female headed households it can be concluded that the demographic, socioeconomic and institutional statuses of female headed households were lower than male headed households. This lower status of female farmers that may arise from the existing gender inequalities had contributed to their lower credit access share in the study area.

4.4.3 Smallholder farmer's access to credit by wealth group

The result of the study shows that the very poor sample households were the most disadvantaged group, while the medium rich were the most privileged group in the study area as far as credit access from formal credit sources is concerned (Table 26). The percentage difference between the four groups in terms of formal credit access was statistically significant at 1% probability level.

It was also identified in this study that unlike the formal sources the informal credit sources provide both production and consumption purpose credit. And also as it is indicated in Table 26, the credit share of farmers from the non-formal credit sources by wealth status was identified. The survey result revealed that the largest number of credit users from the informal credit sources were the very poor farm households. This implies that the very poor farmers who were deprived of access from the formal sources were forced to find access from the informal sources. In line with this result Atieno (2001), indicated that moneylenders being the most expensive source of credit, demand for credit from this source comes mainly from those without other option. However, the difference between the groups with regard to their credit use from the informal sources was not statistically significant.

Table 26: Farmers access to credit sources with respect to their wealth status

Access to credit	Medium								X ² - value	Total	
	Rich		rich		Poor		Very poor			N	%
	N	%	N	%	N	%	N	%			
Formal Cr.									15.437***		
Users	3	42.9	15	71.4	27	54.0	11	21.6	56	43.1	
Non-users	4	57.1	6	28.6	23	46.0	41	78.4	74	56.9	
Informal Cr.									1.092		
Users	3	42.9	10	47.6	20	40.0	26	50.0	59	45.4	
Non-users	4	57.1	11	52.4	30	60.0	26	50.0	71	54.6	
Formal+informal									2.923		
Users	5	71.4	18	85.7	40	80.0	36	69.2	99	76.2	
Non-users	2	28.6	3	14.3	10	20.0	16	30.8	31	23.8	

Source: Computed from the field survey data, 2007

*** represent level of significant at 1%.

Note: 16 farm households took credit from both sources simultaneously

4.5 Determinants of Households Access to Formal Sources of Credit

4.5.1 Descriptive statistics of selected variables

In order to have a clear picture of the quantitative demographic, socio-economic, institutional and communication variables which differentiate between formal credit users from the non-users t-test and chi-square test was applied. Four continuous and six discrete variables were found significant with 1%, 5% and 10% probability level. Only these significant variables are described in table 27 and the discussions that follow it.

Table 27: Mean differences of continuous variables for formal credit users and non-users

Variables	Non-users	Credit users	t-value	Significance level
	Mean	Mean		
TCULASI	1.46(1.48)	4.33(3.48)	5.790***	0.000
EXECON	0.81(1.28)	3.43(2.94)	6.230***	0.000
EXCRUFI	0.11(0.48)	2.29(2.21)	7.233***	0.000
AGE	38.82(10.01)	42.04(10.33)	1.788*	0.078

Source: survey result (2007)

***, * represent level of significant at 1% and 10% level respectively

Numbers in parentheses indicate standard deviations

Total cultivated land size (TCULASI) is greater for formal credit users than non-users. The mean value of number of household members who used formal credit was 4.33 ha for users and 1.46 ha for non-users. The mean difference between credit users and non-users was significant at 1% level. The result of the survey was as expected because, farmers who cultivate larger size of land can utilize more capital and also, larger land size reflects ownership of an important asset, which is expected to affect access to agricultural credit.

Extension contact (EXECON) is also related to access formal credit for smallholder farmers. It was hypothesized that farmers who have frequent contact with extension agents were expected to have more information that will influence farm household's demand to use credit from the formal sources. An average number of extension contact days for credit user and non-user sample households were 3.43 and 0.81 days per three months or 13.72 and 3.24 days per annum respectively, the difference between the credit users and non-users group was significant at 1% probability level.

Experience of households in formal credit use (EXCRUFI) is an important variable that affects access to formal credit. Credit users from the formal sources have an average experience of 2.29 years whereas the non-users have an average year experience of 0.11 year. The mean difference between the credit user and non-user groups was significant at 1% level of significance. That means, farmers experience in credit use from the formal financial institutions plays a significant role in accessing credit from these sources.

Significant mean difference was observed between formal credit users and non-users with respect to age (AGE). The result of the survey revealed that credit users and non-user farmers have an average age of 42.04 and 38.82 years respectively. The difference in terms of age among the groups was significant at 10% probability level. This indicates that farmers with higher age have better association with credit sources that could provide better information about the institutions that can facilitate access to formal credit sources.

Table 28: Significant discrete variables

Variables	Value	Formal credit		Chi-square value	P-value
		Non-user	user		
SEX	0	23(31.1)	8(14.3)	4.952**	0.026
	1	51(68.9)	48(85.7)		
EDLVL	0	50(67.8)	17(30.4)	17.688***	0.000
	1	24(32.2)	39(69.6)		
PARTIEX	0	72(97.3)	43(76.8)	13.139***	0.000
	1	2(2.7)	13(23.2)		
MEMCOOP	0	59(79.7)	21(37.5)	24.018***	0.000
	1	15(20.3)	35(62.5)		
RITAKE	0	25(33.8)	41(73.2)	19.829***	0.000
	1	49(66.2)	15(26.8)		
COLLATGF	0	6(8.1)	38(67.9)	50.825***	0.000
	1	68(91.9)	18(32.1)		

Source: survey result (2007)

***, ** represent level of significant at 1% and 5% level respectively

Numbers in parentheses indicate percentages

Respondent farmers sex (SEX) is one of the discrete variables that significantly affect formal credit uses. From the total sample households, 14.3 percent of the users and 31.1 percent of the non-users were female headed households. The number of credit user female headed households is lower than the credit users of male household heads. The difference between the user and non-user groups was significant at 5% probability level.

Differences were observed between formal credit users and non-users in literacy level (EDULVL). Of the total sample respondents 67.8 per cent of credit non-users and 30.4 per cent of users were illiterate respectively. The difference in literacy level between credit users and non-users from the formal financial sources was statistically significant at 1% level of probability. This may probably mean that literate farmers have more exposure to the external environment and information which helps them easily associate to credit sources.

The number of farm households who participated in agricultural extension package (PARTIEX) was greater for formal credit users than non-users. Out of the total respondents, 23.2 per cent from the credit users and 2.7 per cent from the non-users have participated in agricultural extension package program. The difference in participating in agricultural extension package between the credit user and non user respondent farmers was significant at 1% probability level. This implies that farmers who are willing to participate in agricultural technologies will be facilitated with agricultural credit.

Respondent's attitude towards risk (RITAKE) was significantly different between credit users and non-users. Among the groups 26.8 per cent of the users and 66.2 per cent of the non-users thought that formal credit is risky to repay incase of crop failure. The difference between the two groups was significant at 1% probability level. This perception difference might be one of the problems for lower status of smallholder farmers' access to formal credit.

Farm households are expected to have social collateral which is practiced in group borrowing (COLLATGF) methods as a precondition to access credit in microfinance institutions. From the total sample households 32.1 per cent of the users and 91.9 per cent of the non-users responded that group lending was inconvenient to get credit from the formal sources. The difference between these figures was significant at 1% level. This may be due to the fact that the better-off farmers do not want the poor in their group not to take risk in case of default.

Membership of farmers multipurpose cooperatives (MEMCOOP) is also the other variable that significantly affects access to formal credit. From the total respondents 62.5% were

credit users while only 20.3% were not credit users from the formal sources. This has significance percentage difference at 1% probability level between the user and non-user groups. This implies membership of farmer's multipurpose cooperative plays a determining role in providing access to formal credit especially in farmer's multipurpose cooperatives' source.

4.5.2 Multicollinearity diagnosis

To study factors affecting smallholder farmer's access to formal credit, data gathered from 130 farmers were subjected to logistic regression analysis. The statistical software used for analyzing the data was SPSS 12.0 for windows. Prior to running the logistic regression model, both the continuous and discrete explanatory variables were checked for the existence of multi-collinearity problem. The problem arises when at least one of the independent variables is a linear combination of the others. The existence of multi-collinearity might cause the estimated regression coefficients to have the wrong signs and smaller t-ratios that might lead to wrong conclusions.

There are two measures that are often suggested to test the presence of multi-collinearity. These are: Variance Inflation Factor (VIF) for association among the continuous explanatory variables and contingency coefficients for dummy variables Gujarati (2003).

The technique of variance inflation factor (VIF) was employed to detect the problem of multi-collinearity among the continuous variables. According to Gujarati (2003), VIF can be

$$\text{defined as: } \text{VIF} (x_i) = \frac{1}{1 - R_i^2}$$

Where, R_i^2 is the square of multiple correlation coefficients that results when one explanatory variable (X_i) is regressed against all other explanatory variables. The larger the value of VIF (x_i) the more "troublesome" or collinear the variable X_i is. As a rule of thumb, if the VIF of a variable exceeds 10, there is a multi-collinearity problem. The VIF values displayed below (Table 29) have shown that all the continuous explanatory variables have no serious multi-collinearity problem.

Table 29: Variance inflation factor for continuous explanatory variables

Variables	Ri ²	VIF
AGE	0.196	1.244
TCULASI	0.420	1.725
FAMILABR	0.211	1.267
NLSTLU	0.282	1.394
EXECON	0.319	1.468
EXCRUFI	0.325	1.481
DINST	0.106	1.118

Source: Computed from the field survey data, 2007

Similarly, contingency coefficients were computed to check the existence of multi-collinearity problem among the discrete explanatory variables. The contingency coefficient is computed as:

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}}$$

Where, C= Coefficient of contingency,

χ^2 = Chi-square random variable and

N = total sample size.

The decision rule for contingency coefficients is that when its value approaches 1, there is a problem of association between the discrete variables.

Table 30: Contingency coefficients for discrete explanatory variables

	1	2	3	4	5	6	7	8
1	1	0.279	0.144	0.18	0.203	0.240	0.094	0.159
2		1	0.311	0.301	0.211	0.330	0.123	0.205
3			1	0.205	0.207	0.289	0.021	0.130
4				1	0.318	0.261	0.190	0.030
5					1	0.355	0.095	0.045
6						1	0.056	0.060
7							1	0.027
8								1

Source: Computed from the field survey data, 2007

Description- 1 = SEX, 2 = EDLVL, 3 = PARTIEX, 4= MEMCOOP,
5 = RITAKE, 6 = COLLATGF, 7 = SHOREPIN and 8 = LEPROC

Based on the VIF and contingency coefficient results, the data were found to have no serious problem of multi-collinearity and therefore the continuous and discrete explanatory variables were retained in the model.

4.5.3 Model output

In the preceding section, variables characterizing the farm households and their differences among the user and non-user groups were identified. However, in the logit model analysis, we emphasize on considering the combined effect of variables between formal credit user and non-user farm households in the study area. Therefore, the emphasis is on analyzing the variables together, not one at a time. By considering the variables simultaneously, we are able to incorporate important information about their relationship.

Seventeen variables were hypothesized to explain factors affecting smallholder farmer's access to formal credit. Out of these six of the variables were found to be significant, while

the remaining nine were less significant in explaining the variations in the dependent variable and two variables did not show variation among sample farm households.

The maximum likelihood estimates of the logistic regression model show that participation in extension package programs (PARTIEXT), Experience in credit use from the formal sources (EXCRIFS), total cultivated land holding (TOCULASI), number of livestock in TLU (NLSTLU), collateral or group formation (COLLATGF) and membership of farmers multipurpose cooperatives (MEMCOOP) were important factors influencing smallholder farmers access to formal credit in the study area (Table 31).

All of the demographic variables (AGE, SEX, EDLVL), extension contact (EXCON), attitude towards risk (RITAKE), distance from lending institutions (DINST), repayment period and time (SHOREPIN), lending procedure (LEPROC) and family labor working in the farm (FAMILABR) were less powerful in explaining smallholder farmers' access to formal credit indicating that the two groups were homogeneous with regard to these variables.

The variables resettled farm households (RESFHH) and lack of opportunity to take a second loan (LAOPLOAN) did not show any variation among sample farm households. For this reason it was not retained in the model.

Table 31: Maximum likelihood estimates of logit model and the effects of explanatory variables on the probability of access to formal credit

Explanatory Variables	Estimated coefficient	Odds ratio	Wald statistics	Significance level
Constant	-2.867	.057	2.078	.149
AGE	.030	1.030	.661	.416
SEX	-.552	.576	.387	.534
EDLVL	.597	1.817	.930	.335
EXECON	-.047	.954	.039	.844
PARTIEXT	2.771	15.969	4.922**	.027
EXCRUIFS	1.068	2.910	10.829***	.001
RITAKE	.703	2.019	.605	.437
MEMCOOP	1.618	5.043	3.406*	.065
DINST	-.190	.827	.407	.523
COLLATGF	-2.186	.112	7.699***	.006
SHOREPIN	.207	1.230	.077	.782
LEPROC	-.779	.459	.709	.400
NLSTLU	-.194	.823	3.818**	.051
TOCULASI	.907	2.477	6.942***	.008
FAMILABR	-.252	.777	.449	.503

Source: Computed from the field survey data, 2007

***, ** and * represent level of significant at 1%, 5% and 10% respectively.

4.5.4 Elaboration on significant explanatory variables

Participation in extension package programs (PARTIEXT) was found to be an important variable in accessing formal credit use. The wald statistics corresponding to the variable PARTIEXT show that it is significant at 5% level. The odds favoring access to formal credit use increases by a factor of 15.969 for farmers who participate in agricultural extension package programs. This is consistent with the prior expectation. The explanation is that the regional government has a policy to provide credit for the purchase of farm technologies to smallholder farmers. Therefore, if farm households participate in extension package program, there is a possibility to be provided the farm inputs on credit basis. This study is also

consistent with Assefa (1989) who empirically tested a set of socio-economic and other important factors influencing agricultural credit use among small farmers aimed at differentiating borrowers from non-borrowers. Using discriminant analysis, Assefa found that adoption of improved technology was a significant variable in distinguishing borrowers from non-borrowers.

It was also apparent from the results that total cultivated land holding (TOCULASI) would increase access to formal credit use. The odds in favor of access to formal credit use increases by a factor of 2.477 for households, which had larger cultivated farm size than those who had lesser farm size. The positive relationship between cultivated land size and access to credit is that farmer who cultivated larger size of land can utilize more capital for labor and other farm inputs and therefore, this will increase the demand for credit and therefore, as demand increase there will be a chance of access to credit. Mohiuddin (1993), stated that both supply and demand factors explain women's limited access to institutional credit, although supply factors are more important.

On the other hand this result contradicts with studies by Anbes (2005), which revealed that "the level of farm credit for fertilizer and high yielding varieties (HYV) varied inversely with farm size". This may be true for fertilizer credit use, but in the case of farm labor it is different. Since farming in rural Ethiopia especially in the study area is extensive, and in extensive farming when the size of the land increases the need for labor proportionally increases. This again increases operational expenses, which leads to the need for additional capital, and additional capital requirement leads to the demand for credit. However, this result is in line with the study of Miller and Ladman (1983) who applied discriminant analysis to identify a set of socio-economic, physical and psychological factors that influence credit use among small farmers with a view to differentiate between borrowers, potential borrowers, and non-borrowers. The results of the study indicated that borrowers were characterized by large farm size.

Experience in credit use from the formal sources (EXCRIFS) is another factor, which is significantly related to the dependent variable and that it is significant at 1% probability level. The odds in favour of accessing to formal credit use increases by a factor of 2.910 for an

increase in a year of experience of formal credit use. The reason behind this is that a farmer having more experience in formal credit use will have more tendencies towards using that source. A study made by Atieno (2001), also agrees with the result of this study that indicates past credit participation was a significant variable to explain the participation in both formal and informal credit markets.

Number of livestock in tropical livestock unit (NLSTLU) in the rural areas constitutes accumulation of wealth, security against emergencies, dowry and also used as a cultural privilege. They can also be easily converted into cash when demand arises. Due to the reasons it was hypothesized to have a negative relationship with the dependent variable by justifying, as the total number of animals in the household increase, the household would be less likely to go for credit. This can be attributed to increase wealth and income base of farm households which makes more money available in the households. The result of the logit model also revealed that the variable has a negative relationship that farmer with lesser number of animals uses formal credit than with larger animals. The odds in favor of access to formal credit use decreases by a factor of 0.823 for households who had larger number of animals. The result is consistent with the prior expectation.

Group formation (COLLATGF): The results of the logit model show that this variable affects access to formal credit negatively. This is consistent with the prior expectation. This variable is significant at 1% level of significance. This is due to the fact that some of the farmers especially the very poor (with no asset) were facing problems to form a group because others do not want them in their group due to fear of risk in case of default. If a single individual defaults, all the members of the group were forced to default and denied access to the next round of loan service. Therefore, group formation requirement by lending institutions as a precondition to provide credit had negative influence to access credit from microfinance institutions. The odds ratio favoring access to formal credit decreases by a factor of 0.112 for smallholder farmers who were deprived of group membership.

In addition, the probability of accessing formal credit was also positively and significantly influenced by being a member of farmers' multipurpose cooperatives (MEMCOOP). This is due to the fact that cooperatives provide agricultural credit (other than of input credit) from

their own source for members only. While for non-members except input credit no other type of credit was provided. Therefore, this was one of the constraints that restrict farmers' credit access from service cooperative which is one of the MFI in the study area. The odds ratio favoring access to formal credit increases by a factor of 5.043 for smallholder farmers who have membership in service cooperatives.

5. SUMMARY AND CONCLUSIONS

5.1 Summary

Ethiopia is one of the countries, where the smallholder farming dominates the overall national economy and its population is subject to extreme poverty. Small farmers of the country who do not have access to capital, encompasses the largest portion of the population. This lack of access to financial services is one of the reasons for rural households to live in the vicious circle of poverty for long period. The formal financial sector in Ethiopia is not well developed to provide their services to the rural poor farmers.

Therefore, the present study was focused on the problems that affect smallholder farmers' access to formal credit. A two stage sampling technique was employed to select first the PAs and then the respondents. The farm households in the selected PAs were categorized into rich, medium rich, poor and very poor in reference to their level of wealth and also male and female. A total of 130 respondents were selected from 3 PAs using probability proportional to size.

It was apparent in the results of the study that group lending solves the problem of collateral requirement by lending institutions, controls misuse of borrowed funds and minimizes the risk of default. However, farmers find it difficult to access credit from MFI. The poor especially the very poor could not form a group because others did not want them in their group; as a result most of the very poor farmers are marginalized to access formal credit. It was also found out that ACSI the only MFI in the study wereda which provides saving services, continuously promotes the importance of saving. Consequently the involvement of people in voluntary saving is growing from time to time. However, compulsory saving which is earlier saving requirement by the institution excludes farmers those who are unable to meet this requirement especially the very poor farmers. From the farmers' perspective, low income, distance and time from MFI was the most limiting factors to save regularly.

The maximum repayment period from both ACSI and FMPC for long has been limited to one year. Moreover, the repayment time for agricultural loans was immediately after crops are harvested and in ACSI, all the group members are expected to repay at the same time. This was difficult for farmers since ability to pay may not be uniform overtime. In addition, one has to wait until all group members have repaid. This may also affect farmers' lack of continual access to credit.

Most of the farmers had positively perceived the interest rates charged by the MFIs in their area. Though, the interest rates charged by the institutions were greater than banks, it was not a problem to access credit from the institutions. However, the loan size provided by the formal financial institutions in the study area was too small, which could not meet the demand of farmers especially during peak agricultural seasons. This small loan size creates financial gap that leads farmers to lend from private moneylenders at higher interest rate.

The survey result also found out that credit access to female headed households is still limited. On average, the share of credit provided to female headed HHs from formal and informal credit sources was only 14.3 and 13.6 percent respectively. The descriptive results of the survey indicated that women's lower status in their level of education, land holding size, livestock holding, membership in FMSC, experience in credit use, extension contact, and participation in agricultural extension package programs significantly contributes to the low status of female headed households' access to formal credit. However, the change of credit entitlement from the husband to a wife by ACSI was positively perceived by most farmers. Women's participation in the credit market as a main client, could increase their decision making power.

When credit access is seen in terms of wealth status of farm households, the results of the study shows that it was statistically significant in the difference between the wealth groups. The very poor sample households were the most disadvantaged, while the medium rich was the most privileged group in terms of access to credit from the formal sources. In the case of non-formal credit sources though, it was not statically significant, the very poor farmers uses non formal credit sources than other groups which implies, the very poor who were deprived

of access from the formal sources were forced to search for non-formal credit sources. On the other hand the majority of credit users (43.4%) of the farmers borrowed from non-formal sources, 40.4% from the formal and 16.3% borrowed from both sources. This indicates that the non-formal credit sector is still most dominant in the study area.

The survey result indicates, 56 (43.1%) of the sampled farm households were credit users, whereas the remaining 74 (56.9%) were non-users. The logistic regression analysis results show that among fifteen explanatory variables, which were included in the model, only six variables were statistically significant while the remaining nine variables were less powerful in explaining the variation.

The analysis shows that the probability of accessing formal credit was positively and significantly affected by participation in extension package programs, cultivated land size, experience in credit use from the formal sources and membership of households in multipurpose cooperatives; and farmers' perceptions of group lending and number of livestock in TLU negatively and significantly affect access to credit from formal source.

Participation in extension package programs was one of the variables, which positively and significantly affect access to formal credit. This is because agricultural credit is usually extended to farmers who would like to use modern agricultural technologies. Also, there was a positive relationship between cultivated land size and access to formal credit because farmers who own larger farm size have more needs for credit to cover labor and input expenses.

The other variable which positively and significantly related to the dependent variable was farmers experience in credit use from the formal sources and that it is significant at 1% probability level. It was observed that a farmer having more experience in formal credit use will have more tendencies towards using that source. Number of livestock in tropical livestock unit was hypothesized to have a negative relationship with the dependent variable the result of the survey was also consistent with the prior expectation which indicated, farmers with larger number of animals did not use formal credit than with lesser animals. The

implication is that when the number of livestock increases the income of farmers will also increase and farmers with larger income will be less likely to go for credit.

The results of the logit model show that farmers' perception of group lending affects access to formal credit negatively. This is because some farmers, especially the very poor, were marginalized from group formation since others do not want them in their group due to fear of risk in case of default. Hence, farmers developed a negative attitude towards the principle of group lending. In addition, membership of farmers' multipurpose cooperatives affects positively and significantly the probability of being accessed to formal credit. This might be due to the fact that cooperatives provide agricultural credit (other than input credit) from their own source for member farmers only.

5.2 Conclusion and Policy Implication

1. Nowadays group lending becomes the most important method of providing rural credit to the poor who could not bring material collateral. However, poor farmers, especially the very poor, find group lending inconvenient to access credit from MFI since they are rejected from the group by others. Therefore, there should be a policy environment whereby individuals may have access to MFI credit, without forming groups, by means of using land use right certificates and also guarantor as a collateral.
2. The results of the study revealed that most of the households borrowed relatively small size of loans for short duration. Hence, before intervention in these areas one should have to formulate policies of credit by assessing the requirements of the communities in relation to the terms and conditions of credit. The policies of credit like the loan size and duration should be designed according to the need of the local society, and the loan size ceiling should be flexible.
3. The majority of the rural households' especially female headed households and the very poor farmers did not use credit from formal financial sources. Therefore, high emphasis should be given in screening potential borrowers and to address the very

poor and female headed households in the formal credit market. Participatory wealth ranking can be carried out to select and reach those who should be first beneficiaries of the service.

4. The repayment period for agricultural loan in the region is almost uniform and regular. These inflexible repayment schedules do not correspond to period of cash availability for the poor households. Therefore, participatory development of activity and income calendars could be used to synchronize repayment schedule with credit need and income flow of different households.

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7. APPENDICES

7. APPENDICES

Appendix I. Conversion factors

Appendix Table 1: Conversion factor used to compute man-equivalent (labor force)

Age Group (years)	Male	Female
< 10	0	0
10 – 13	0.2	0.2
14 – 16	0.5	0.4
17 – 50	1.00	0.8
> 50	0.7	0.5

Source: Storck *et al.* (1991)

Appendix Table 2: Conversion factors to estimate Tropical Livestock Unit equivalents

Animal Category	TLU	Animal Category	TLU
Calf	0.25	Donkey (young)	0.35
Weaned Calf	0.34	Camel	1.25
Heifer	0.75	Sheep and Goat (adult)	0.13
Cow and Ox	1.00	Sheep and Goat (young)	0.06
Horse	1.10	Chicken	0.013
Donkey (adult)	0.70		

Source: Storck *et al.* (1991)

Appendix II: Interview schedule

Serial No of the interview schedule _____
 Date of interview _____
 Name of interviewer _____
 Peasant Association _____
 Village _____
 Respondent's name _____
 Signature _____

1. Household Characteristics

Please provide information about the respondent

S. No	Characteristics	Specify the information
1.1	Age	
1.2	Sex (Male, Female)	
1.3	Marital status	
1.4	Level of education	
1.5	Religion	
1.6	Wealth category	
1.7	Whether new settler in the last 12 months (Yes, No)	
1.8	Whether household head, (Yes, No)	
1.9	Leadership status in the last 12 months (Yes, No)	

Note:

- * Religion of the respondent: (Orthodox, Muslim, Protestant, Catholic, others (specify,))
- * Wealth category of the respondent: (rich, medium rich, poor, very poor)
- * Level of education: (Illiterate, Read and write, Primary and junior secondary school (1-8), Secondary school and above (9th and above)
- * Marital status: (Married, Divorced/ Separated, Widowed, Single/ Never married)

1.10 Details of members of the household including head of the household

S. No	Age group	Sex		No of family members work on the farm full time	Family members who work part time work	Dependents	
		Male	Female			Male	Female
1	Children <10 years						
2	Children 10-13 years						
3	14-16 Years						
4	17-50 years						
5	>50 years						

2. Total land holding size of the household head

2.1 Do you own land? 1. Yes 2. No

2.2. If yes, how far is your farm from your home? ___ hours.

2.3 Please register land holding of the household in the last 12 months

S. No	Type of crop grown	Size in		Tenure status
		Timad	Hectare	
1	Sesame			
2	Sorghum			
3	Cotton			
4	Teff			
5	Finger millet			

Tenure status can be: 1) Own 2) Inherited 3) Rented in 4) Sharecropped in

2.4. If own land operated by others _____ Timad (_____ hectare)

2.4.1 rented out _____ Timad _____ hectare)

2.4.2 Sharecropped out _____ Timad (_____ hectare)

3. Total number of animals in TLU

3.1 Livestock holding of the household during the last 12 months

Species of livestock	Number owned	Number sold during the year	Income from sale	Purpose used from income
Ox				
Cow				
Calf				
Bull				
Heifer				
Horse				
Mules				
Donkey				
Goats				
Sheep				
Chicken				
Bee in Hive				
Others (specify)				

Note: purpose of the income from sold animals can be,

1. Purchase of farm inputs
2. Hiring labor
3. Household expenses in food, clothing and other supplies
4. For loan repayment
5. Purchase of live animals
6. Others specify

3.2 ploughing are accomplished by 1. Rented tractor 2. Rented oxen 3. Own oxen 4. Support from relatives 5. Rented and own oxen 6. Others specify

3.3. If accomplished by rent what is the price per pair of oxen in a day _____

3.4. What was the total amount of money paid for oxen or tractor rent during the last 12 months?

3.5 If accomplished by own oxen what was the number of oxen owned for draught purpose during the year? 1. One 2. Two 3. Three 4. Four 5. Five and more than five

4. Labor availability

4.1 Did you face shortage of labor during the year? 1.yes 2.No

4.2 Which of the following sources of labor have you used for your farming operations in the last 12 months?

NO	Type of crop	Sources of labor for Seasonal activity					Type of labor hired
		Plough and planting	Weeding	Harvesting Threshing	Transporting	Others	
1	Sesame						
2	Sorghum						
3	Cotton						
4	Teff						
5	Finger millet						
6	Others (specify)						

Note: Sources of labor can be 1. Family labor 2. Friends and relatives 3. Supports from PA 4. Labor exchange 5. Hired labor 6. Family and hired labor 7. Others (specify)

Type of labor hired can be, 1) Causal 2) Permanent 3) contractual 4. causal and contractual 5. Others (specify)

4.3 If hired labor, indicate about the rate of payment.

No	Seasonal activity	Condition of payment	birr paid for individual crops during the season				Total amount paid for labor in birr	Source		If credit indicate the source
			Sesame	Sorghum	Cotton	teff		Own cash	Credit	
1	Plough									
2	Weeding									
3	Harvesting									
4	Threshing									
5	Transporting									
6	Others (specify)									

Note: Rate of payment can be 1. Man/days 2. One month 3. One crop season 4. hilla (For sesame)

Sources of credit, 1. ACSI 2. Cooperatives 3. NGOs 4. Banks 5. Private moneylenders 6.Churchs 7. Neighbors 8. Iddirs 9. Iquubs 10. Others specify

4.4 On an average how many days of the month, excluding Sunday, did you spend for religious holydays and other cultural ceremonies _____

5. Extension contact

- 5.1 Do you get extension service? 1) Yes 2) No
- 5.2 If yes, for how long have you been getting the service? ____Years
- 5.3 Who provides the extension service? 1) Development agents 2) NGOs 3) Others, specify_
- 5.4 How frequently were you visited by development agents in the last 12 months?
Days /3 months_____

6. Participation of households in extension package program

- 6.1 Did you participate in agricultural extension package program in the last 12 months?
1. Yes 2.No
- 6.2 if yes, what was the type of the package you used? 1. Crop production 2. Animal rearing 3.Animal fattening 4.small-scale irrigation 5. Others specify_____
- 6.3. How did they provide you the technology? 1. In cash 2. On credit
- 6.4. If on credit, who was the source? 1. ACSI 2. Multipurpose cooperatives
3. NGOs 4. Bank 5. Private moneylenders 6. Others specify_____

7. Access to credit

- 7.1 Were you demanding for credit in the last 12 months? 1.Yes 2.No
- 7.2 Did you take any credit for production and consumption purposes during the last 12 months? 1.Yes 2.No
- 7.3 If yes, for what purpose, Amount and from which sources you borrowed?

S. No	Source of credit	Loan amount in		Purpos e of the loan	Rate of interest	Who borrow ed (husba nd or wife)	Loan perio d in mont hs	If repaid (Yes, No)	Numbe r of years credit used
		Cash	Kind						
1	ACSI								
2	Cooperatives								
3	NGOs								
4	Bank								
5	Private moneylenders								
6	Relatives								
7	Church								
8	Neighbors								
9	Iddirs								
10	Iquubs								
11	Others specify								

Note: Purpose can be, 1.Payment for hired labor 2.Purchase of fertilizer & seeds 3. Purchase of farm implements 4. Payment for rented oxen 5. Purchase of food 6.Purchase of livestock 7.Purchase of household goods 8. To start off farm business 9. Payment of taxes 10. Debt

repayment 11. Health expenses 12. Education expenses 13. Social ceremonies 14. Others (specify)

8. Risk taking ability of farm households

8.1 In your view, is borrowing from formal financial sources risky? 1. Yes 2. No

8.2 Did you give-up to take loans from formal lending organizations due to fear of risk in the last 12 months? 1. Yes 2. No

9. Constraints and difficulties faced by farmers

9.1 Are you member of farmer's multipurpose cooperatives in the area? 1. Yes 2. No

9.2 How far is your home from the nearest lending institution office? In hours _____

9.3 Were you borrowing from the formal sources in the last year? 1. Yes 2. No

9.4 If yes, did you repay it? 1. Yes 2. No

9.5 What is your view on the constraints and difficulties to access credit from the formal financial sources?

Constraints & Difficulties	ACSI Yes/ No	Cooperatives Yes /No	NGOs Yes/No	If others
Group lending				
Individual Collateral				
interest rate asked from borrowers				
Time of credit availability				
Repayment time				
Repayment period				
Non-membership of farmers multipurpose cooperatives				
Lack of opportunity to take a second loan				
Distance from lending institutions				
Working time of the institutions				
Working ethics and efficiency of the employs of the organization				
Preparing an application letter and filling different formats				

9.6 What is your perception about formal financial institutions?

No	Topic	Score	Agree	Neutral	Disagree
1	Female headed households are major targets of credit by ACSI				
2	Female headed households are major targets of credit by Cooperatives				
3	The very poor are the main credit targets by ACSI				
4	The very poor are the main credit targets by cooperatives				
5	The loan size from ACSI did not satisfy farmers needs				
6	The loan size from cooperatives did not satisfy farmers needs				
7	ACSI control loans not to be used for quite different ends				
8	Cooperatives control loans not to be used for quite different ends				
9	It is convenient to save in formal financial organizations				
10	Formal financial institutions encourage people to save				
11	Time and distance is a problem to save regularly in the organizations				
12	Sufficient interest rate is paid for depositors				

Part II Open ended questionnaire for group interview

1. Farmers perception of the institutions in saving mobilization

- 1.1 What are the methods of saving in your area?
- 1.2 What are the main problems affecting your saving decisions?
- 1.3 Do people save their money in formal financial institutions?
- 1.4 What are the methods used to encourage and inform people to save their money in their financial institution?
- 1.5 What is your view on these formal financial institutions in saving mobilization?
- 1.6 What is your perception on the difficulties that discourages you to save in the financial organization in relation to their working procedure?
- 1.7 Do savers in the formal financial institutions repay their loans than Non-savers? Explain your view.
- 1.8 Do you continue to save after repaying your loan? 1. Continued 2. Interrupted
- 1.9 If interrupted, what is the reason?

2. Perception on the interest rate levels

- 2.1 Do you feel that you are getting sufficient interest rate of return for your deposit?

- 2.2 What is your perception in the difference between the interest rate paid to depositors and borrowers?
- 2.3 How do you compare the interest rate you are asked by the different lending organizations? That is 2.4.1 Between formal institutions 2.4.2 Between formal and private money lenders
- 2.4 What do you feel on the different interest rate levels of these institutions?
- 2.5 Is there any organization that provide credit free from interest? 1.Yes 2. No
- 2.6 If yes, what is your perception on the interest free loans?

3. Perception on group lending and group responsibility for repayment

- 3.1 What is your perception on the aim of group lending?
- 3.2 What are the predetermined criteria for group formation?
- 3.3 Have you ever been unable to form a group for credit due to the criteria for group formation? 1.Yes 2.No
- 3.4 If yes, what was your alternative solution to satisfy your credit needs?
- 3.5 What do you feel about the responsibility of the group for repayment?
- 3.6 Does the group have any responsibilities other than loan repayment? 1. Yes 2. No
- 3.7 If yes what are they?
- 3.8 Which credit institutions are implementing this group lending system?
- 3.9 What is your recommendation for other institutions?

4 Perception of farmers on loan defaults

- 4.1 Have you ever thought credit as government gift or as one of the production resource? Justify your Perception.
- 4.2 Are you late to repay your loan? If yes why?
- 4.3 For whose source of loan did you give priority to repay? 1. ACSI 2. Cooperative 3. N.G.O 4. Private lenders 5. Others specify
- 4.4 Why? Specify your reasons.
- 4.5 If your debt totally not repaid, what were the major reasons/factors, which force you not to repay your loan/debt?
- 4.6 If not repaid on the due date, what actions did the formal lending institution take on you? What is your opinion on the action?
- 4.7 Do lending institutions collect their money on time? How do they collect? 1. In their office 2. Door to door at your house 3. Specify your opinion based on each formal financial institution.
- 4.8 Can you rank the lending institutions according their motivation to collect their borrowed money?
- 4.9 How do you evaluate the repayment procedure of each formal lending institution? 1. ACSI 2. Cooperative 3. NGo 4. Private lenders 5. Others specify

5 Farmers perception on the efforts made by formal financial institutions to reach the rural poor especially the very poor and women

- 5.1 Who are the target groups for credit delivery of formal credit institutions in your area? (Rank in order of importance).
- 5.2 What are your comments on formal financial institutions in addressing the very poor and women?

- 5.3 What are the criteria used to identify new borrowers by different formal lending institutions?
- 5.4 What is your suggestion on the criteria?
- 5.5 Who is responsible to identify new borrowers? Specify by lending institutions
- 5.6 What is your opinion in implementing the selection criteria of the institutions?
- 5.7 Do you feel that credit institutions satisfy the credit demands of the farmers?

6 Farmers perception in the general working procedures of formal credit institutions in the area

- 6.1 What is your opinion in the lending procedures of formal financial institutions?
 - a) Ability in preparing an application letter and filling different formats
 - b) Convenience of working time for the clients
 - c) Working ethics and efficiency of the officials of the institutions
- 6.2 What are your comments in service delivering process of formal financial institutions to their clients?

7. Farmers Perception of the loan size of formal credit institutions

- 7.1 Was the size of the loan you were provided in this crop season sufficient? 1. Yes 2. No
- 7.2 What was the maximum amount of money provided by each formal lending institution?
Specify by the purpose of the loan.
- 7.3 If you were not provided according to your demand, what was your alternative?
- 7.4 If your alternative were informal lending institutions, do they provide you sufficient money?
- 7.5 Was the interest rate of informal credit institutions affordable?
- 7.6 What was the range of the interest rate of informal credit institutions?