**1 INTRODUCTION**

* 1. **Background**

Ethiopia’s vast natural resources are untapped leaving large scope for development intervention to increasing capacities communities for sustainable livelihoods. However, there are serious issues on food security that has to be tackled in different scales by having effective policy and development initiatives. The approaches of development organizations vary and mostly target on reducing risks of rural communities and sustain their livelihoods. Food insecurity incorporates low food intake, variable access to food, and vulnerability- a livelihood strategy that generates adequate food in good times but is not resilient against shocks.

These outcomes correspond broadly to chronic, cyclical and transitory food insecurity, and all are endemic in Ethiopia. The main triggers of transitory food insecurity in Ethiopia are drought and war. Season ability is a major cause of cyclical food insecurity. Structural factors contributing to chronic food insecurity include poverty (as both cause and consequence), the fragile natural resource base, weak institution (notably markets and land tenure) and unhelpful or inconsistent government policies. It is known that Agriculture is not sustainable in some part of the ANRS because of natural disasters or the shortage of rainfall, therefore to solve such problems; we have to propose a strategy for economic diversification. (Awoke, 2004). North Shoa Administrative Zone is found in ANRS. It is part of the central highlands of Ethiopia, with a long history of early settlement and agricultural cultivation. Due to high population pressure (both human and livestock), intensive cultivation, overgrazing, steep slopes and relative high rainfall, most highland parts of the Zone have suffered from extreme degree of environmental degradation.(Zenebework, 2001). The ANRS is the most vulnerable where 52 districts of the 114 districts in the region has been food insecure. Among these Districts, Menze Mama Midir District or shortly, Menze Mama District, is first. The population size of the district is 106,738 of which 99,703 are dwellers of rural and 7035 in urban; on the other hand, 83,478 are dwellers of rural and 7,704 live in urban (Solomon, 2007). Out of the rural dwellers 16,527 males and 18,518 females are chronically food insecure (Mulugeta, 2011). However, community approach development approaches have played significant role in the socioeconomic development of disadvantaged groups and the rural poor. Creating community assets, providing credit, promoting saving through training communities on income generating activities.

One such important development program has been the Food Security Project (Cr.3646) which is known as World Bank Food Security Project (WBFSP). The Food Security Project is financed by the World Bank (IDA) credit, grants obtained from the governments of Italy and Canada as co-financers of the project and matching fund allocated by the Ethiopian Government. The original objectives of the WBFSP are to build resources base for poorer rural households, increase their employment and incomes, reduce their real cost of food, and improve their nutritional levels especially for children under five years of age, pregnant and lactating women. . The project consists of five complementary components that lead to the achievement of intended development objectives. The components are: Support to community through provision of grants to beneficiary communities for carrying out community initiated income generating activities (IGA) or Asset building activities at community or household levels and promotion of community based child growth promotion initiatives, institutional capacity building, food marketing initiatives, communication interventions, and project administration and monitoring.

The project is expected to address a major underlying cause of food insecurity at the community and household level, by providing grants to income and build assets. The project is built on the concept of Community Driven Development Approach. The key element of the approach emphasizes the participation, ownership and role of community in problem identification, prioritization, propose solutions and play active role in implementation of Community Driven Development (CDD). The project has a life of six years and under implementation in four regional states of Ethiopia viz., Amhara, Tigray, Oromia, and SNNPR.

 The WBFSP has been implemented in the ANRS since 2002/3. From the above food insecure HHs in the district, 4349 males and 2117 females are beneficiaries /borrowers of the WBFSP (Mulugeta, 2010). The grant which is as a form of loan has been extended through the project to resource constrained HHs the poorest of poor empowered them to help improve their resource base, income and livelihoods in general.

* 1. **Statement of the Problem**

In effort to improve the precarious food situation existing in Ethiopia, expanded and economic use of credit in yield increasing new and improved technologies are crucial issues of the day which need to be considered both by policy makers. These necessary ingredients in the development process of subsistence agriculture need a considerable financial input on the part of the farmers. However, there exists no significance margin of income that can be channeled into the sector for such development activities. Thus, here comes the importance and significance of the availability of loan to bridge the gap between owned and required capital to finance these technologies for sustainable income.

Menze Mama , found in North Shoa zone, is part of the central highlands of Ethiopia, and it has a long history of early settlement and agricultural cultivation.. Due to the highly eroded and small size land per HHs, the agriculture is not promising, and this is put down to the low productivity of the district. The HHs have been chronic and transitory food insecure. NGOs do have significant contributions to economic development, through availing grants to communities, capacity building, education and communication, natural resources rehabilitation, investment on health care, etc.

One of the over-riding of the World Bank Food Security Project (Cr.3646 ET) was to stimulate and support private sector initiatives among men and women to the greatest extent possible, with beneficiaries able to develop their own proposals for loan (revolving fund). The project therefore aims the Ethiopian Government to device strategies and policies in involving NGOs to address food insecurity in the country and to alleviate poverty of the district. It is vivid that the role of World Bank Food Security Project contributed to the reduction of food insecurity of the population of the district. And hence it aimd to accelerate sustainable development to end poverty via provision of the small loan from the project for income generating activities. However, determinants/factors influencing loan repayment performance of the project’s beneficiaries of the district even in the good harvesting years are not yet studied. Hence, this project attempted to investigate the loan repayment performance given in the year 2007 by the WBFSP through the district’s governmental offices (WDC-Woreda Development Committee), Kebelles RUSACCOs and KDCs (Kebelle Development Committes).

# 1.3 Objectives of the Study

Saving and credit are integral parts of development, which enable people to be engaged in economic activities that enhance self-reliance. Saving and credit schemes increase the productive potential of farmers in rural area. Credit plays a crucial role in agricultural production. It is said to be the lifeblood of agriculture and hence, the need for adequate farm finance is obvious. To generate a substantial income from agricultural production, the provision of credit for rural poor must be associated with the provision of technical advice and loan advanced should be repaid in order to have an improvement in living condition year after year. Therefore, the general objective of this study was to investigate the factors influencing World Bank Food Security Project loan repayment performance of beneficiaries in the District.

 The specific objectives are:

* To identify socio-economic, and institutional factors affecting loan repayment performance;
* To suggest appropriate and remedial measures and areas of emphasis in collection, and management of the revolving funds through the community.

## 1.4 Significance of the Study

In countries like Ethiopia, where agriculture is the dominant sector of the economy, the level and speed of economic development is determined to a great extent by the growth of the agricultural sector. This sector is composed of small, fragmented and subsistence farming families. Therefore, agricultural growth implies the growth of agricultural productivity from land augmenting technological change and appropriate economic incentives and assistance to these families. In most cases smallholder farmers have limited or no working capital to purchase inputs to improve their productivity and position in the market economy. In Ethiopia context the recurrent drought and famines are clear indicators of fragile nature of agricultural production and the magnitude of the problems in which the country finds itself. The reasons include: poor and backward technology; limited use of modern inputs; lack of transportation and facilities; inadequate extension and credit facilities, natural calamities (Assefa and Heidhues, 1996). The availability of farm credit, therefore, becomes a vital component of the modernization of agriculture. In considering this fact the government has extended credit facilities from its budget and NGOs to farming households to narrow the gap between the required and the owned capital to use biological and mechanical technologies.

However, the fund extended for this purpose should be used for the intended goal and finally repaid to the credit institution or organization in order to have visible, strong and sustainable agricultural credit schemes and efficient operation mechanisms year after year. The borrower should settle the amount borrowed plus its interest rate to the lender in order to get credit regularly or to make revolving fund in their respective kebelles as the World Bank Food Security Project’s loan. Contrary to this fact, in most cases repayment performance of projects and programme credit have been very poor over the last six years. Low repayment performance discourages the lender to promote and extend credit to large and fragmented farm households.

In Ethiopia, literature is lacking or little is known about the level and nature of projects loan repayment performance of poor farmers (beneficiaries of the project). Therefore, a study is required on this and other aspects of credit so as to device effective and appropriate Projects credit policies. This study is expected to draw important recommendations which would be of great importance both to policy makers and development institutions dealing with agricultural credit delivery. A study of the factors affecting loan repayment performance is vital because it provides information that will enable effective measures to be undertaken to improve loan repayment performance and the success of rural women credit programs. It will also enable lenders such as non-governmental organizations and policy makers to have knowledge as to where and how to channel efforts in order to minimize loan defaults. The study is also expected to contribute towards better credit administration with possible pay-off in improved loan repayment.

Firstly, this study provides information in determine and identify factors that affect loan repayment performance of beneficiaries of the Project in the district to use as the basis for local level planning public officials on the gaps community of the district have. Not only this but also it enables to mitigate the gap effectively and efficiently by the existing food security programs. Especially, providing credit to the poor farmers of the district. Moreover, the study is crucial in providing input for further investigation in the area.

Secondly, the output of this study will mitigate the gap in providing relevant, reliable, and up to date research findings to government, NGOs, and other policy makers of development agent. That is, an analysis of factors impeding smallholders’ loan repayment performance would help policy makers to formulate successful rural development programs. The formulation of successful credit policies and programs is of paramount importance because it enables the policy makers to allocate scarce resources for the development of the basic sector of the economy as well as to effect repayment according to agreement between lenders and borrowers. In order to formulate successful strategies, the social, economic and other variables influencing the credit acquisition and loan repayment must be studied.

 Lastly, the study is essential as a good indicator to know the level of poverty and proportion of the community falling in chronic food insecurity in the district.

**1.5 Scope and Limitations of the Study**

Studies carried out in many developing countries have pointed out that farmers are reluctant to provide accurate information on the variables such as income level, farm size, age, livestock number etc., due to the fact that taxes and other development contributions are distributed among them based on these factors. This study is not free from these limitations. But to mitigate this problem as much as possible it was tried to mitigate this problem as much as possible it was tried to convince the beneficiaries individually and collectively about the objective of the study. In addition to this, enumerators were selected from the locality and extensive discussions were made with them to convince the farmers of their area. Despite all these efforts, the study cannot be expected to yield definite answers to the multitude of questions that may be raised by the World Bank Food Security Project Sustainable Development Department Credit Professionals due to the limited number of beneficiaries and non- beneficiaries of the project were interviewed at single contact as well as the limited time devoted to the study. Therefore, there is a room for refinement through repeated studies in the future.

**1.6 Organization of the Project**

The remaining parts of the thesis are organized as follows. Chapter two presents review of literature that includes definitions of concepts, the importance of credit, kinds of financial institutions in Ethiopia, and empirical studies on loan repayment performance. Chapter three presents the research methodology employed in the study. Results obtained are presented and discussed in detail in chapter four. Finally, chapter five presents summary, conclusions and recommendations.

**2 LITERATURE REVIEW**

**2.1 Definitions**

Beckman and Foster (1969) defined credit as the power or ability to obtain goods or services in exchange for a promise to pay for them later. In other words, it is the power or ability to obtain money, through the borrowing process, in return for a promise to repay the obligation in the future. According to these authors, credit represents the actual or prospective debtor’s power or ability to affect an exchange by offering his promise for future payment. Credit is necessary in a dynamic economy because of the time that elapses between the production of a good and its ultimate sale and consumption. The risk in extending credit is the probability that future payment by the borrower will not be made. Futurity is thus a basic characteristic of credit and risk is necessarily associated with the time element.

Regarding financial institutions, there are private and governmental organizations, which serve the purpose of accumulating funds from savers and channeling them to individuals, households and businesses, needing 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. Formal financial institutions can be defined as institutions that are regulated by central bank's supervisory authorities for licensing and credit policy implementation. They usually use legal documents or the legal system to enforce contracts.

Formal loans are those disbursed by financial institutions that are set up legally and engaged in the provision of credit and mobilization of savings. In the Ethiopian context, these institutions are regulated and controlled by the National Bank of Ethiopia (NBE). On the contrary, informal loans are those provided by individuals, organizations and institutions that operate outside the legal banking system and control of the National Bank. Bekele (1985) indicated that informal credit sources are categorized as commercial (those who lend money on short-term basis to obtain profit) and non-commercial (lenders that generally include friends, relatives and neighbors). Mutual help associations include *Idir, Iqqub*, modern cooperatives, NGOs, etc. Popiel (1994) defined informal finance as the one that comprises of all lawful but unregulated activities, such as rotating and non-rotating savings and credit associations (ROSCAs), money lenders and money collectors and other providers of retail financial services. *Idir, Iqqub* and *Arata abedari* can be incorporated into the above definition in the Ethiopian context. Institutional arrangements provide strong social security. For instance, *Idir* is the most important exemplary institution. Through *Idir*, funeral processes are facilitated and closely attended, financial expenses are covered, and multiple forms of solidarity and support are offered to the mourning family. Those cattle owning members mutually support each other through *Idir. Idir* enables community members to construct residences with fewer burdens. *Idir* allows transporting their sick members and helping in saving lives. Members of *Idir* use their daily lives in addition to extending extra mutual support during funeral and mourning occasions. For members in the basic neighborhood, *Idir* is equally open to all village community members without any status differentiation.

The religious belief institutions are basically meant for the spiritual gratification and social security of the community in their respective denomination. *Mahber* (Cooperative) and *Senbete* strengthen social cohesion and are also the basis of mutual support. The poorest and weak are socially secure through their institutional affiliations in the respective religions. (Wolde- Selassie, 2004).

**2.2 The Importance of Credit**

Credit is the key input in every development program, this is particularly true for rural development because so long as sufficient credit is not provided to the development programs of poor sections of the society, the goal of development cannot be achieved. Access to capital in the form of either accumulated savings or a capital market is necessary in financing the adoption of many new agricultural technologies (Feder et al., 1985).

 The importance of credit facilities to smallholders of less developed countries has been underlined by several authors (Adams and Graham, 1981; FAO, 1996; Gonzalez-Vega, 1977; Pischke, 1980). Governments of less developed countries and aid agencies have extended a large amount of money in the form of agricultural loans. The motivation has been the belief that loans are an essential part of various input packages that are prescribed as part of agricultural investment projects designed to introduce modern technologies and thus stimulate change and growth in agriculture.

Kumar et al., (1978) indicated that the need for credit in the case of majority of cultivators arises from inadequate savings to finance various activities on their farm. Moreover, while their income accrues during limited period of the year, their expenses are spread throughout the year. This implies that expenditures on inputs have to be incurred much in advance of the income from resulting outputs. Producers meet these expenditures out of their past savings; and when these savings fall short of the requirement, they borrow.

Studies undertaken in Ethiopia show that credit provision to small farmers increases their productivity and improves their standard of living. For instance, Assefa (1987) reported the need for the expansion of rural credit to all areas of the country. Likewise, Berhanu (1993) and Getachew (1993) pointed out the need for agricultural credit to increase productivity and accelerate adoption rates.

As a result of high population pressure in rural areas of developing countries like Ethiopia, bringing of additional productive land under cultivation is difficult, implying the need of improving farm level productivity through intensification. This involves, as pointed out by Jama and Kulundu (1992), the use of improved farm inputs such as fertilizers and selected seeds besides improved tillage and husbandry practices. These inputs are not available on the farm and some farmers are not able to purchase them due to their meager resources. Moreover, most of the commercial inputs are expensive and hence smallholder farmers cannot afford to buy from their own cash earnings. It is, therefore, generally acknowledged that rural credit can help improve smallholders' farm productivity through use of purchased farm inputs.

Generally, credit removes a financial constraint and helps accelerate the adoption of new technologies, increases productivity, and improves national and personal incomes. In addition, it constitutes an integral part of the process of commercialization of the rural economy and a convenient means of redressing rural poverty (MOA, 1995).

**2.3 Kinds of Financial Institutions in Ethiopia**

**2.3.1 Formal financial sector**

The formal financial institutions operate in areas where they perceive lower risks, where enforcement and transaction costs are least while the informal financial sector operates in areas and sectors where the former financial institutions fail to provide lending and deposit services. The formal financial institutions include the National Bank of Ethiopia (NBE), Commercial Bank of Ethiopia (CBE), Development Bank of Ethiopia (DBE), Construction and Business Bank of Ethiopia (CBB) and the recently proliferating private commercial banks like Dashen, Wogagen, Abysinia, Awash International, Nib International, etc; and the nonbanking financial institutions like the public and private insurance companies (Ethiopian Insurance Corporation (EIC), NICE, NYALA, Africa, Awash, etc.). The Ethiopian formal financial sector had in the past been subjected to exogenous credit rationing; i.e., credit rationing which is legally imposed through heavy regulation such as interest rate ceilings and sectoral credit allocation.

At present, however, the sector is operating through endogenous credit rationing principles and hence the financial shortage that the sector used to suffer from before government and policy changes took place, has been mitigated. Currently, financial intermediation by the formal financial sector seems to have grown as more financial sector operators have joined the sector. However, the poor and the marginalized that are operating as peasant farmers and/or informal sector operators do not access credit from the formal financial institutions unless the government intervenes.

 **2.3.2 Informal Financial Sector**

The bulk of the population falling in the low to medium income-bracket in Ethiopia secures lending and deposit services from the informal financial sector. The formal sector is urban and income biased as well as too procedural particularly for the poor and uneducated majority of the country’s population. It is estimated that 78% of the total agricultural credit in Ethiopia stems from the informal financial sector (Dejene, 1999). According to the same source, of the surveyed households 66% secured financial services from friends and relatives, 15% from money lenders and the rest (19%) from other sources. The same source indicates that only 1% of the households possessed bank accounts. In this respect, Solomon (1996) pointed out that the informal financial institutions are by far the most important sources of loanable funds both for the rural and urban population as compared to the formal financial sector. Similarly, Dejene (1993) underlined how inaccessible the formal sector is to the majority of the Ethiopian population. More specifically, he noted that the bulk of the Ethiopian population makes little or no use of the formal savings and lending institutions. In a country where more than 80% of the population lives in rural areas, the few banks and credit associations that are presently operational are limited to urban areas. The informal financial sector in Ethiopia comprises mainly of *Iqqubs* (rotating savings scheme), *Idirs* (traditional insurance scheme), arata-abedari (usurers), etc. This sector is neither regulated nor counted for in the country’s financial intermediation process. The sector, however, provides by far the greatest services to the bulk of the population with flexible financial innovation and terms to maturity. It provides timely and user- friendly loans both in size, rates of interest (save usurers' rates) and terms to maturity. As opposed to the formal financial system, which is typically known for its high costs per transaction, bureaucratic lending procedures, elaborate paper work, high collateral requirements and delays, the informal financial sector provides better services to small-size loan demanders with less cumbersome procedures and at lower transaction costs (Dejene, 1993). Though, the informal financial sector is important to most informal sector operators and the farming population, government support to the sector has been until recently very low. Nowadays, micro enterprise and informal sector promotion is getting serious consideration and support from policy makers as it is believed that the sector generates sizeable self–employment and alleviates poverty.

**2.3.3 Micro Financing in Ethiopia**

Both formal and informal financing targeted at food security and poverty alleviation have been pursued by local and international NGOs. Before the promulgation of proclamation No. 40/1996 that currently serves as a basis for the legal and regulatory framework for micro– financing, all micro-financing operations by local and international NGOs including the Market Town Development Program (MTDP) were run under the legal provision of proclamation No. 138/78, which provides for the establishment of thrift and credit cooperatives. With the perception of policy makers regarding the promotion of the informal sector, it was deemed necessary to streamline financial, legal, and technical support to the sector. In response to the pressing financial, infrastructural and legal demands of the micro and small enterprise sector, the Ministry of Trade and Industry drafted a strategy paper and the Federal Government promulgated proclamation No. 40/1996, which provides for the Licensing and Supervision of the business of Micro Financing Institutions to enforce the micro –financing proclamation. The micro financing proclamation was issued in order to provide for a legal regime of micro financing institutions within Ethiopia’s monetary and financial policies. Besides, it was meant to fill the missing gap that the monetary and banking laws of the country did not provide for micro financing institutions that cater for the credit requirements of peasant farmers and micro-level business operators. Most of the micro financing schemes in Ethiopia provide loans to organized members, who are not required to put up physical collateral but operate in a group mechanism in which risks of non-repayment are transferred to the group. Essentially, most micro financing schemes in the country have, with slight modifications, adopted the Grameen Bank micro credit mechanisms (Fantahun, 2000). Nowadays, there are quite a number of micro-financing institutions that operate both in

regions and the capital city providing loans and technical support to organized micro enterprise and informal sector operators. Since the issuance of proclamation 40/1996 that provides for the establishment of microfinancing institutions, sixteen microfinance institutions with a total paid-up capital of Birr 9.8 million have been legally registered and licensed until end of April 2000. Wolday (1999) reported the outreach of 11 micro financing institutions and stated that these institutions have all together reached a client population of about 408,480. These microfinance institutions are Dedebit Credit and Saving Institution (DECSI) of Tigray (with 52% of countrywide client size), Amhara Credit and Saving Institution (ACSI) of Amhara (29%), Omo Micro Financing and Saving Institution (OMFI) of Southern Region (9%), Oromo Credit and Saving Institution (OCSI) of Oromia (6%), Sidama Microfinance Institution (3%), Asser Micro Financing (0.4%), Specialized Financial and Promotional Institution (SFPI) (0.4%), Africa Village Financial services and Buussa-Gonofaa Micro Financing (Wolday, 1999). The micro financing services provided in Ethiopia far outweigh the client base served by those institutions licensed under proclamation No. 40/1996. Leaving aside the many thousands of poor Ethiopians who are served by the informal financial sector, which is usually, unrecorded and unregulated, one can look at the large client size, which is served by the Market Town Development Program (MTDP) in urban Ethiopia. The MTDP is a project initiated in 1990 following an agreement between the Ethiopian government and the World Bank (IDA). The program has been operational since 1994. Initially, 16 towns (10 in the Oromia National Regional State, 4 in the Amhara National Regional State and 2 in the Southern Nations Nationalities and Peoples Regional State) were targeted for microcredit services to the poor. By the end of 1997 the number of towns reached 59 (16 in Oromia region, 21 in Amhara region, 15 in Southern Nations Nationalities and Peoples Region and 7 in Tigray) (Tamiru et al., 1998). Between 1994 and 1997, this credit scheme has served over 34 thousand clients (65% women) and a total of 50.2 million Birr has been disbursed at 15 % interest rate and overall repayment performance was 92% (Mengistu, 1997).

**2.4 Empirical studies on loan repayment performance**

Knowledge of determinants of loan repayment is undoubtedly important for it provides information to be the lender on the incentives available for the borrower to comply with repayment schedules. Loan repayment performance is affected by a number of socioeconomic, institutional and natural factors. Some of which are believed to impact on repayment negatively while others have positive impact. Various studies have been carried out concerning loan repayment performance of borrowers in several countries. The following presents the findings of studies on loan repayment performance.

Major socioeconomic variables that affect credit repayment include education, age of household head, family size, gender of household head, etc.. Family size is expected to affect loan repayment performance positively. This is because farmers with more families may have more labor force for more diversified sources of income. For instance, Schreiner and Nagarajan (1997), in a case study in Gambia, reported that large households are better in credit risks. Where as Bhenda (1983) in his Indian case study, revealed that households with large family were more prone to defaults. Also, Kashuliza (1993) reported a negative but statistically insignificant relationship between household size and repayment performance.

Educational level of household head is another socioeconomic variable that affects loan default rate both positively and negatively. For instance, Mengistu (1997) conducted a study on the Market Town Development Program (MTDP) Credit Scheme of Bahir Dar and Awassa towns using a binomial probit model. The study indicated that education has positive impact on loan repayment. In addition, Ike (1986), in his economic and financial analysis on the problem of loan default in Nigeria recommended that to improve loan recovery, educational level of borrowers should be improved. On the other hand, Matin (1997), in his study on loan repayment performance of borrowers in Bangladesh obtained a significant and negative relationship between education status of the household and loan default rate.

Another socioeconomic variable that affects loan repayment performance is age of household head. Logically as age increases the repayment capacity of borrowers is expected to increase. This is because through time farmers acquire experience and knowledge of credit uses. Moreover, older farmers are in a better position to accumulate wealth than younger ones. This logical expression was supported by Berhanu’s (1999) result. According to him the age of a borrower has positive impact on full loan repayment. On the other hand, even though the coefficient showed absence of disparity between the categories of borrowers, there was a negative relationship between age of borrower and repayment performance (Bekele, 2001).

 As far as gender of household head is concerned, an empirical study made in Guyana by Hunte (1996) using logistic regression model showed that male borrowers generate low default risks, minimum or low credit rationing (giving nearly the amount the borrower requested or demanded) and high repayment performance. Whereas, the finding of Yaqub (1995) showed that women were better than their male counter parts in loan repayment performance.

Another socioeconomic variable that affects loan repayment is farm size. Belay (2002), used maximum likelihood estimates of the logistic regression model and showed that farm size was important factor influencing the loan repayment performance of rural women in Eastern Ethiopia. That is, the total farm size, which is a proxy for a host of factors including wealth and income, has a significant and positive impact on loan repayment performance. Similarly, Sharma and Zeller (1997) in their Bangladesh case study revealed that land holding had negative and significant effect on the delinquency. Likewise, Matin (1997) by his study of repayment performance in Grameen Bank, reported that the total operated land holding of the households was negatively associated with default after a certain level.

 Livestock ownership is another socioeconomic variable that affects repayment performance. Belay (1998) in a case study at Alemegena District (Ethiopia) found out a significant positive relationship of livestock ownership and loan repayment performance of farmers. Accordingly, animal production was found to be important source of cash income during sharp fall of crop prices. Also, Bekele (2001) in his Ethiopian case study using logit model revealed that value of total livestock holding has positive impact on loan repayment performance of smallholder farmers. According to the study, farmers who owned more livestock were able to repay their loans even when their crops failed due to natural disaster.

With regard to the relationship between off-farm activities income and loan repayment performance, Sharma and Zeller (1997) reported that off- farm income negatively influenced loan repayment performance of group-based borrowers of Bangladesh. According to the authors, off-farm income might increase willful default, as income was generated from various sources, the borrowers might become reluctant and might not give more emphasis to loan repayment. Similarly Bekele (2001), in his Ethiopian case study, revealed that off-farm income influenced the loan recovery of farmers negatively. According to him, larger proportion of defaulter households participated in off-farm activities than the non-defaulters. Households who exercise off-farm activities probably gave less attention to farm affairs as income was generated from different angles. In other words, households who generate income from off-farm sources tend to be will full defaulters, because the punishment, which could be inhibition of access to credit in the following season, may be less painful to them as they are less dependent on farm activities. The other possible explanation is that households who take part on off-farm activities may divert input loans to supplement the off-farm business.

Institutional variables were other factors, which could affect loan repayment performance of smallholder farmers. Possible institutional factor that affect loan repayment include extension contact, source of credit, loan amount etc. As far as source of credit is concerned, Miller (1997) indicated that the principal reasons for some loans not to be repaid are: borrowers anticipate a change in credit policies or because they lack confidence in the ability of credit institutions’ to provide credit in the following year. Wenner (1995) stated that, formal lenders find difficult and costly to ascertain accurately the likelihood of defaults; and monitor closely how borrowers use funds and what technologies they choose for project implementation. Thus, borrowers may not take actions that make repayment more likely (moral hazard). Weak legal system, lack of secured collateral, and pervasive views that government bank loans are patronage magnify loan enforcement costs for formal loans. In contrast, informal lender faces substantially lower screening and monitoring costs because of social proximity and multistranded relationships with clients. Thus, credit obtained from informal sources has high likelihood of being repaid than credit obtained from formal sources. For instance, Bhende (1983) reported that defaults were endemic in institutional credit; they were infrequent in informal credit. Absolutely speaking, the largest defaulters were those households who have borrowed most from institutional sources.

Loan amount is also another prominent factor that affects loan repayment performance. Vigno (1993) in a case study of Burkina Faso stated that large loan amount receivers were better payers than fewer amounts of loan receivers. This result is in complete agreement with that of Bekele et al. (2004) who in a case study of Ethiopia using logit model, stating that farmers who took larger loans had better loan repayment performance. According to them, this could be attributable to the effectiveness of local leaders in screening loan applications. The results of Belay (1998) also strengthen the finding of negative relationship between loan default and loan amount. Similarly, Sharma and Zeller (1997) used Tobit model and found that, in Bangladesh the grater the loan size, the greater the probability of unwilling default. This was because in the event of project failure, the borrower or group of borrowers will find it more difficult to meet repayment obligations out of their personal funds. Berhanu (1999) also reported that loan size contributed to reduction of the probability of full loan repayment in Ethiopia.

Different researchers emphasized the influence of the frequency of farmer’s contact with development agents on loan repayment performance. Logically, the higher the linkage between farmers and development agents, the more the information flow and the technological (knowledge) transfer from the later to the former. Therefore, the farmers who have frequent contacts with development agents are likely to settle their debt timely as opposed to those who have no or less contacts. Jama and Kulundu (1992) analyzed small farmers’ credit repayment performance in Kenya and found that, inadequate supervision and advice to farmers were positively related to the proportion of loan diverted. The proportion of loan funds diverted to non-intended purposes was also positively related to the proportion of arrears on loan given to the farmers and was significant at 5 percent level. Similarly, Belay ( 998) also reported that, those farmers who made frequent contact with development agents were those who paid their loans back to the lenders in time where as those who had less or no contact were defaulters.

 **2.4.1 World Bank Food Security Project Loan Repayment Performance in**

 **Amhara Region and in Menz Mama District**

The Food Security Project (Cr. 3646 ET) is being carried out with long term loan from the IDA, and grant from Canadian and Italian Governments. The project is built on the premise that the best way to strengthen the rural poor is to assist them with the means to make themselves strong and help them to make responsibility for making their own development decisions (FDRE, 2002). The design of World Bank Food Security Project is based on government food security strategy. This project is designed under the national food security strategy prepared in 1996 which is up dated in March 2002 (FDRE, 2002). The project is built on the concept that the best way to strengthen men and women is to assets them with the means to make themselves strong and help them to take responsibility for making their own development decision .The project therefore focus on helping community do things them self and empowerment communities and households to build their asset and income. It has three overriding objectives: to increase access to food for poorer rural households and all their members by and improving their resource base and increase their income and employment, implementing community based chilled growth promotion program, and reducing the high food marketing margins between surplus and deficit region. To achieve this aims fund for the project will be available through the component described below. These components allow number of activities within the regional food security program to be under taken.

The majority of project fund will flow through the district to the *Kebelle* and are intended to fund projects generated by the individuals and groups within the community. Community in this project refers to any group of individuals with common interest found within the village. It may be for example group of 5 or more farmers, a community based organization or cooperative. While proposals may be generated that benefit the entire community.

The project has several innovative features it will be important to make sure new approach work in limited areas before being expanded to wider areas.

In the ANRS the project has been financed for 33 districts. In the 33 districts the project has 151,383 HHs (beneficiaries) from 2002 to 2009 203,446,972 ETB was financed loan from the project. In all these districts from 2002 up to 2009 there are 101,872 males and 49511 females that have been beneficiaries of the project. Of these male constitutes 67 percent and female constitutes 33 percent. The following table shows that the loan of WBFSP to be repaid and repaid by the beneficiaries of the respective districts up to July 2009 in ANRS.

**Table 1 Loan repayment performance of the WBFSP in ANRS as of June 2009**

|  |  |  |  |
| --- | --- | --- | --- |
| Districts | To be repayed | Repayment June2009 | Rank |
| Lasta | 1171979 | 743,799 | 7 |
| L/Gaynt  | 6127494 | 4,483,942 | 11 |
| T/Gaynt | 6526731 | 2,180,607 | 20 |
| M.Gera | 3705372 | 2,603,716 | 5 |
| M. Mama | 4659017 | 1793134.7 | 12 |
| D/Zuria | 5890980 | 1,649,474 | 27 |
| Jama | 5071674 | 4,666,030 | 14 |
| Worilu | 4087914 | 2,354,538 | 17 |
| Enbsie | 5087425 | 4,520,526 | 6 |
| Goncha | 3506350 | 3,170,626 | 1 |
| Dabat | 4231606 | 2,525,839 | 21 |
| Adiarkay | 2223056 | 959,420 | 23 |
| Debark | 3638600 | 2,116,594 | 10 |
| Gubalafto | 3774866 | 2,410,756 | 4 |
| Borena | 3534219 | 2,766,847 | 9 |
| Albko | 2382420 | 2,063,634 | 13 |
| Ar/ Fursi | 2316000 | 827,206 | 16 |
| W/Belessa | 1179406 | 559,670 | 28 |
| Gishe | 674442 | 303,129 | 25 |
| Bugna | 3463900 | 282,049 | 32 |
| Telemt | 575832 | 250,134 | 29 |
| Legehida | 1157500 | 404,397 | 30 |

Source: Yared (2010).

The amount of matured loan (what is to be repaid) of the project in the region is amounted to be 95,564,306 ETB and the amount of repaid loan from beneficiaries is 55,143,810. Out of the repaid loan Birr 21,163,804 has been refinanced to the poor farmers (Yared, 2010).

 It is envisage that in Menze Mama District out of 20 *Kebelles* in the District. Out of them 19 *Kebelles* are food insecure. Out of the 19 food insecure *Kebelles* the project were designed to support 18 *Kebelles* in providing loan for the last 6 years as shown in the table below.

**Table 2 The amount of credit extended to Menz Mama district over the years, 2003-2009**

|  |  |  |  |
| --- | --- | --- | --- |
| Serial no. | Loan disbursed (Year)  |  Beneficiaries   | Amount of Grant given as loan to the District (in ETB)  |
| Male  | Female | Total  |
| 1 | 2003  | 861 | 401 | 1262 | 1014072 |
| 2 | 2004 | 1332 | 670 | 2002 | 1686978 |
| 3 | 2005 | 863 | 271 | 1134 | 1344500 |
| 4 | 2006 | 357 | 154 | 511 | 705450 |
| 5 | 2007 | 336 | 194 | 530 | 780500 |
| 6 | 2008 | 351 | 253 | 604 | 972550 |
| 7 | 2009 | 249 | 174 | 423 | 684000 |
| Total  |  | 4349 | 2117 | 6466 | 7188050 |

Source : Menz Mama Midir District Main Office of Agricultural Office (2011)

The project has been brought a great change in improving the wealth status of the beneficiaries in community. The Project has been working with different stakeholders (NGO and governmental offices/sectors) in making integration to graduate the beneficiaries from Food Security as well as from Safety Net Program to reduce poverty of the district. Now the Project has established RUSACCO to strengthen the saving and management of the revolving loan in their respective Kebelles.

Any activity that increases asset and incomewill be the primary and predominant fund. It will be used for any activity that leads to an increase in income or asset of the community. It is recognized that option within the food insecure districts are limited. It is also recognized that there is un regenerate need for off farm income generating activity. Communities will require assistance in identifying viable option .It is recommended that support be provided for this. The fund will be available for activity that benefits the community as a whole as well as activity that benefit specific groups within the community. The project in visages that proposals will be prepared by wide variety of groups including : groups of 5 or more people who come together to achieve a common aim, a cooperative, a community based organizations, women's group, the Keble sub-committee on food security for those activities that benefit the Keble as a whole. It is expected that fund will be used for activities associated with both publics and a private sector. The project will be able to stimulate private sector involvement in areas that have traditionally been the preserve of the public sector.

In the District, the project was started in the year 2002 in nine *Kebelles.* In 2007, the Project has added 9 *Kebelles* and then 18 *Kebelles* has been used as beneficiaries of the loan. The Project makes difference from others projects and or programme in that it has decentralized administration budget for the *Kebelles* it has been dealing with. Up to now, as a grant (loan) there has been numbers of beneficiaries 4,349 male and 2,117 females who used ETB 7,188,050 as credit so as to improve their asset creating and food consumption through increasing their income increasing activities. In the Project, women’s participation is 32.74 percent. The total amount loan disbursed in the district is 7,188,050. From the disbursed loan 2,351,919 ETB (as principal 1,793,134.7 and as interest 558,784) has repaid by the beneficiaries; and the performance of loan repayment in the district is 41.55 percent. The number of households who repaid their full or partial loan is male 4,349 and female 2,117. Out of the repaid loan it has been refinanced 1,351,500 ETB for male 582 and female 296. The projects loan performance in the district is shown in Appendix 2.

**3 REASERCH METHODOLOGY**

The first section of this chapter describes the overview of the study area. The sampling design and sample size are presented in section two. Section three presents type and method of data collection and source. Section four discusses the method of data analysis. Section five describes working hypotheses and definitions of variables.

**3.1 An Overview of the Study area**

**3.1.1 Location, soil and population**

The Amhara National Regional State (ANRS) is one of the states of the Federal Democratic

Republic of Ethiopia. The ANRS is located in the Northwestern part of the country between 8045' and 13045' North latitude and 35045'and 400 25' East longitudes. The boundaries of the ANRS adjoin Tigray in the North, Oromia in the South, Afar in the East, Benishangul Gumuz in the South West, and Sudan in the North West. The region is administratively divided in to 12 zones and 164 districts. Menze Mama District of North Shoa zone is located in the North East of Addiss Ababa (Figure 1). It is located about 70 km west of the main road from Addiss Ababa to Desie and about 254 Kms far from Addis Ababa–the central city of Ethiopia. Menze Gera, kewet, Moja and Menze Lalo districts borders the district from North, East, South and West respectively. The total area of the district is estimated to be about 109,038 Km2. It is administratively divided into 20 Keble administrations. The altitude of the district ranges between 1938 and 3356 m.a.s.l. As in many parts of the country all the three agro climatic divisions are included with the following proportion; low land (5%), midland (24%) and highland (71%) characterized by a bimodal rainfall (Solomon, 2007).

The major soil types of the region exhibit a general relationship with altitudes and slopes. Black variety soils being the characteristics of mountains and hills, on the other hand, deep and fertile soils are the major properties of the valley bottoms, river terraces and flat plains. Generally, the soil of the valley is developed on recent alluvial sediments derived from the adjacent mountain ranges. In the study area in general and in the lowland flat plains, valley bottoms and river terraces, in particular, the soil types mainly comprise of alluvial soils (medium textured soils) and some verity soils (black heavy clay soils). Texturally, these two types of soils are sandy loams and sandy clay loams. The fertility status of the soil in the region in general and over the northern highlands in particular is low (Abdu, 2000).

The district has 20 *Kebelles* of which 19 are in the rural area and out of the 19 rural *Kebeles* 18 are the World Bank Food Security Project site (Solomon, 2007).

**Fig.1 Location of Amhara National Regional State and Menz Mama District**



Source: UNDP-EUE 1996 and map of the district is extracted and modified by the researcher

 using different computer applications software.

The population size of the district is 106,738 of which 99,703 are dwellers of rural and 7035 in Urban; on the other hand, 83,478 are dwellers of rural and 7,704 live in urban (Solomon, 2007). Out of the rural dwellers 16,527 males and 18,518 females are chronically food insecure (Mulugeta, 2011).

The population density of the district is nearly 1 persons/km2. In terms of ethnicity, nearly 99.6% of the population is Amhara while only 0.4 % is for others.

 The population size less than 15 years of age accounts for 37.5%. The working age population (15-64) constitutes 59.9%, while the remaining 2.6% of the population is in the age bracket of 65 and above. Children of age (0-14) and youth of age (15-24) make up for 61.3% of the total population, indicating that the majority of the population is less than 25 years of age and the proportion of population of young and old to the working age group is 66.84% (WOFED, 2010).

**3.1.2 Land Utilization and Agriculture**

The ever-increasing human and livestock population in the area combined with land degradation has resulted in almost a total lack of land available for the expansion of crop cultivation. The average land holding per household for the majority of the rural households (about 58 %) is less than 0.5 hectare (FDRE, 2002).

The same source further stated that subsistence mixed farming, constituting about 93 percent of the total rural households, is the dominant farming system in the study area. This increasing shift into mixed farming system, together with improper land use system resulted in serious physical and biological degradation. The degradation is more serious in marginal lands, which are fragile. According to the BSF/FAO (2004) base line survey study the total land coverage of the study area is 108,750 hectare. Accordingly, details of this share are presented in the next table 3.

 **Table 3 Land use pattern in the district**

|  |  |  |
| --- | --- | --- |
| **Serial****numbers** |  **Type**  | **Area coverage in hectares** |
| 1 | Intensively Cultivated Land | 24547.75 |
| 2 | Moderately Cultivated with Shrub Land | 1008 |
| 3 | Moderately Cultivated with Grass Land | 8920 |
| 4 | Grass Land | 725 |
| 5 | Shrub Land | 1880 |
| 6 | Other  | 71669.25 |
|  | **Total** | **108750** |

 Source: BSF/FAO (2004) base line survey study.

Agriculture is the main stay of the economy of Ethiopia both from the point of its contribution to the GDP (Gross Domestic Production), foreign exchange earnings and employment opportunities. This is also true for the study district. The agricultural system in the study area is of traditional subsistence type or small scale peasant farming. It is practiced in small-scale fragmented holdings of peasant farmers. In the study district has 18,021 farm households organized in 19 Kebelle administrations. The farming system in the district is subsistence mixed farming that account for 93% of the total farm households followed by crop and livestock production.

The potential land area for rain feed agriculture is 24,547.75 ha, and the irrigation potential of the region is estimated to be 3,217 ha. Presently the land area under small scale irrigation is about 16,620 ha, out of which 6,480 ha is used for the production of annual crops and the remaining 8,067.75 hectare for perennial. According to information from Rural and Agricultural Main Office of Menz Mama Midir District, there are 19,780 farm households organized in 19 *Kebelles* in the year 2010.

The average land holding ranges from 0.25 and 0.75 hectare per household .Wheat and barley are the most important cereals grown in the district. It accounts, on average, for 65% of annual cereal production. Pulse is the second important cereal accounting for the remaining 35% of the production. Even though the area coverage is relatively small, perennial crops such as eucalyptuses trees and *Gesho* are produced in the study area. Though the district is suitable for irrigation purpose it do not utilized the major reasons include inadequate irrigation development, lack of agronomic know-how on irrigation crops and absence of well organized marketing infrastructure. A farming system, that mainly relies on mono cropping, with little rotation, intercropping, and other improved cultural practices have resulted in low productivity of crops. For instance, the average yield per hectare of wheat is 6.64 quintals against the national average of twenty quintals (CSA, 1995). It is also important to note that a number of other factors such as moisture stress, pest and soil nutrient depletion have contributed for the low productivity.

Livestock production forms an integral part of almost all farming systems in crop producing areas of the region. It is also the major occupation for pastoralists living in the lowlands. Livestock that are found in the study area include cattle, sheep and goats, equine and poultry. As the annual plan of the regional Food security program, small ruminants rearing is the most important business and has to be priority area for food security program interventions that to be made on drought proven economic zone of the region. In the study area the livestock population of the region was estimated to be 259,115 or 64,818 TLU (CSA, 1999). Out of this, 64.8 % are cattle, 17% sheep and goat, and 18.2% equine. (See the conversion factors used to estimate the Topical livestock Units (TLU) in Appendix 3)

The performance of livestock in the study area is low mainly due to insufficient quantity and quality of feed sources throughout the year. Feed shortages are particularly critical during the dry season. This results in weight loss, which negatively affected the performance of the livestock. There is a declining trend of grazing land, both in quality and quantity, due to the nature of farming system. This is largely caused by the increasing human and livestock population.

The increase in human population associated with increase in demand for food has resulted in the expansion of grazing area into cropping areas. Furthermore, the increasing number of livestock against the decreasing grazing land has resulted in the deterioration of pasture which in turn brought a turn down in livestock productivity. Rangelands are the main feed sources in the study area. The current estimated area of grazing and browsing rangeland in the region is about 104,580ha. The rangelands are characterized by sparse shrub land and bushy grassland dominated by Eucalypts tree and Acacia species. These poor rangelands are located and accommodate the rural population comprising mainly of mixed farming (crop and livestock production) (FDRE, 2002).

**3.1.3 Infrastructure and services**

Water Supply: the existing water system in the rural areas of the district consists of protected springs with no point and hand dug wall. Springs are the major sources for domestic water supply in the rural areas. Other sources include rivers, ponds and wells. These water sources are not reliable during dry season as their yield decreases considerably. In fact, in some of the cases the water sources dry-up completely. In the year 2010, there were 45 protected spring and10 hands dug wells. These water sources were serving an estimated 53,500 people, 56% of the total rural population. The remaining 44 percent get their water mostly from river streams, ponds and unprotected springs (WOFED, 2010).

Roads: the district is relatively in accessible. The district is connected to the main road to Addis Ababa and Debr Berhane in North West to Mehal Meda by all weather graveled roads. Within the study area, all weather roads cover a distance of about 115 km. Within district there are motor able trucks (dry weather roads), which connect all most each of the *Kebelles’* villages to each other.

Education and Health; according to the planning and development office, the district has 1 preparatory, 1 secondary schools and 49 primary schools (WFEDO, 2010). Out of the number of primary schools, 48 were found in rural parts of district. Based on the same source, the percentage of students enrolled in secondary and primary schools in the district were 48 and 62.5. The 31.5% and 75.9% of the students in the rural areas were enrolled in primary education.

Concerning the population size of the students engaged in the secondary education was 2470. Of this, the number of male and female students was 1216 and 1254, respectively. Similarly, the sum of students attending primary education is 4199. Of this, 2143 and 2056 were male and female. With regard to health and related services in the district, there are 3 health centers, 4 health stations, 19 health posts, no drug distribution centers (WFEDO, 2010). Out of these, 2 health centers and 19 health posts and 2 health stations are located among different *Keblle* administrations in the district.

Marketing facilities: the major market center for district is located within the district however a number of small sized markets are located in different *Keblle* administrations. All markets are supplied by both crop and livestock produced are the main goods supplied by the farmers to the market centers. In return, the locale farmers take home consumable goods such as food, oil, salt, kerosene, soap, etc to home in return. Unlike marketing infrastructure for other goods, the marketing infrastructure for livestock such as stock routes with resting ground that could provide water and feed, and proper livestock markets are poorly developed. So far, there is no standard has been developed to classify finished animals into grades where by the price is based on weight and other related parameters.

**3.2 Sampling Design and Sample size**

A two-stage random sampling technique was adopted in the survey. At the first stage, 5 out of 18 rural *Kebelles* available in the project’s site of the district were selected randomly based on the list of *Kebelles* available. In the first random sampling technique, from the 18 *Kebelles* of the site of the project, 5 rural *Kebelles* were randomly selected from the site of the project, it was used the ENA for SMART software modifying the Planning Nutrition Survey by filling the geographical unit and their respective population size. As a result it was selected 5 *Kebelles* using random table.

At the second stage of the randomly sampling process, all borrowers were drawn randomly from the selected *Kebelles*, then a total of 120 borrowers (beneficiaries of the project) were selected randomly proportional to size in the respective *Kebelles*. In the second random sampling procedure, calculation of the sample size of borrowers was taken randomly adjusting 120 samples (which is greater than 10% of the total population in the two rural *kebelles* taken in number tale 1 and 2) and the ENA for SMART software modifying the Planning Nutrition Survey. The selection random number table for rural *kebelles* and borrowers is shown in Appendix 4.

**3.3 Type and Method of Data Collection and Source Used**

This section deals with the data collection method /kind of data and source of data adopted for data analysis.

**3.3.1 Data collection method**

The data collection method employee: primary, interviews, discussion and existing statistics.

**3.3.1.1 Primary data collection**

The basis for good survey lies in a good measurement instrument, which is often called primary data collection. That is, the objectives of this study were mainly achieved through the questionnaire methods. The primary data was collected from sample of borrowers/ beneficiaries of the WBFSP in the year 2007 and studied in the production season of 2010/2011 through structured questions capturing the required pertaining to the respondents’ HH demographic and socio-economic characteristics like age, sex, family size, sending children to school, amount borrowed, loan repayment, adequacy of loan from the project, etc. were obtained directly through the interview from selected beneficiaries.

In interview procedure, the project worker was made use of a questionnaire which was prepared in English and the translated in to Amharic, the language of the area, in order to ease the communication, to avoid wording effects as a source of non- sampling error. Eight enumerators were hired for collecting data and information for this study. They were high school graduates, natives of the area, and fluent speakers of the language. The enumerators were trained on the techniques of data collection including how they should approach the loan borrowers, conduct interviews, and convince the beneficiaries to give relevant figures on sensitive economic and social factors, etc. Moreover, they were aware of the objectives of the study and the content of the questionnaire that were explained to them point by point. Thereafter, they pre-tested the questionnaire with the supervision of this project worker. Depending on the results of the pre-test some adjustments was made on the final version of the questionnaire. The project worker was supervising and guiding the enumerators through the data collection.

Personal discussion was conducted with members of various stakeholders. Informal discussion was held with: (i) beneficiaries of the project, (ii) DAs, (iii) KDC, (iv) WDC, and (v) other local communities.

**3.3.1.2 Secondary data**

Secondary data was collected from publications, unpublished manuscripts and documents, seasonal and annual reports of the project and other stakeholders of the project.

**3.3.2 Source of data**

The source of data and information included the following governmental Offices & NGOs offices reports, articles, books, observations, discussions, interviews, etc.

* Federal Food Security Coordination and Disaster Prevention Bureau
* Regional Food Security Coordination and Disaster Prevention Head Office
* The District, zonal, and Regional Main Offices Ministry of Agriculture.
* The district Finance and Economic Development Main Office
* The studding project and other NGOs reports
* Beneficiaries and non-beneficiaries of the project
* KDC, DAs of the *Kebelles*, and RUSACCO and WDC of the district
* Libraries
* Internet search options
* Other stakeholders of the project..

**3.4 Method of Data Analysis**

A computer package program, SPSS, was utilized for descriptive analyses and to fit the Multiple Regression Model; moreover, ENA software was used for random sampling table.

**3.4.1 Descriptive analysis**

Depending on the objectives of a given study and nature of data available, analysis to be made requires different approaches. There are objectives that require descriptive analysis and others many require econometric models that have power to estimate relationships and allow verifying or refuting statement of the theory or hypothesis of the problem at hand (Cochran, 1977). In this study, both descriptive analysis and econometric models were employed. The descriptive analysis was made using percentage, means, and maximum and minimum values of some important variables. Econometric models were used to estimate the relationship between the variables of our concern and the hypothesis regarding these variables was tested.

**3.4.2 Econometric Model**

In linear regression, the Least Square Estimation (OLS) method is used to estimate the parameters of the model. In this method, those values of α (constant) and ßi (coefficients of explanatory variables), which minimize the sum of squared deviations of the observed values of Zi (dependent variable) from the predicted values are determined. Under the assumptions of linear regression, the method of least squares yields estimators with a number of desirable statistical properties. Unfortunately, when the method of OLS is applied to a model with a dichotomous outcome the estimators no longer have these same properties (Hosmer and Lemshow, 1989; Gujarati, 1988).

Multiple regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on two the explanatory variables, with the view of estimating population mean value of the former in terms of the known or fixed values of the latter. The analysis is concerned with how the dependent variable changes as the independent variable change.

It is hypothesized that there are social, institutional and natural factors that encountered beneficiaries of the project to perform low loan repayment performance. Thus, the loan repayment performance in this study has been done following the regression technique in linear form of the following equation:

Yi =β0 + β 1X1+ β 2X2+ β 3X3+ β 4Χ4+…+ β kΧk+ui.

Where Yi = Repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB

X2, X3,...,Xk are the explanatory variables;

 Β0 - is the intercept

 β1, β2,…, β k are the coefficient of the parameter (slopes); ui, represents the error term.

Multiple regression analysis can used to analyze the effects of policies that involve changing the individual independent variables, forecast the value of dependent variable for a given set of independent variable, and examine whether any of the independent variables have significant effect on the dependant variable (Maddala, 1989).

Before taking the selected variables into the Multiple Linear Regression Model (MLRM), it is necessary to check for the existence of multicollinearity among the continuous variables and verify the degree of association among discrete variables. The reason for this is that the existence of multicollinearity will affect seriously the parameter estimates. If multicollinearity turns out to be significant, the simultaneous presence of the two variables will attenuate or reinforce the individual effects of these variables. However, omitting significant interaction terms incorrectly will lead to a specification bias. In a nut shell, the coefficients of the interaction of the variables indicate whether or not one of the two associated variables should be eliminated from model analysis (Kothari, 1990). Accordingly, a Variance Inflation Factors (VIF(Xj)) technique was employed to detect the problem of multicollinearity for continuous variables (Gujarati, 1995). Each selected continuous explanatory variable (Xj) is regressed on all the other continuous explanatory variables, the coefficients of determination (Rj2) being constructed in each case. If an approximate linear relationship exists among the explanatory variables then this should show up as a 'large' value for Rj2 in at least one of the test regressions. A popular measure of multicollinearity associated with the VIF (Xj) is defined as: VIF(Xj) = (1-Rj2)-1

Where, Rj2 is the coefficient of multiple determination when the variable Xj is regressed on the other explanatory variables. A rise in the value of R2j that is an increase in the degree of multicollinearity does indeed lead to an increase in the variances and the standard errors of the OLS estimators. A VIF value greater than 10 is used as a signal for the strong multicollinearity (Gujarati, 1995). Similarly, there may also be interaction between two qualitative variables, which can lead to the problem of high degree of association between two variables. To detect this problem, contingency coefficients were computed from the survey data. The contingency coefficients are computed as follows:

C= where, C= coefficient of contingency, χ2 = Chi-square random variable and N=total sample size.

**3.4.3 Variable specification and hypothesis**

Review of literatures on factors influencing loan repayment performance of borrowers, past research findings and the author's knowledge of the credit schemes of the study area- World Bank Food Security Project’s beneficiaries in Menz Mama district were used to establish working hypotheses of this study. In other words, among a number of factors, which have been related to the World Bank Food Security Project’s borrower loan repayment performance, in this study, the following demographic, socio-economic and institutional factors were hypothesized to explain loan default situations of the study area.

**Y- Dependent variable (FILRPWB):** Was defined as repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB, which is a continuous variable taking a value each of the Project’s borrowers taking loan from the Project in the year 2007 and to be paid in three years duration of time. That is, the dependent variable of the econometric model for this study is the proportion of formal loan repaid during the specified repayment period. This was calculated as:

$$\frac{One-third of the principal \* 365\* number of year/s\* interest rate per hundred}{36,000} in ETB$$

The total amount of credit repaid to the total amount of borrowed has due date of three years life span.

As an alternative, method of the measurement of repayment rate is:

$$\frac{(Amount paid during the period-the repayment)}{(Amount Due+Amount past due)} in ETB$$

Based on the literatures reviewed and discussion held with stakeholders, the explanatory variables selected for this study were broadly categorized under demographic, socioeconomic, and institutional factors.

**X1 - Age of borrower in years (AGEB):** These variables were continuous and measured in years. Through time household heads acquire experience in the farming business and/or credit use. Moreover, older borrowers may accumulate more wealth than younger ones. Therefore, this variable is hypothesized to have positive impact on loan repayment performance of respondents. However, if they have insufficient labor within their households, older household heads in rural areas are at a disadvantaged position economically in undertaking the heavy physical labor required in agriculture. Each additional unit increase in age after some point would thus add less to household income and may even reduce household income leading to low repayment performance.

**X2 - Gender of the borrower (GENDER):** This is dummy variable in the model, which takes a value 1 if the household head is male and 0, if the household head is female. Gender differentials in the farm households play a significant role in economic performance of a given household. Some empirical studies have demonstrated that gender is important in defining the economic role of rural people in Africa (McSweeney, 1979; Dey, 1980). More specifically, Gender differentials can be related to access to credit and one may expect that female-headed households are less experienced in formal credit and hence would be defaulters for they know little about the consequences of loan default. The opposite expectation may be that female borrowers tend to be more loyal to the lenders than male borrowers. This may arise from the fact that females are more responsible for childcare and home management and hence they may be concerned more than males about the possible undesirable consequences arising from the default. Therefore, it is expected that gender of borrowers of the project would have either positive or negative impact on loan repayment performance of the respondents.

**X3 - Education status borrower (EDULEVL):** This is a dummy variable, which takes 0 if illiterate and 1 if literate. Education increases farmers’ ability to get process and use information. For example, literate farmers may seek information on prices more than the illiterates ones and consequently sell their produce at reasonable prices. Moreover, education may enable farmers to be more aware of the importance of formal loan and hence may reduce willful default. Therefore, ceteris paribus, education is expected to increase the loan repayment performance.

**X4 - Health care expenditure (HEALTHEX):** This is dummy variable in the model, which takes a value 1 if the household head had contribution to health and 0, if the household head had not contributed to the health service. Illness of family members increases expenditures in consumption and credit need from other sources to finance medicaments and health care. Therefore, health related expenses are expected to reduce borrowers' capacity to repay loans in time (Belay, 1998; Bekele, 2001).

**X5 - Sending children to school (CHLDSCOL):** This is dummy variable in the model, which takes a value 1 if the household head has been having contribution to students in his/her home and 0, if the household head has not using part of the loan in sending and teaching his/her children. This refers to whether a household/ a borrower is sending his/her children or others to school and supporting them in finance, buying different materials, preparing food, health status, etc. Thus, the improvement in the household’s ability in sending the children to school were expected to have the capacity of not repaying his/her loan on time than those who do not sending their children to school.

**X6 - Main reason you think for not repaying matured loan timely in your Kebelle (REASON):** This is dummy variable in the model, which takes a value 0 if the borrower has been having impeding to pay his/her loan on time and 0, if the borrower has been affected by institutional factors not to pay his matured loan on time.

**X7 - Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC (PLANME):** This refers to the Planning, implementing, monitoring and evaluating of loan borrowers/ beneficiaries of the project by Kebele Development Committee (KDC), Woreda Facilitation Team (WFT), and Woreda Development Committee (WDC) for technical and administrative support. The more the technical and administrative support of beneficiaries of the project is satisfied by KDC, WFT, and WDC, the more tendencies of the borrowers to repay the project’s loan they took. For the analysis this independent was taken as dummy variable 1if good or fair, 0 if weak.

**X8 - Farm size in hectares (FARMSIZE):** Refers to the total farm size (in hectares) owned by the family. A farmer with more hectares of land is expected to be better off in loan repayment performance. This is because, if augmented with other factors of production, large farm size will give higher production that will enable the borrower to repay his/her loan. Therefore, this variable is expected to have positive relation with the dependent variable.

**X9 - Annual gross on- farm income in Birr (ONFARM):** this is a continuous variable. It proceeds from crops and livestock activities in a particular year. The higher the on-farm income is the greater the repayment capacity of the borrower farmers and vice versa.

**X10 - Annual gross off- farm income in Birr (OFFARM):** Off-farm activities generate additional sources of income for smallholders. The cash generated from these activities would back up the farmers’ income to settle debt even during bad harvesting seasons and when repayment period coincides with low agricultural prices. Hence, households involved in off-farm activities tend to be more capable of repaying loans in time. Therefore, off-farm income is hypothesized to have positive impact on loan repayment rate.

**X11 - Amount of saving in Birr (SAVING):** farmers usually save from their proceeds for consumption smoothing purposes throughout the year, accumulation of wealth, and for contingency purposes in case of bad harvest or accident. Saving in the form of livestock, grain, jewelry and cash enables the farmers to easily liquidate them and fulfill the contract entered when prices of agricultural products are not conducive. The more the amount of savings, the greater the capacity to repay as opposed to low amount of savings.

**X12 - Total livestock owned in livestock unit (TLU):** This variable defined in terms of Tropical Livestock Unit (TLU) and may serve as a proxy for the capacity to bear risks of using credit for the purchase of new technology such as fertilizer and capture wealth effect. Livestock may also serve as a proxy for oxen ownership, which is important for farm operations. It is expected that this variable would have positive influence on loan repayment performance.

**X13 - Adequacy of loan from the project (ADQLOAN):** This is dummy variable in the model, dummy (1 if yes, if not adequate 0): When the supply of credit is equivalent to the demand for it, there is no rationing problem and borrowers acquire the amount they demand. Therefore, they are likely to repay on time. On the other hand, rationing of credit implies a higher level of unfulfilled demand. Hence, this variable is hypothesized to affect loan repayment performance either positively or negatively. This variable is a dummy variable which takes a value one if the credit is adequate and zero otherwise.

 **X14 - Variation of interest rate (ITRSTVAR):** This is dummy variable in the model, 1 if there is variation of interest (this refers to the variation of interest rate of the loan in different years in the same peasant association/Kebelle and or in the same year in different Kebelles settled without the willingness/ discussion of the communities benefited from the project). or existence of high interest rate 0, otherwise. It is hypothesized that those who took loan from the project with high interest rate settled without their participation would have less loan repayment performance than those participated and took the loan with less interest rate.

**X15 - Amount of loan borrowed from the project in Birr (AMUTLON):** This is the value of a loan (in Birr) and its square, respectively. We postulate a two-pronged hypothesis. First, the greater the loan size, the greater the probability of unwilling default (negatively relate with loan repayment). This is because in the event of production failure, the borrower will find it more difficult to meet repayment obligations out of his/her personal funds. But, because the RUSACCO charge an incremental penalty rate of interest on delinquent loans after a certain date, the larger the loan, the higher is the penalty cost associated with any delinquency rate. The second factor puts pressure on the borrower to reduce the deliquesce rate (positively relates with loan repayment). It is for this reason that a squared term is included.

**X16 - Celebrate social ceremonies (CERMONY):** This is dummy variable in the model, celebrated one or more of them 1, otherwise 0. These are ceremonies celebrated occasionally such as wedding, burial (funeral), engagement and circumcision. These ceremonies need a great deal of money. Celebration of these social phenomena would influence repayment performance negatively. Therefore, investment on these occasionally celebrated social ceremonies may decrease the repayment capacity of the households who celebrate them than those who didn’t celebrate.

**X17 - Dependency ratio (DEPRATIO):** This refers to the ratio of children below 10 years, disabled members and elders above 60 years to economically active members. The higher the dependency ratio, the more risk averse the household would be since the risk of adverse shock is likely to be relatively serious as it affects children who are more vulnerable. Hence, ceteris paribus the higher the dependency ratio, the better the repayment rate, since such households would want to avoid risk that reduces future borrowing privileges and the more likely they would be non-defaulters than their counterparts.

**X18 - Purpose of borrowing (BORWPURP):** This is a dummy variable, which takes a value 1 if the household borrowed loan for purchase of farm inputs and 0, otherwise. The expenses on variable agricultural inputs purchase such as chemical fertilizers and improved seeds are used to produce enterprises that would give maximum benefits to the farmer. As this variable proxies the use of the loan for productive purposes, it is expected to have positive impact on loan repayment performance of small holders.

**X19 Training given to beneficiaries (TRAING):** This is a dummy variable, which takes a value 1 if the borrower was obtained the training given by the project and 0, otherwise. The project has capacity building for its beneficiaries and implementers of the project. One of triggers for the Project to sustainable is training of beneficiaries more than 75% percent should be given training before they took the loan provided (Mulugeta, 2009). Training given to borrowers has positive influence on the loan repayment performance of the Project.

**Table 4 Summary of definitions and measurements of variables used in the models**

.Variables’ Definitions Unit of

 measurements variables

Age Age of borrowers Years

Saving, annual on/off-farm

Income, amount of loan borrowed,

 and repaid of borrowers Borrowers’ income determinants

 & credit received ETB

Farm size The total farm size (in hectares) owned

 by the family Hectare

Education Formal schooling of the borrowers Years

Livestock ownership Total livestock owned per borrower TLU

 1 if yes, 0 otherwise Dummy

Source: Own survey questionnaires structured

**Continued (Summary of definitions and measurements of variables used in the model)**

Reason Main reason borrowers think for not

 repaying matured loan timely in your *Kebelle*

 1 if institutional, 0 otherwise Dummy

Gender Sex of the borrower

 1 if male, 0 if male Dummy

Education level Education status of borrowers

 1 if literate,0 if illiterate Dummy

Health care expenditure Health care expenditure

 1 if yes, 0 otherwise Dummy

Sending children to school Sending children to school

 1 if yes, 0 otherwise Dummy

Planning, monitoring Planning, implementing, monitoring

 and evaluating end & evaluation

 users by KDC, WFT, WDC

 1 if good or fair, 0 if weak Dummy

Adequacy of loan Adequacy of loan from the project

 1 if yes, 0 otherwise Dummy

Dependency ratio Dependency ratio Number

Purpose Beneficiaries’ purpose of borrowing

 1 if on farm inputs or off-farm inputs

 0 if consumption or others Dummy

Training Training given to beneficiaries

Source: Own survey questionnaires structured

**4 RESULTS AND DISCUSIONS**

This chapter presents the results from the descriptive and econometric analyses. The descriptive analysis made use of tools such as mean, percentage, and standard deviation. In addition, the t-test and Chi-square statistics were employed to compare defaulters and non- defaulters group with respect to some explanatory variables. Econometric analysis was carried out to identify the most important factors that affect the loan repayment performance and measure the relative importance of significant explanatory variables on loan repayment.

**4.1 Descriptive Results**

**4.1.1 Demographic, socio-economic, and institutional characteristics of the sampled**

 **borrowers**

In this section, descriptions of demographic, socio-economic, and institutional characteristics is presented and discussed in detail. These are the hypothesized variables that might influence the loan repayment performance of WBFSP in the district.

**Gender of borrowers:** This is dummy variable in the model, which takes a value 1 if the household head is male and 0, if the household head is female. Gender differentials in the farm households play a significant role in economic performance of a given household. Some empirical studies have demonstrated that gender is important in defining the economic role of rural people in Africa (McSweeney, 1979; Dey, 1980). Out of the 120 total sampled borrowers 19 were females and 101 were male. One of the project’s trigger points was that females should constitute 50 % of the total borrowers of the loan. However, this study shows that females constituted 15.83 percent and male were 84.17 percent of the sampled respondents (Table 5).

**Table 5 Distribution of sample respondents based on their demographic, socio-economic, and institutional characteristics for dummy variables (N = 120)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Attributes  | Frequency  | Percent  |
|  |  |  |  |
| Gender | Female | 19 | 15.83 |
| Male | 101 | 84.17 |
|  | Total | 120 | 100 |
| Educational level of the borrowers | Illiterate | 65 | 54.17 |
| Literate | 55 | 45.83 |
|  | Total | 120 | 100 |
| Health care expenditure | No | 49 | 40.83 |
| Yes | 71 | 59.17 |
|  | Total | 120 | 100 |
| Sending children to school | No | 34 | 28.33 |
| Yes | 86 | 71.67 |
|  | Total | 120 | 100 |
| Main reason you think for not repaying matured loan timely in your Kebelle | Socio-economic | 56 | 46.67 |
| Institutional | 64 | 53.33 |
|  | Total | 120 | 100 |
| Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC | Weak | 88 | 73.33 |
| Good or fair | 32 | 26.67 |
|  | Total | 120 | 100 |
| Adequacy of loan from the project | No | 103 | 85.83 |
| Yes | 17 | 14.17 |
|  | Total | 120 | 100 |
| Variation of interest rate  | No | 67 | 55.83 |
| Yes | 53 | 44.17 |
|  | Total | 120 | 100 |
| Celebrate social ceremonies | No | 90 | 75 |
| Yes | 30 | 25 |
|  | Total | 120 | 100 |
| Purpose of borrowing | Consumption or others | 65 | 54.17 |
| On-farm inputs or off-farm inputs | 55 | 45.83 |
|  | Total | 120 | 100 |
| Training given to beneficiaries | No | 19 | 15.83 |
| Yes | 101 | 84.17 |
|  | Total | 120 | 100 |

Source: Survey results

**Education level of borrowers:** Education is one of the important variables, which increases farmer’s ability to acquire process and use agricultural related information. Low level of education and high illiteracy rate is typical in developing countries like Ethiopia. In fact, education level of farmers is assumed to increase the ability to use agriculture related information in a better way. Therefore, in this study, educational level is a variable helping exposure to information and its utilization. As indicated in Table 5, 54.17% of the sample respondents were illiterates, 45.83% were literate.

**Health care expenditure:** Illness of family members increases expenditures in consumption and credit need from other sources to finance medicaments and health care. The survey shows that 59.17 percent of the borrowers had medical expense for their and their relatives’ health care and 40.83 percent of the borrowers had not contributed to health care from the loan they took from the project (Table 5).

**Sending children to school:** This refers to whether a household/ a borrower is sending his/her children or others to school and supporting them in finance, buying different materials, preparing food, health status, etc. Thus, the improvement in the household’s ability in sending the children to school were expected to have the capacity of not repaying his/her loan on time than those who do not sending their children to school. The survey results reveal that 71.67 percent of the borrowers were sending their children to school and 28.33 were not (Table 5). Out of the 120 sampled respondents, borrowers who have been sending their children to school were 86 and those who replied “No” were 34. Thus, about 72 percent of the respondents have been teaching their children in aiding the children in consumption and other teaching materials. 28 percent of the respondents had not had expense in education, either sending their children to school or they haven’t had children to be learnt (Table 5).

**Main reason you think for not repaying matured loan timely in your *Kebelle:*** An attempt was made to know the reasons the respondents others borrowers problem encountered to repay their matured loan on time and as a result of this survey 56 of the respondents replied that it was socio-economic and 64 of the respondents said that it was institutional factors that they were impeded not to pay their loan (Table 5).

 **Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC:** Most of the respondents reported that in planning, implementing, monitoring and evaluation of the implementers of the project have not been satisfactory. As the survey depicts, 73.33% of the respondents would not have gotten any support by the implementers; and the respondents put this factor as weak, and the rest-only 26.67% respondents said it has been good or fair.

**Adequacy of loan from the project:** The loan from the project to each beneficiary in the year 2007 was 1500 ETB. Although it was 1500 ETB, the community could discuss and increase up to 2000 ETB per individual. However, there hadn’t had any discussion on this increment of loan (Mulugeta, 2007).

Based on this study, the result shows that majority of the respondents (85.83%) reported the loan given from the project was not adequate; whereas 14.17 percent replied as it was adequate for someone who used properly or for profitable income generating activities.

**Variation of interest rate:** In the year 2007, the beneficiaries of the project borrowed their loan with transaction cost which misleadingly the borrowers and the RUSACCO call “interest rate” was 7.50 ETB per year. But some RUSACCO of the *Kebelle* administrative increase informally this settled interest rate while they had borrowed the loan to the beneficiaries of the project. First of all, the interest rate ought to settle in discussing with the community of the *Kebelles*. Secondly, once it was given a fixed interest rate to the RUSACCO of each *Kebelles*, they must not change while they borrowed to the farmers (Mulugeta, 2007).

The result of the survey indicates that 55.83 percent of the respondents did not face any interest rate variation. Nevertheless, 44.17 percent of the respondents have got variation of interest rate either while they borrowed or in their repayment time (Table 5).

**Celebrate social ceremonies:** Concerning social ceremonies in the study area, other than those commonly celebrated, farmers occasionally celebrate other ceremonies, which mainly include *‘Chiristna’*, funeral of a family member or close relative and marriage. Of the total respondents 75% reported that they had celebrated one or more of these occasional ceremonies and 25% stated that they had not celebrated any of them during the study period (Table 5).

**Purpose of borrowing:** The project has its own negative and positive lists. Among the positive lists are off-farm income, market access, agriculture, grain banks, water development, etc. From the negative lists are financing for region, political situation, any environment causing/damaging activities, etc (Mulugeta, 2007). Borrowers should utilize the loan that used for any activity that leads to an increase in income or asset of the community. 65 percent of the respondents stated that they allocated the loan they took from the project for the purpose of consumption or others like education and health expenditures. Others 55 percent of the respondents used their loan for farm inputs and off-farm inputs (Table 5).

**Training given to beneficiaries:** The project has capacity building for its beneficiaries and implementers of the project. One of triggers for the Project to sustainable is training of beneficiaries more than 75% percent should be given training before they took the loan provided (Mulugeta, 2007). However, from the table 5, it can be seen that 84.17% of the sampled borrowers were taken training on different titles; such as income generating activities, positive and negative lists of the project, utilization and management of revolving fund, etc. As farmers and different implementers were asked informally, the problem rests on two things; namely, for one thing, there are years training was not given from in the district to beneficiaries; the reason is budget was not released from the regional implementers of the project (say, in 2001 E.C). Secondly, even if budget is released from the region and training was held in the district some beneficiaries abstain from the training given because of different reasons (say, they have been living far from the training center and no one could reared their livestock). Whatever the reasons were, the number of borrowers who ought to be trained would be trained; and the result from the survey depicts this.

Table 5 indicates that the total sample respondents taken were 120. Indeed, the average age of sampled beneficiaries of the World Bank Food Security Project was about 43 years with the minimum and maximum ages of 23 and 79 years respectively.

**Table 6 Distribution of sample respondents based on their demographic, socio-economic, and institutional characteristics for continuous variables (N = 120**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Sum | Mean |  Std. Deviation |
|  |  |  |  |  |  |  |
| Age of borrowers in years | 120 | 23 | 79 |  | 42.78 | 11.026 |
| Farm size  | 120 | .00 | 3.00 |  | 1.1948 | .72702 |
| Annual gross on- farm income  | 120 | .00 | 14000.00 |  | 3451.1250 | 2648.00250 |
| Annual gross off- farm income  | 120 | .00 | 7000.00 |  | 581.1583 | 1222.52776 |
| Amount of saving  | 120 | .00 | 10000.00 |  | 539.5583 | 1312.50494 |
| Total livestock owned in livestock unit | 120 | .00 | 6.00 |  | 2.1567 | 1.38095 |
| Amount of loan borrowed from the project  | 120 | 1000.00 | 1500.00 | 172150.00 | 1434.5833 | 152.67858 |
| Dependency ratio | 120 | .00 | 100.00 |  | 26.8128 | 15.27909 |
| Repaid amount of loan by the corresponding respondents (borrowers)  | 120 | .00 | 1728.50 | 67846.70 | 565.3892 | 685.17791 |

 Source: Survey results

**Age of the borrowers:** These variables were continuous and measured in years. Through time household heads acquire experience in the farming business and/or credit use. Moreover, older borrowers may accumulate more wealth than younger ones.

The average age of sampled beneficiaries of the World Bank Food Security Project was about 43 years with the minimum and maximum ages of 23 and 79 years respectively.

**Farm size:** The average land holding of the sample borrowers was 1.19 hectare. The minimum and maximum holding sizes were 0 and 3 hectares, respectively. All respondents owned less than 3 hectares of land and there were farmers without any land holding. This shows that farming in the area is of subsistent type (Table 6).

**Annual gross on- farm income:** One of the source incomes for the borrowers of the project in the study area is on-farm income. Among the major on-farm income generating activities is purchasing livestock like Sheep, heifer, calf, ox, goat, and so on. The survey results indicate in table 6 that the average annual gross on-farm income less than 3451.1250 ETB; and the minimum and the maximum annual gross on-farm income of the respondents were 0 ETB and 14000 ETB respectively.

**Annual gross off- farm income:** The other sources of income for the borrowers of the area were off-farm activities. The major off-farm income generating activities participated in the area were petty trading, charcoal and firewood selling. They have used the loan mainly for the petty trading. One of objective of the loan provider (the project) was farmers, especially, the poor to keep their assets and to find other income generating activities. From the survey, the average gross off-farm income of the total beneficiaries sampled was about 581.16 ETB and the maximum annual gross off-farm income was 7000.00 ETB. The minimum annual gross off-farm income was 0.00 ETB (Table 6).

**Amount of saving:** Farmers usually save from their proceeds for consumption smoothing purposes throughout the year, accumulation of wealth, and for contingency purposes in case of bad harvest or accident. Respondents were asked their saving amount in the form of cash at hand, in relatives and in bank or other saving micro institutions. As is shown in table 6, the minimum amount of money saved by the respondents was 0 ETB and the maximum amount of money saved by them was up to 10,000 ETB. The average amount of saving in ETB was 539.56.

**Livestock situation:** Farmers in the study area undertake both crop and livestock production activities. The total livestock owned in livestock unit varied among the sampled borrowers. As indicated in table 6, the minimum total livestock unit (TLU) of the respondents was 0 and the maximum was 6. The average TLU of the sampled borrowers was about 2.16.

**Amount of loan borrowed from the project :** The project lends money to its beneficiaries after the selecting the poor farmers and submission of compiled proposals from their respective Kebelles to the Rural and Development Main Office of the district. Then credit delivery occurs by the district’s Finance and Economic Development Main Office. The project allows loan disbursement in 5 to 10 individuals forming group. Although it was flexible to increase the amount of the loan the beneficiaries receive up to 2000 ETB per a borrower after making discussion with the community of the respective Kebelles, no Kebelle had made an opportunity to increase the loan given to the beneficiaries of the project (Mulugeta, 2007). The survey results revealed that the minimum amount of loan the borrowers received was 1000 ETB and the maximum amount received by the sampled borrowers was 1500 ETB. The average amount of money delivered to the respondents was about 1434.58 and the sum of money delivered to the 120 sampled beneficiaries of the project was amounted to be 172,150 ETB (Table 6).

**Dependency ratio:** In this study, dependent family members are defined to include children under 10, disabled persons and adults older than 60 years. As indicated in table 6, the average ratio of the dependent family members to economically active members was 26.81 with minimum value of zero (no dependent member) to the maximum of 100 percent.

**Repaid amount of loan by the borrower:** The survey results indicate that the total amount of credit disbursed to the sampled borrowers was 172150 ETB. The minimum, maximum, average, sum and standard deviation of the borrowers paid their loan to RUSACCO was 0, 1728.50, 67846.70, and about 685.18 ETB, respectively (Table 6).

The loan repayment performance of the sampled respondents was 67846.70\*100/172150 ETB which is equal to 39.41 percent; which is nearly the same as with the total repayment performance of the district, which was 41.55 percent as seen in Appendix 2.

**4.2 Econometric Analysis**

As discussed earlier, the Multiple Linear Regression (MLR) econometric model was selected for analyzing the factors influencing the loan repayment performance of the borrowers. In the preceding parts of this thesis the MLR analysis of important independent variables, which are expected to have influence on loan repayment performance of the project in the district were presented. In this section, the selected independent variables were put to MLR model to identify the factors influencing the loan repayment. A MLR model was fitted to estimate the influence of the hypothesized independent variables. SPSS version 15 was used for analysis.

Based on MLR analysis in the previous section, among continuous variables, age of household head in years, farm size in hectares, annual gross on- farm income in ETB, annual gross off- farm income in ETB, amount of saving in ETB, total livestock owned in livestock unit, amount of loan borrowed from the project in ETB, dependency ratio, and repaid amount of loan by the borrower in ETB were selected while among dummy variables sending children to school, main reason you think for not repaying matured loan timely in your *Kebelle*, planning, implementing, monitoring and evaluating of end users, adequacy of loan from the project, variation of interest rate in the study year, celebrate social ceremonies, purpose of borrowing, and training given to beneficiaries were selected for multiple regression analysis.

**4.2.1 Analysis of factors influencing loan repayment performance**

As discussed earlier, the MLR econometric model was selected for analyzing the factors influencing the loan repayment performance of the borrowers. Prior to running the MLR analysis both the continuous and dummy explanatory variables were checked for the existence of multicollinearity and high degree of association using variance inflation factor (VIF) and contingency coefficients, respectively. The VIF values for continuous variables were found to be very small (much less than 9) indicating that absence of multicollinearity between them (Table 7). Contingency coefficient measures of association based on chi-square. The value ranges between 0 and 1, with 0 indicating no association between the row and column variables and values close to 1 indicating a high degree of association between the variables.

 Likewise, the results of the computation of contingency coefficients reveal that there was no serious problem of association among discrete variables (Table 8). For this reason, all of the explanatory variables were included in the final analysis. More specifically, eight continuous and eleven dummy explanatory variables were used to estimate the MLR model. The variable repaid amount of loan performance by the project’s beneficiaries was used as a continuous dependent variable. Eventually, a set of nineteen independent variables were included in the model and used in the MLR analysis. The summary statistics of the independent variables used in the model is depicted in Appendix 8.

 **Table 7 Variance inflation factor (VIF) for continuous variables**

|  |  |
| --- | --- |
| **Variables** | **VIF** |
| (Constant) |  |
| AGEB-X1 | 1.028 |
| FARMSIZE-X8 | 2.672 |
| ONFARM-X9 | 3.070 |
| OFFARM-X10 | 1.385 |
| SAVING-X11 | 2.049 |
| TLU-X13 | 2.161 |
| AMUTLON-X15 | 1.019 |
| DEPRATIO-X17 | 1.136 |

Source: Own computation

**Table 8 Contingency coefficient for dummy variables**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variables | HEALTHEX (X4) | REASON (X6) | CHLDSCOL(X5) | PLANME(X7) | GENDER(X2) | EDULEVL(X3) |
| ADQLOAN (X13) | 0.051 | 0.099 | 0.063 | 0.132 | 0.045 | 0.058 |
| ITRSTVAR (X14) | 0.157 | 0.419 | 0.112 | 0.389 | 0.154 | 0.389 |
| (CERMONY(X16) | 0.088 | 0.189 | 0.021 | 0.213 | 0.143 | 0.143 |
| BORPURP(X18) | 0.309 | 0.239 | 0.053 | 0.394 | 0.032 | 0.341 |
| TRAING(X19) | 0.127 | 0.174 | 0.082 | 0.205 | 0.063 | 0.211 |

Note: The coefficients were tested using Chi-square test

Source: Own computation

**4.2.2 Discussion on the Significant Explanatory Variables**

These variables were selected on the basis of theoretical explanation and the result of various empirical studies.

To determine the best subset of independent variables that are good predictors of the dependent variable, the MLR were estimated using the SPSS software. In this method all the above mentioned variables were entered in a single step.

Table 9 ,on the next page, shows that, out of nineteen factors considered in the model, only eight variables were found to be significantly influencing on loan repayment; out of the eight variables 2, 4, 2 variables were affecting the loan repayment at 0.01, 0.05, and 0.1 levels of significance respectively.

**Table 9 Coefficients of regression function**

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Coefficients |  t |  Sig. |
|  B |  Std. Error |
| (Constant) | 88.096 | 364.161 | .242 | .809 |
|  |  |  |  |  |
| AGEB-X1 | 6.355\*\* | 3.198 | 1.987 | .050 |
| Dummy variable for GENDER-X2 | -168.715\* | 91.913 | -1.836 | .069 |
| Dummy variable for EDULEVL-X3 | 176.141\*\* | 73.745 | 2.389 | .019 |
| Dummy variable for HEALTHEX-X4 | -128.776\* | 67.924 | -1.896 | .061 |
| Dummy variable for PLANME-X7FARMSIZE-X8 | 548.517\*\*\*197.343\*\*\* | 101.31773.806 | 5.4142.674 | .000.009 |
| SAVING-X11 | .089\*\* | .034 | 2.588 | .011 |
| Dummy variable for ITRSTVAR-X14 | -197.190\*\* | 76.955 | -2.562 | .012 |

Notes: \*\*\*, \*\*, \*, Significant variables 1%, 5%, and 10% significance level

 R=0.907 , R2= 0 .822 Adj. R2= 0.788 F= 24.343 P=0.000

These significant variables were age of borrower in years (AGEB), gender of the borrowers (GENDER), education level of borrowers (EDULEVL), health care expenditure (HEALTHEX) , PLANME (Planning, implementing, monitoring and evaluation of end users), farm size ((FARMSIZE), amount of saving (SAVING), variation of interest rate (ITRSTVAR). Eleven of the nineteen explanatory variables, namely; sending children to school (CHLDSCOL), main reason you think for not repaying matured loan timely in your *Kebelle* (REASON), annual gross on- farm income in Birr (ONFARM), annual gross off- farm income in Birr (OFFARM), total livestock owned in livestock unit (TLU), adequacy of loan from the project (ADQLOAN), amount of loan borrowed from the project in ETB (AMUTLON), celebrate social ceremonies (CERMONY), dependency ratio (DEPRATIO), purpose of borrowing (BORWPURP), training given to beneficiaries (TRAING), (see Appendix 7) were found to have no significant influence on the loan repayment of the World Bank Food security Project in the study area.

The multiple correlation coefficient measure (R=0.907) indicates that the relationship between the loan repayment performance and the independent variables is quite strong and affects positively and negatively as seen in table 10.

The value of coefficient of determination (R2) implies that about 82.2% of the variation in the repaid amount of loan by the borrowers in ETB is explained by the nineteen independent variables in the model.

**Table 10 ANOVA of the regression function**

|  |
| --- |
|  Sum of Squares df Mean Square F Sig. |
| Regression 45935225 19 2417643.421 24.343 .000 |
| Residual 9931559 100 99315.586   |
| Total 55866784 119  |

Source: Own computation

The ANOVA table tests the acceptability of the model from a statistical respective. The ANOVA result in Table 10 shows that the regression is significant at less than 10 % level. Thus, the F test shows that the model is significant. The regression row displays information about the variation accounted for by the model. The residual row displays information about the variation that is not accounted for by the model.

The significant variables, derived as an output (estimated) of the model, are described below.

****β0 + β 1X1+ β 2X2+ β 3X3+ β 4X4+ β 5X5+ β 7X7+ β 8Χ8+β 11Χ11+β 14X14 + ε

Where, **** Repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB (REPID) and the significant explanatory variables were:

X1 = Age of borrowers in years (AGEB)

X2 = Gender of borrowers (GENDER) dummy (1 if male, 0 if male)

x3 = Education level of borrowers (EDULEVL) dummy (1 if literate, 0 if illiterate)

X4 = Health care expenditure in Birr (HEALTHEX) dummy (1 if yes, 0 otherwise)

X7= Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC (PLANME) dummy (1 if good or fair, 0 if weak)

X8 = Farm size in hectares (FARMSIZE)

X11 = Amount of saving in Birr (SAVING)

X14 = Variation of interest rate in the study years (ITRSTVAR) dummy (1if yes 0 otherwise)

**** 88.096 + 6.355X1- 168.715X2 + 176.141X3 - 128.776X4 + 548.517X7 + 197.343X8 +

 (.2420) (1.987) (-1.836) (2.389) (-1.896) (5.414) (2.674)

 .089X11 -197.190 X14

 (2.588) (-2.562)

REPID = 88.096 + 6.355AGEB - 168.715GENDER+ 176.141EDULEVL- 128.776 HEALTHEX + 548.517PLANME +197.343FARMSIZE+.089SAVING-197.190ITRSTVAR

The numbers in the parenthesis are calculated t-values of respective coefficient parameters.

The output of the model has been thoroughly discussed below.

**Age of borrower (AGEB):** The results shows that ,ceteris paribus, as age of the respondent increases by 1 year, the repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries (REPID) would increase by 6.355 ETB. Age has a positive impact on loan repayment performance of the borrowers and it was found to be significant at 5% level. This implies, through time household heads acquire experience in the farming business and/or credit use. Moreover, older borrowers may accumulate more wealth than younger ones.

**Gender of the borrowers (GENDER):** The results of the MLR model revealed that this variable affects loan repayment performance negatively. The variable is significant at 10% probability level. Ceteris paribus, being male the borrower is, the loan repayment performance decreases by 168.715ETB than being females are the borrower. The possible explanation is that female borrowers tend to be more loyal to the lender, the bilateral project of WBFS, than male borrowers. This could arise from the fact that females are more responsible for childcare and home management and hence they may be concerned more than males about the possible undesirable consequences arising from not paying on time. Therefore, gender of a borrower significant impact on loan repayment performance of the respondents.

 **Educational status (EDULEVL):** Results of the MLR model tell that this variable has a significant and positive influence on the loan repayment performance of the project in the study area. It was significant at the probability level of 5%. Other things being constant, loan repayment performance of the respondents for literate is greater than those borrowers who are illiterate by 176.141ETB. This might be because of that education increases farmers’ ability to get process and use information. For example, literate farmers may seek information on prices more than the illiterates ones and consequently sell their produce at reasonable prices. Moreover, education may enable farmers to be more aware of the importance of loan and hence may increase timely repayment performance. Therefore, ceteris paribus, education increases the loan repayment performance. This is in a complete agreement with studies made by Miller (1977), Pandey and Muralidharan (1977) and Ike (1986) found that education level and loan repayment were positively related.

**Annual health care expenditure (HEALTHEX):** Correlation analysis shows that annual health expenditure is negatively and significantly correlated at 10% probability level with the loan repayment performance. Similarly, the output of regression analysis proves that, those borrowers who have annual health care expenditure in ETB decreases the loan repayment performance of the project by 128.776ETB than those corresponding beneficiaries of the project who do not incur annual health expenditure. This means that illness of family members increases expenditures in consumption and credit need from other sources to finance medicaments and health care. Therefore, ceteris paribus, health related expenses had been reducing borrowers' capacity to repay their debit in time.

 **Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC (PLANME):** As can be seen from the analysis that planning, implementing, monitoring and evaluating end users (beneficiaries of the project) by KDC, WFT, WDC was found to be positively and statistically significant at 1% probability level in the performance of the loan repayment. Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC contributes the most to the model because it has the largest coefficient, which accounts for 548.517. The loan repayment performance of the project by the corresponding respondents who had good opinion about the project’s planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC is greater than those who had weak opinion by 548.517ETB. In other words, ceteris paribus, the existence of support by the project implementers to the borrowers of the project increases the loan repayment performance of the project’s beneficiaries than the unsupported beneficiaries by 548.517ETB.

**Farm size in hectares (FARMSIZE):** As per the hypothesized, the relation between farm size and loan repayment performance of the project’s beneficiaries was found to be positive and significant, as discussed in previous section. The model estimates confirm that the total farm size in hectares which is a proxy for a host of factors including wealth and income, has a significant effect at 1% and has positive impact on loan repayment performance the corresponding respondents of the project. Other things being kept constant, the loan repayment performance increases by 197.343ETB as the farm size increases by one hectare. This is because those borrowers with larger cultivated land earn more income be it from crop production or livestock raising. Loan repayment performance in the area is highly influenced by the shortage of farmland. Therefore, a farmer with more hectares of land is expected to be better off in loan repayment performance. This is because, if augmented with other factors of production, large farm size would give higher production that could enable the borrowers to pay their loan on time.

**Amount of saving (SAVING):** The study revealed that the coefficient of amount of saving in ETB of respondent (X11 = 0.089) was positively and significantly correlated with repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB (REPID) signifying that holding the values of all other variables constant, a unit increase in amount of saving level of a respondent would be accompanied by an increase in the loan repayment performance by .089 ETB. The probable reason might be farmers usually save from their proceeds for consumption smoothing purposes throughout the year, for accumulation of wealth, and for contingency purposes in case of bad harvest or accident in the form of livestock, grain, jewelry and cash; they can easily liquidate what they saved and fulfill the contract entered when prices of agricultural products are not conducive. Hence, the study assured that the more the amount of savings, the greater the capacity to repay as opposed to low amount of savings.

 **Variation of interest rate (ITRSTVAR):** The result of the MLR analysis showed that this variable affects loan repayment performance negatively. This is consistent with a prior expectation. The variable is significant at 5%. Other things being constant, existence of variation of interest rate in the borrowers of the project in the study area decreases the loan repayment performance of the project by 197.190 than the absence of variation interest rate. This implies, borrowers who took loan from the project with high interest rate settled without their participation would have less loan repayment performance than those participated and took the loan with less interest rate. Hence, if there is variation of interest or existence of high interest rate of the loan in different years in the same *Kebelle* and or in the same year in different *Kebelles* settled without the willingness/ discussion of the communities benefited from the project, the loan repayment performance decreases.

**5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

**5.1 Summray**

Level of poverty and ill-being in Ethiopia is apparently very high. The Amhara region in particular, has been prone to much suffering in the past, and was one of the hardest hit areas in the 1973, 1984 and more recent famines of Ethiopia. Overall, 52 out of the 140 districts in the region are categorized as chronically food insecure. Many factors have accounted for such high level of poverty, among which low level of working capital is one.

In the region, the rural financial landscape essential remains dominantly informal. In the rural areas of the region there are little farmers who have access to finance from formal sources. This is belived to have changed to some extent with the most popular informal sources of finance like *Equeb, Idir* and the *Arata* *Abedari* (money lenders).

Most recently, while the number of commercial banks and micro finance institutions (both public and private) has increased, having offices in most districts of the region, their accessibility to the very poor is still limited. However, such informal and semi formal sources are not covering the majority of the rural poor households. Their outreach is still limited.

As part of gap filling mechanism and to implement a holistic rural development programme, NGO- Credit projects were implemented in the region. One of the over-riding projects is the Food Security Project (Cr.3646 ET) known as World Bank food Security Project (WBFSP). The WBFSP has been implemented in the ANRS and the district since 2002/3. The rationale of this project is to stimulate and support private sector initiatives among men and women to the greatest extent possible, with beneficiaries able to develop their own proposals for loan (revolving fund) so as to create community assets promoting saving through training communities on income generating activities. Saving and credit is an integral part of the project, which engages people in economic activities that enhance self-reliance. Savings and credit scheme increases the productive potential of poor women and men households. Credit plays a crucial role in agricultural production. It is said to be the lifeblood of agriculture and hence, the need for adequate farm finance is obvious.

It is important, however, that the borrowed funds be invested for productive purposes and the

loan be repaid to the *Kebelle* RUSACCO and KDC (which the government of Ethiopia and the project made an agreement that these bodies to manage the loan disbursed to the beneficiaries from the project) and make revolve to other poor rural dwellers of their respective *Kebelles* to have sustainable and viable production process. However, low repayment performance of the loan is one of the major problems most districts face in the region.

This study was conducted in Menz Mama District, Northwestern part of Ethiopia. No study has been conducted in Northwestern part of the country on loan repayment performance of credit provider NGO and government bilaterally. Therefore, the district was selected purposively with certain criteria (say, highly aided for a long period of years but still food insecure district).

The objective of this study was to investigate the factors influencing WBFSP loan repayment performance of beneficiaries in the district. To address the specific objectives of the study; that is, in identifying the socio-economic, and institutional factors affecting loan repayment performance; and to suggest appropriate and remedial measures and areas of emphasis in collection, and management of the revolving funds through the community, both quantitative and qualitative methodologies were used in this study.

Data were collected from primary and secondary sources. The primary data necessary for the quantitative study were collected through personal interviews. Qualitative data were collected through field visits, observations, informal interview and discussion with key informants such as beneficiaries and non-beneficiaries of the project, KDC, DAs of the *Kebelles,* RUSACCO members and administrators, stake holders of the project, other local communities and WDC of the district. The secondary source of data and information included: libraries, internet search options, governmental Offices’ & NGOs offices’ reports such as the Federal Food Security Coordination and Disaster Prevention Bureau, the Regional Food Security Coordination and Disaster Prevention Head Office, the District, Zonal, and Regional Main Offices of the Ministry of Agriculture, Finance and Economic Development Main Office of the District, the studding project’s reports, articles, and different books and manuals.

The study adopted a two-stage random sampling technique in the survey. At the first stage, 5 *kebelles* (which is more than 10 % of the 18 rural *Kebelles*) of the district were selected randomly based on the list of *Kebelles* available using random sampling table. Proportional random sampling technique was employed to select a total of 120 sample borrowers residing from 5 rural *Kebelles* /Peasant Associations and conducted formal survey using structured interview schedule. The main objective of this study was to analyze which, how and how much the hypothesized explanatory variables were related to the loan repayment performance of rural borrowers /being beneficiaries of the project the year 2007. As the project’s loan for its beneficiaries has a life time of three years due date, the borrowers of the year 2007 were studied in the year 2010/ 2011 production season.

Descriptive statistics with appropriate statistical tests and Multiple Linear Regression (MLR) model were used to analyze data collected for the study.

The survey results of the study revealed that the average age, farm size, annual gross on- farm income, annual gross off- farm income, amount of saving, TLU, amount of loan borrowed from the project of the respondents, dependency ratio, and repaid amount of loan by the corresponding borrower respondents were found to be 42.78 year, 1.19 ha, 3451.13 ETB, 581.16 ETB, 539.56ETB, 2.16, 1434.58ETB, 26.81, and 565.39ETBrespectively. As of obtained from secondary data of the district’s Agricultural Main Office t he loan repayment performance of the project in the district was 41.55 percent and descriptive analysis of this study proves that of 39.41 percent.

Before employing MLR analysis, the 19 independent variables hypothesized to influence the loan repayment performance of the corresponding respondents were checked for multicollinearity using VIF values for continuous variables, and contingency coefficient measures of association based on chi-square for dummy variables; and all the explanatory variables were found to be useful variables to be included in the model.

The most important explanatory variables affecting loan repayment performance were analyzed using multiple regression models. On the basis of the model results, among the 19 explanatory variables, which were hypothesized to influence loan repayment performance the project’s corresponding respondents(REPID), eight were statistically significant while the remaining eleven were less powerful in explaining the variation in the dependent variable (REPID).

The significant variables included: age of borrower in years (AGEB), gender of the borrowers (GENDER), education level of borrowers (EDULEVL), health care expenditure (HEALTHEX) , PLANME (Planning, implementing, monitoring and evaluation of end users), farm size ((FARMSIZE), amount of saving (SAVING), variation of interest rate (ITRSTVAR).

A closer look at the model results reveals that these all the variables are synonymous to the a priori expectation, influenced loan repayment performance as hypothesized positively or negatively, and significantly as follows:

The MLR model result shows that, ceteris paribus, as age of the respondent borrowers’ increases by 1 year, the repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries would increase by 6.355 ETB. Age has a positive impact on loan repayment performance of the borrowers and it was found to be significant at 5% level. This might be due to older borrowers may accumulate more wealth than younger ones or through time household heads acquire experience in the farming business and/or credit use.

Gender of the borrowerswas the other variable affecting loan repayment performance. This variable was significantly and negatively related to the dependent variable showing that female borrowers are more likely to repay their loan on time than the males. The possible explanation is that female borrowers tend to be more loyal to their lender institution or organization than male borrowers. This could arise from the fact that females are more responsible for childcare and home management and hence they may be concerned more than males about the possible undesirable consequences arising from not paying on time.

Educational status of the respondents was the third important variable affecting loan repayment performance. As expected, this variable was positively and significantly related to the repaid amount of loan by the corresponding borrowers of the project. Showing that borrowers’ loan repayment performance of the respondents for literate is greater than those borrowers who are illiterate. This might be because of that education increases farmers’ ability to get process and use information of more awareness of the importance of loan and hence may increase timely repayment performance.

Annual health care expenditure, as a fourth explanatory variable,affected loan repayment performance negatively and significantly. This is due to the fact that those borrowers with more expense for health care decreases their loan repayment performance than corresponding beneficiaries of the project who do not incur annual health expenditure. This is due to the fact that illness of family members increases expenditures in consumption and credit need from other sources to finance medicaments and health care.

The fifth independent variable was found to be crucial in the analysis in influencing the loan repayment performance of the project by the corresponding respondents is that planning, implementing, monitoring and evaluating end users (beneficiaries of the project) by KDC, WFT (*Woerda* Facilitation Team), WDC. It was positively and statistically significant at 1% probability level in the performance of the loan repayment. Indicating that, the existence of support by the project implementers to the borrowers of the project increases the loan repayment performance of the project’s beneficiaries than the unsupported beneficiaries. The reason is that KDC, WFT, and WDC.

Likewise, as per the hypothesized, farm size has a significant effect at 1% and positive impact on loan repayment performance. Showing that loan repayment performance in the area is highly influenced by the shortage of farmland. This is because a borrower with larger cultivated land earns more income, be it from crop production or livestock, raising that enables him/her to pay his /her credit on time.

In addition the above explanatory variables, the study revealed that amount of money saved by the respondentswas positively and significantly correlated with repaid amount of loan by the corresponding respondents of project beneficiaries. The probable reason might be farmers usually save from their proceeds for consumption smoothing purposes throughout the year, for accumulation of wealth, and for contingency purposes in case of bad harvest or accident and they may pay their credit from their saving before their matured loan.

Finally, the result of the MLR analysis showed that the existence variation in interest rate of the borrowers in the same year in different *Kebelles* influenced loan repayment performance negatively and significantly. This is implies that borrowers who took loan from the project with high interest rate settled by RUSACCO or others non-beneficiaries of the project without their participation would have less loan repayment performance than those participated and took the loan with less interest rate. The reason is that even though the project’s implementation guide assures as it was Community Driven Development (CDD) approach project the *Kebelle* responsible body (KDC and RUSACCO) was not taken in to practice.

All excluded explanatory variables, except the TLU showed that the same sign as it was hypothesized. The TLU was expected to have positive relationship with the loan repayment performance, its result in the analysis was found to have negative effect on the dependent variable. This implies that those borrowers with large number of livestock were not paying their loan on time as compared to those who were having with some or few amount of livestock. The reason could be even if some borrowers had more number of livestock, they did not want to pay their credit in time. This is because, for one thing they know that there is no rule established for punishment of defaulter of the project’s beneficiaries; secondly, the *Kebelle* administrators including the RUSACCO and KDC had borrowed once or twice than the poorest did; and let alone the RUSACCO and KDC enforce or aware to pay the loan taken by their nearer relatives and friendly relationship they the implementers in the *Kebelle* themselves were not paying back and used as revolving fund

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**5.2 Conclusions and Recommendations**

Based on the findings of the study and personal observation of the situation in which the 2007 year loan delivery and repayment performance of the WBFSP’s beneficiaries in the district 2010/2011 production season are found, the following conclusions and recommendations are forwarded.

The study found that older borrowers pay their loan from the project better than younger. Therefore, it is recommended that loan should be given to those who are older; as they cannot migrate from the place they are in easily and can have accumulated wealth that they have acquired through their lifetime- which can be used as hidden collateral. Moreover, the older, through their time can learn well from where money comes from and its difficulty to repay unless someone uses the credit properly.

Findings of this study indicate that female’s loan repayment performance was higher than males in the study area. However, their participation in borrowing was not as the interest of the lender project; they were too small as compared to the males. The concerned responsible bodies, especially, the *Kebelle* RUSACCO implementers and the KDC should no longer continue considering women as housewives and mothers only, focusing mainly on male farmers. Therefore, it is recommended that, women farmers should not face lack of access to credit; at least half of the lenders should be female due to the fact that females are more responsible for childcare and home management and hence they may be concerned more than males about the possible undesirable consequences arising from not paying on time. In addition to this, females usually use their loan to which it seems small activities but fast income generating activities (say, shoat rearing, petty trading, dairying, and poultry).

In the study area,the literate the respondents were the good performance in their loan repayment performance than the illiterate borrowers. Therefore, it is recommended that loan should be allocated to borrowers after necessary training on record keeping, role of saving and credit associations for sustainable income, HIV/AIDS, small business development and entrepreneur, asset creation and basic accounting, the advantage of timely loan repayment, etc; or at least basic education that enables the rural dwellers can make use of microfinance on a sustainable. Because, the educated farmers have more exposure to external environment, to be acquainted with credit use, manuals, and accumulated knowledge through training than the illiterate borrowers.

The study also revealed that farmers who had annual health care expenditure were lowering down loan repayment performance than those who hadn’t had expense for health care. Therefore, it is recommended that training should be given on health related expenses in relation to its negative effect on the credit repayment performance of borrowers. On the other hand, if finance to medicaments is privileged second round loan should be disbursed to the ill borrower after his recovery time so as to use for income generating activities and make him/her pay the entire loan taken by.

Findings of this study indicate that planning, implementing, monitoring and evaluating beneficiaries of the project were found to be crucial by KDC, WFT, and WDC. The KDC and WDC are the main body for the overall controlling activities held regarding the project’s loan in the *Kebelle* and district respectively. Not only this but also they are responsible for the revolving fund management. Nevertheless, no one is taking his/her obligation while the grant given to beneficiaries of the project in the form of loan is revolving or not. Therefore, it is recommended that every responsible body of the government should assist the poor borrowers starting from implementing to end user evaluation; the project’s properties and administration budget (the project has also decentralized budget at *Kebelle* level) should be properly used for the sustainability of the revolving fund of the project. Here appears the problem of adverse selection and moral hazard. Swallowing fund of the project should be abstain and the vicious circle of poverty facing the poor are assumed to be broken if loans are utilized for income sustaining activities; in away there will be excellent loan repayment performance.

The study confirms that loan repayment performance in the area is highly influenced by the size of farmland borrowers had; as the total farm size of borrowers was increased there would be better performance of loan repayment. Therefore it is recommended that increasing farm size land, which is a proxy for a host of factors including wealth and income of households through land allocation from non-used areas, will help to increase agricultural productivity thereby increasing loan repayment performance of the poor farmers. This is because a borrower with larger cultivated land earns more income, be it from crop production or livestock, raising that enables him/her to pay his /her credit on time.

The study revealed that as the amount of net change in equity between periods (saving) of borrowers was increased, the repaid amount of loan by the corresponding respondents of project’s beneficiaries was satisfying than those who weren’t save. Farmers usually save from their proceeds for consumption smoothing purposes throughout the year, for accumulation of wealth, and for contingency purposes in case of bad harvest or accident and they may pay their credit from their saving before their due date. Therefore it is recommended that saving options for the rural households should be encouraged so that they can adjust their investments and consumption patterns. It relaxes the stress on disposable income and improves their risk bearing capacity and meets timely repayment of the poor.

The result of this study showed in its last significance explanatory variable that the existence variation in interest rate of the borrowers in the same year in different *Kebelles* affected loan repayment performance of the project. When borrowers took loan from the project with high interest rate settled by RUSACCO or others non-beneficiaries of the project without their participation, small amount of money that enables the RUSACCO to run the chore of revolving fund. This operating cost should be settled after discussing and reach an agreement with the local communities- application of the CDD approach is essential component of such project credit provider.

Lastly, but unforgettable three supposed to be independent variables were included in the questioner and deleted from the analysis. These are borrowers contact day per quarter with RUSACCO, problem of timeliness of loan disbursement, and distance from the lending institution of the district (project) was not displayed in the regression model. As the dialog box of the regression warned that three of these variables were constants or having missing correlations and therefore deleted from the analysis. The reason was that all borrowers were not having any contact with the RUSACCO once they took their loan even per year regarding the loan repayment meeting; secondly, all the borrowers replied that the loan they received was in about rainy (summer) season and most borrowers use for consumption as they are given in their hardship (shock) time ; thirdly, regarding the distance they borrow from the institution, they do not have any distance barriers as they took from their nearby *Kebelle* or village through their *Kebelles* representative (RUSACCO)- who brought from the district and disbursed to the project’s beneficiaries. As a result these variables was deleted from the model and considered only the 19 earlier mentioned independent variables that could explain variation in the dependent variable. Therefore, it is recommended that the *Kebelle* RUSACCO implementers should contact their borrowers at least once per quarter regarding their respective loan repayment performance. Besides this the Amhara regional state and the district should disburse the borrowers’ loan on time before the shock time of the district so as borrowers do not use for consumption purpose, but for productive or sustainable income generating activities. On the side of loan disbursement location, even though it is good to address borrowers in their nearby but security of the liquid asset should be strengthening.

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**APPENDICES**

Appendix 1 Interview Schedule

**General Instructions to Enumerators**

* Make brief introduction to each farmer before starting the interview, get introduced to the farmers, (greet them in the local way) get her name; tell them yours, the institution you are working for, and make clear the purpose and objective of the study.
* Please ask each question clearly and patiently until the farmer understands (gets your point).
* Please fill up the questionnaire according to the farmers reply (do not put your own opinion).
* Please do not try to use technical terms while discussing with farmer and do not forget to record the local unit.
* During the process put the answer of each respondent both on the space provided and encircle in the choose

 Identification number (code) ------------------

Kebelle name -----------------------------------

Name of enumerator-----------------------------

Date of interview---------------------------------

**Section 1: Individual Background**

1.1 Name of borrower\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.2 Gender\_\_\_\_\_\_ 1.3 Age\_\_\_\_\_\_ 1.4 Education level 0= illiterate 1= literate 1.5 Occupation \_\_\_\_\_\_\_\_\_\_\_\_

1.6 Marital status a. Single b. Married c. Divorced d. Widowed

1.7 What is the size of your family? \_\_\_\_\_\_\_\_\_\_\_Males \_\_\_\_\_\_\_\_Females

1.8 a. How many people in your HH are below 10 years\_\_\_\_\_\_\_

 b. Disabled members and elders above 63 years\_\_\_\_\_\_\_

3.

**Section 2: Economic Data**

2.1 What is your annual daily income in this production year (in ETB)? \_\_\_\_\_\_\_\_\_\_

2.1 Do you own any of the following? (Put down numbers).

 Cattle\_\_\_\_\_\_\_\_\_\_ Shoat \_\_\_\_\_\_\_\_\_\_\_\_ mule\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Enterprise of any type\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Others (State) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.3 a. How much total farm size do you have in the year 2010/2011? \_\_\_\_\_\_\_\_\_\_\_ ‘*timad*’

 b. Land allocated for crop production \_\_\_\_\_\_\_\_\_\_‘*timad*’ grazing \_\_\_\_\_\_’ *timad’;* Fallow \_\_\_\_\_’*timad*’;

 If others (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*timad*

2.4 Fertility status and soil character of the plots as perceived by the borrower 1= good 0= bad

2.5 a. Do you feel that your holding is adequate to satisfy your family needs? 1= yes 0= no

 b. If no, which of the under listed activities did you perform to raise your income?

 i. Petty trading ii. selling labor iii. selling fire woods and charcoals

 iv. If others (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.6 What was your annual income at this year (2010/2011).

|  |  |
| --- | --- |
|  |  Amount  |
|  |  |
| Annual gross farm income (in ETB) |  |
| Annual gross off-farm income (in ETB) |  |
|  |  |

2.7 a. Did you experience any food gap before entering into the project and over the subsequent years?

 b. If yes, Year of food gap \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. c. Number of months\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 d. What do you think is for food gap?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.8 a. What are the major areas of your investment to generate income from World Bank Food Security Project (WBFSP) credit?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Is there any improvement in the accumulation of physical assets after entry of the Project?
 c. If yes, specify the accumulated assets over the subsequent years?

|  |
| --- |
| Year |
|  |
| \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ |
|  |  |  |  |  |
| Accumulation of Physical Assets | Yes/No | Yes/No | Yes/No | Yes/No |
| Specify the assets | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ |

2.9 Is natural hazard the reason that you didn’t pay still? 1=yes 0=No

2.10 Are socio-economic factors or institutional factors that affect you to pay your loan timely?

 0=socio-economic 1= institutional

**Section: 3** **Institutional and Social Factors**

3.1 Are you a member of any social groups (Iquip, Idir, Cooperatives, etc) after entry into this project? 1=Yes 0=No

 b. If yes, specify the social groups: 1.\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_ 3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3.2 How much amount of money does you saved during this production year starting from the entry of the project?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.3 a. Perceived condition of the prevailing output price and market Service 1= fair 0=bad

 Distance from market (hours) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.4 a. Did you celebrated social ceremonies in 20010/2011 fiscal year? i. wedding ii. funeral ceremonies

 iii. engagement iv. circumcision v. Idir/Iqub vi. others (specify) \_\_\_\_\_\_\_\_\_\_

 b. What were you prepared for these ceremonies and how much do you estimate to have invested on it? \_\_\_\_\_\_\_\_\_

 3.5 a. Have you gone to a health center for treatment? 1=Yes 0= No

 b. If yes, how much did you pay? \_\_\_\_\_\_\_\_\_\_

 c. The source of the money you paid \_\_\_\_\_\_\_\_\_\_\_\_

 d. Distance to get health center\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3.6 a. What is your opinion about the project’s planning, implementation, monitoring and evaluation of the project by KDC, WFT,

 and WDC? 1= good or fair 0= weak

 b. What kind of assistance did you get by KDC regarding the loan you took?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 How many days per year?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. What kind of assistance did you get by WFT regarding the loan you took?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How many days per year?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 d. What kind of assistance did you get by WDC regarding the loan you took?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How many days per year?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.7 How many days per quarter are contacting with RUSACCO? \_\_\_\_\_\_\_\_\_\_

3.8 a. Are you aware of the revolving fund? 1=Yes 0= No

 b.If yes, How many times have been revolving the loan in your Kebelle?\_\_\_\_\_\_\_\_\_\_

3.9 How much amount did you receive from this project as a loan? \_\_\_\_\_\_\_\_\_\_ETB and the year of receiving the

 loan\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Why did you borrow the loan? 0= consumption 1= on-farm inputs and consumption

 c. Was credit received adequate and timelines? 1= Yes 0= No

 d. Are you repaying your loan? 1= Yes 0= No

 e. If yes, (fill the table below)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Repayment year\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| Amount of repayment per year (in ETB) | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |

 f. If No, why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 g. Distance from your credit source (hrs) \_\_\_\_\_\_\_\_\_\_\_\_

3.10 a. What was the interest rate while you borrowed the loan from the project?\_\_\_\_\_\_\_\_\_

 b. Who set this interest rate?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3.11 a. Is there an improvement in the access to health services after entering into the project? 1=Yes 0= No

 b. What are the improvements? i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iv \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.12 a. Is there an improvement in the household ability in sending your children to school? 0= No 1= Yes
 b. If yes, what are the improvements? i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.13 a. Have you attended any skill development training under this project? 1=Yes 0=No

 b. If yes, specify the trainings: i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iv \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. If yes, what are the improvements? i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iv \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.14. Did you borrow the loan for off-farm inputs or others? 0= off-farm inputs 1= others

3.15. What was the effect of group formation on your repayment performance?

 1 = good 0 = bad

 3.16 a. What do you think is the main reason that borrowers of WBFSP do not pay their matured loan timely (in your Kebelle)

 0= Socio-economic factors 1=Institutional factors

 b. Can you mention other factors? i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3.17 Can you sustain the present improvement without any further grants (loan)? Fill the table below.

|  |  |
| --- | --- |
| Sustain |  How (why)? |
| Can sustain |  |
| Cannot sustain |  |

3.18 Can you describe any activity of the project that turned your life (as a case)?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.19 a. Did you get credit from WBFSP during 2010/2011? 1= yes 0= no

 b. If yes, who did provide you? i. Government ii. Your relative iii Aid from abroad iv. KDC v. RUSACCO

 vi. others (specify) \_\_\_\_\_\_\_\_

3.20 a. Who selected you as a beneficiary of the project in the year 2007? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. What was the selection method?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.21 Who have more responsibility to make decision on the credit taken? a. husband b. wife c. both

3.22 What major factors did you consider very essential next to consumption which were preferred to loan repayment?

 (Rank in order of importance).

 a. housing \_\_\_\_\_\_\_ c. school fee \_\_\_\_\_\_\_\_\_\_\_\_\_

 b. clothing\_\_\_\_\_\_\_ d. medical expenses e. others (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.23 a. At what time did you pay back your debt? \_\_\_\_\_\_

 b. If not repaid on the due date, what actions did the lending institution take on you?\_\_\_\_\_\_\_

 c. Did you know the end of grace period/matured loan? 1= yes 0= no

 d. If yes, why you become late? \_\_\_\_\_\_\_\_\_\_\_\_

3.24 What was the effect of group formation on your repayment performance?

 1= good 0=bad

3.25 What was your opinion on the general procedure of loan acquisition and repayment conditions?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.26 Do you suggest any recommendations for the project?

 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3.27 What was your opinion on your area’s loan acquisition and repayment conditions?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (To be answered by the enumerator)

**Appendix 3 Estimated Number of livestock in number and TLU equivalent**

|  |  |  |  |
| --- | --- | --- | --- |
| SerialNumber. | Livestock | Population | Percent |
| Number | TLU |
| 1 | Cattle | 56,806 | 39,764.20 | 61.4 |
| 2 | Sheep and goat | 189,213 | 18,921.30 | 29.2 |
| 3 | Equine | 13,096 | 6132.50 | 9.5 |
|  | Total | 259,115 | 64,818 |  |

Source: (CSA, 1999)

**Appendix 4 Random Number tables for the selected of five rural *kebelles* and 120 borrowers**

To use random number table in selecting 5 rural *Kebelles*using ENA for SMART Software ranged 1 to 18, Number: 5

17 16 11 13 3

|  |  |  |
| --- | --- | --- |
| Geographical unit(Name of *Kebelles*) | Population size(Number of borrowers in the year 2007) | Assigned random table (*Kebelles* selected randomly) |
| 2 (Emegwa) | 20 |  |
| 3 (Gurmign) | 15 |  |
| **4 (Zeram)** | **40**  | **1** |
| 5 (Ago) | 20 |  |
| 6 (Dasa) | 79 |  |
| 7(Angewa) | 24 |  |
| 8 (Kewaryat) | 20 |  |
| 9 (Astoya) | 20 |  |
| 10 (Wemso) | 20 |  |
| 11 (Ayatmeda) | 32 |  |
| **12 (Bash)** | **25**  | **2** |
| 13 (Agemsa) | 56 |  |
| **14 (Tarma)** | **20**  | **3** |
| 16 (Tachigem) | 20 |  |
| 23 (Kolomargefya) | 20 |  |
| **24 (Chachinaysata)** | **20** |  **4** |
| **25 (Dengeze)** | **54** |  **5** |
| 26 (Mayagot) | 20 |  |
|  |  |  |

The number of population size (borrowers) in the above 5 randomly selected rural Kebelles is:

 40 +25 + 20 + 20 + 54 = 159

From the1180 borrowers 120 were selected randomly as follows.

**From Zeram Kebelle (Z)**

159 = 120

40=Z Z= 120\*40/159= 30.19 =30

**Similarly, from Bash Kebelle (B) From Tarma Kebelle (T)**

159 = 120 159 = 120

25 = B B= 120\*25/159= 18.87 =19 20 = T T= 120\*20/159= 15.09 =15

**From Chachinaysata Kebelle (C) From Dengeze Kebelle (D)**

159 = 120 54 = D D= 120\*54/159= 40.75

20 = C C= 120\*20/159= 15.09 = 15 D=41

159 = 120

Z + B+ T + C + D = 30 + 19 + 15 + 15 + 41 = 120

**Similarly, using random number table for borrowers:**

**Random Number table for Z**

Range: 1 to 40, Number: 30

25 32 11 14 40 34 4 10 12 37 33 17 8 35 6 28 23 13 9 21 3 31 26 2 29 18 39 16 38 24

**Random Number table for B**

Range: 1 to 25, Number: 19

12 8 9 17 6 22 11 4 20 13 3 14 16 23 5 18 1 10 21

**Random Number table for T**

Range: 1 to 20, Number: 15

5 16 12 19 13 8 11 2 4 17 20 14 6 15 10

**Random Number table for C**

Range: 1 to 20, Number: 15

6 15 20 10 1 2 19 7 12 8 14 4 18 13 3

**Random Number table for D**

Range: 1 to 54, Number: 41

41 25 32 43 48 51 4 45 16 40 3 1 46 23 8 42 21 36 7 13 44 6 30 26 9 15 33 47 14 35 10 39 38 50 12 49 2 22 19 52 11

After writing serial numbers infront of each borrowers of the year 2007 in their respective *Kebelles*, the above numbers given to the borrowers were selected.

**Appendix 5 The MLR Model Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mode  | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |
| R Square Change | F Change | df1 | df2 | Sig. F Change |
|  |  |  |  |  |  |  |  |  |  |
| 1 | .907 | .822 | .788 | 315.14376 | .822 | 24.343 | 19 | 100 | .000 |

a Predictors: (Constant), Training given to beneficiaries, Dependency ratio , Gender of the borrowers, Adequacy of loan from the project , Amount of saving in ETB, Amount of loan borrowed from the project in ETB, Age of borrowers in years, Variation of interest rate (existence of high interest rate), Celebrate social ceremonies, Health care expenditure , Sending children to school, Annual gross off- farm income in ETB, Educational level of the borrower, Main reason you think for not repaying matured loan timely in your Kebelle, purpose of borrowing, Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC, Total livestock owned in livestock unit , Farm size in hectares , Annual gross on- farm income in ETB

b Dependent Variable: Repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB

**Appendix 6 ANOVA Table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mode |   | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 45935225.007 | 19 | 2417643.421 | 24.343 | .000(a) |
|   | Residual | 9931558.649 | 100 | 99315.586 |   |   |
|   | Total | 55866783.656 | 119 |   |   |   |

a Predictors: (Constant), Training given to beneficiaries, Dependency ratio , Gender of the borrowers, Adequacy of loan from the project , Amount of saving in ETB, Amount of loan borrowed from the project in ETB, Age of borrowers in years, Variation of interest rate (existence of high interest rate), Celebrate social ceremonies, Health care expenditure , Sending children to school, Annual gross off- farm income in ETB, Educational level of the borrower, Main reason you think for not repaying matured loan timely in your Kebelle, purpose of borrowing, Planning, implementing, monitoring and evaluating end users by KDC, WFT, WDC, Total livestock owned in livestock unit , Farm size in hectares , Annual gross on- farm income in ETB

b Dependent Variable: Repaid amount of loan by the corresponding respondents of World Bank Food Security Project beneficiaries in ETB

**Appendix 7 Excluded Variables**

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Coefficients |  t |  Sig. |
|  B |  Std. Error |
| (Constant) | 88.096 | 364.161 | .242 | .809 |
|  |  |  |  |  |
| CHLDSCOL-X5 | -38.494 | 75.109 | -.513 | .609 |
| REASON-X6 | -82.914 | 74.208 | -1.117 | .267 |
| ONFARM-X9 | .024 | .022 | 1.106 | .272 |
| OFFARM10 | -.006 | .031 | -.205 | .838 |
| TLU-X12 | -32.977 | 32.877 | -1.003 | .318 |
| ADQLOAN-X13 | 52.859 | 86.893 | .608 | .544 |
| AMUTLON-X15 | -.059 | .195 | -.303 | .762 |
| CERMONY-X16 | 97.396 | 74.934 | 1.300 | .197 |
| DEPRATIO-X17 | -1.884 | 2.310 | -.816 | .417 |
|  BORPURP-X18 | 125.260 | 77.247 | 1.622 | .108 |
| TRAING-X19 | 129.637 | 88.016 | 1.473 | .144 |

Predictors in the Model: (Constant),

X5 = Sending children to school (CHLDSCOL) dummy (1 if yes 0 otherwise)

X6 = Main reason you think for not repaying matured loan timely in your *Kebelle* (REASON) dummy (1 if yes 0 otherwise)

X9 =Annual gross on- farm income in Birr (ONFARM)

X10 = Annual gross off- farm income in Birr (OFFARM)

X12 = Total livestock owned in livestock unit (TLU)

X13 = Adequacy of loan from the project (ADQLOAN) dummy (1 if adequate 0 otherwise)

 X15 = Amount of loan borrowed from the project in Birr (AMUTLON)

X16 = Celebrate social ceremonies (CERMONY)

X17 = Dependency ratio (DEPRATIO)

X18 = Purpose of borrowing (BORWPURP)

X19 = Training given to beneficiaries (TRAING)