ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
REGIONAL AND LOCAL DEVELOPMENT
STUDIES (RLDS)

DETERMINANTS Of RURAL LIVELIHOOD DIVERSIFICATION IN ETHIOPIA: THE CASE OF BASONA WARANA WOREDA OF NORTH SHEWA AMHARA REGION

THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES, ADDIS ABABA UNIVERSITY, IN PARTIAL FULFILLEMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ARTS IN REGIONAL AND LOCAL DEVELOPMENT STUDIES (RLDS)

BY
GASHAW ABUHAY KEBEDE

JULY, 2007

ADDIS ABABA UNIVERSITY

SCHOOOL OF GRADUATE STUDIES

REGIONAL AND LOCAL DEVELOPMENT STUDIES (RLDS)

DETERMINANTS OF RURAL LIVELIHOOD DIVERSIFICATION IN ETHIOPIA: THE CASE OF BASONA WARANA WAREDA OF NORTH SHEWA AMHARA REGION

BY

GASHAW ABUHAY KEBEDE

Approved By Board of Examiners

1. Chairman, Department Graduate Committee	Signature
2. Advisor Wortnel Negatu	
3. Internal Examiner Ignatius Mbeyengwa	Mbeyengwa
4. External Examiner Issac Paul	Issac P.

Table of Content

Page

List of Tables I

List of Figures II

List of Annex II

List of Appendix II

Acronyms III

Acknowledgements IV

Abstract V

1. CHAPTER ONE -INTRODUCTION 1

1.1 Background 1

1.2 Statement of the Problem 12

1.3 Objectives and Research Questions 14

1.4 Significant of the Study 14

1.5 Scope and Limitation of the Study 15

1.6 Organization of the Paper 16

2. CHAPTER TWO -REVIEW OF LITERATURE 17

2.1 Concepts and Definitions 17

2.2 Theoretical and Empirical Literature 18

2.3 Food Security and the Sustainable Livelihood Approach 30

3. CHAPTER THREE -RESEARCH DESIGN AND DATA COLLECTION 32

3.1 Sampling Procedure 32

3.2 Methods of Data Collection 33

3.3 Data Analysis 34

3.4 Hypotheses and Definition of Variables 34

3.5 Model Specification 36

4. CHAPTER FOUR -RESULTS AND DISCUSSIONS 39

4.1 Brief Description of the Study Area 39

4.2 Descriptive Analysis 43

4.2.1 General Demographic and Socio-Economic Features Of Households 43

4.2.2 Livelihood Strategies and Source of Household Income 45
4.2.3 Analysis of Socio-Economic Characteristics and Livelihood Diversification 53
4.3 Determinants of Livelihood Diversification 63
5. CHAPTER FIVE -CONCLUSION AND THE WAYS FORWARD 71
5.1 Conclusion 71
5.2 The Ways Forward 73
References 75

List of Tables

Page

Table 2.1 Effects of livelihood diversification....23
Table 3.1 Sample size of households size for selected kebeles....32
Table 4.1 Demographic characteristics of households....43
Table 4.2 Ownership of key farm assets....44
Table 4.3 average distance of households from nearest market places and main roads....44
Table 4.4 Livelihood strategies of households....45
Table 4.5 Responses of households on food availability throughout the year....48
Table 4.6 Interests of households about future livelihood strategies....49
Table 4.7 Types of off-farm activities and income accrued....50
Table 4.8 Off-farm income by sex of household head....53
Table 4.9 Academic status of household head and livelihood diversification....54
Table 4.10 Sex of household head and livelihood diversification....55
Table 4.11 Demographic and educational characteristics of household members and livelihood diversification....57
Table 4.12 Land holding size livelihood diversification....58
Table 4.13 Equib membership and livelihood diversification....59
Table 4.14 Access to irrigable land and livelihood diversification....59
Table 4.15 Access to financial assets and livelihood diversification....60
Table 4.16 Distance from nearest market places and main roads and livelihood diversification....62
Table 4.17 Logistic Regression Results....63

List of Figures

Figure 2.1 The Sustainable Livelihood Framework 27
Figure 4.3 Income share of Off-farm and Farm Activities 47

List of Annex

Annex -1 Pearson's Correlation Coefficient of Discrete Variables 82
Annex -2 Pearson's Correlation Coefficient of Continuous Variables 83

List of Appendix

Page

Appendix-1 Household Questionnaires.....84

Acknowledgement

Above all, I am highly grateful to the Almighty God who provided me the nurturing spirit and stamina during the courses of pursuing my study. Only with the help of God but thorough people the most difficult times were managed positively.

My special thanks also goes to my advisor Dr. Workneh Negatu not only for his invaluable technical supports and constructive comments, but also for his humane understanding. I have special obligation to extend my heart felt thanks to my families. I am also highly indebted to my friends Esubalew Alehegn, Berihun Tefera, and Mollalign Mezgebu who provided me technical support in writing the thesis. I am thankful to Anteneh Solomon and to the staffs of North Shewa Zone Finance office, Rural and Agricultural Development office and Basona Warana Rural and Agricultural office for facilitating and providing the necessary information during data collection. Special debt has to be acknowledged to Abdulkadir Eado for providing his computer in times of need. I would like also to extend my thanks to Ato Alemayehu Tasew and Maseresha Seleshi for their advice and encouragement. I am also grateful to data collectors and household heads that help me in collecting and providing genuine information during the field survey.

Acronyms

ADLI - Agricultural Development Led Industrialization

WB- World Bank

SSA – Sub-Saharan Africa

SLF – Sustainable Livelihood Framework

DA - Development Agent

TLU – Tropical Livestock Unit

RNFE – Rural Non – Farm Economy

MFI – Micro Finance Institution

GDP- Gross Domestic Product

VS - Versus

SUNARMA - Sustainable Nature Resources Management Association

SPSS – Statistical Package For Social Science

Abstract

In Ethiopia the smallholder farming is increasingly constrained by a multitude of problems to remain as a major source of livelihood for the ever growing rural labor. In such a scenario a vibrant off-farm sector can be an alternative means of livelihood. . In relation to this it necessary to understand issues and factors affecting livelihood diversification. The major objective of this study was to identify determinants of rural livelihood diversification. The study was conducted in North Shewa Basona Warana Woreda where 200rural households were selected randomly from 5 randomly selected kebeles.

Simple statistical description and Logit model were employed to analyze data. The simple descriptive statistics revealed that about 60 percent of households diversify their economic activities towards Off-farm activities and 18.61 percent of their net annual income was generated from these income sources. The Logistic regression result also indicated that sex and educational status of household head, size of land and livestock and access to public assets such as road and market places were found to be significant determinants of rural livelihood diversification .Female headed, literate household heads and households who own smaller land holding and livestock as well as who are located near to nearer to market places and main roads were the ones that diversified their economic activities. Therefore, investing in rural roads and town growth and on education needs consideration in promoting rural livelihood diversification by policy makers.

Key words: livelihood diversification, assets, rural development, rural sector.

CHAPTER ONE

Introduction

1.1. Background

The contemporary world comprises both affluent and poor nations where there is a huge gap in their level of development. Though the affluent nations are small, they amass the world's largest resources and their citizens on average lead a descent standard of living. The function of the world economy is largely dictated by policies and economic operations of those nations. In contrast to this fact poor nations, which constitute the largest number of countries in the world, benefit a small part from the world's economy. Unlike the people in rich countries, citizens in the poor nations suffer from the different forms of poverty. Taking the poverty emanated from this unfair distribution of resources among nations some people coined the phrase "Poverty amidst plenty." It seems less likely that the gap between the two world economies will narrow down in the near future (Dean et al., 2005).

However, as the classical development economists have explained some developing countries had brought remarkable economic progress during the last few decades whereas a majority of others remain in the poverty traps of under investment, low productivity and extreme poverty (Barrett and Swallow, 2005). This positive trend of development portrays the fact that the poverty scene of many contemporary poor countries can be changed.

Put differently, some progress has been registered in reducing poverty in few developing countries over the past two decades. Many more people have started to enjoy a descent standard of living, with average incomes in developing countries having almost doubled on real terms between 1975 and 1998, from $

1300 to 2500 (1985 purchasing power parity US$). Behind this record of overall progress lies, however, a more complex picture of poverty across countries, regions and groups of people (Ayalneh ,2002)

There are different forms of poverty: absolute poverty, relative poverty and subjective poverty. Absolute poverty can be viewed as the inability to secure the minimum basic needs for human survival (World Bank, 1990). Lamin (2000) define absolute poverty as a poverty threshold below which living becomes mere physical survival. Relative poverty refers to a state of having less than others. The relatively poor are those whose incomes are lower compared to that of the rest of the community even if they are in a position to secure an adequate level for survival (Yohannes, 1996). Subjective poverty on the other hand is defined based on the premise that people are the best judges of their own situation and that their opinions should ultimately be the decisive factor in defining poverty (Mekonnen 1996).

African Development Report (2002) explained that more than any other region of the world, African faces some of the most difficult development challenges. According to the report close to half of the region's population stile lives in absolute poverty and the continent remains the least developed region. Compared to other regions of the world, both the incidence and depth of poverty in the continent are high whatever poverty measurement is used. For example in 1998, the rate of poverty was close to 50 percent. The corresponding rates for south Asia, East Asia and Latin America, were 40 percent, 15 percent and 12 percent respectively.

The global community agreed on the need for concerted action to redress the global problems of poverty, gender imbalances and environmental degradation. One of the eight millennium Development Goals formulated was to cut by half the percentage of people living on less that 51 per day between the year 1990 and 2015. However this goal is proving very difficult to achieve in many

developing countries. Indeed, many countries in Africa have actually experienced increased poverty rates and n egative3 per capital income growth since 1990 (Barrett and swallow, 2005).

Africa is one of the poverty-stricken places in the world more than any other region .Dean et al., (2005) revealed that close to half of the region's population still lives in absolute poverty. However, there are still variations among African countries. Countries in Sub-Saharan Africa (SSA) are the ones that take the lion share of poor people. In this part of the continent, the poverty picture is very gloomy. Both the income and the non-income well belong measurement indicators reflect that the region stood first from the last. Ayalneh (2002) has clearly indicated that 291 million people who account nearly 50 percent of the regions population live in absolute poverty, just struggling to survive on less than a dollar a day per person to meet their basic needs.

Though rich nations are not devoid of poverty the severity of poverty in those rich countries is quite different from that of poor countries. Poverty in many rich countries is a short term, transitory phenomena unlike poor countries where it is long-term structural phenomena (Dean et al., 2005).Furthermore, poverty in low-income countries is a predominantly rural phenomenon. For example, the African Development Report (2002) pointed out that rural poverty in SSA Countries Contributes more than 60 percent of the incidence of poverty.

As a number of empirical evidences suggest poverty and livelihood strategies of people are highly interlinked (Barrett and Swallow, 2005). In many poor countries agriculture has remained the pillar of their economy, which serves as source livelihood & employment for the labor force. Though still agriculture is central to the economies and livelihood strategies of poor people in poor as source foreign exchange, during the last few decades rural households in poor countries have witnessed an increasing trend of economic diversification away from a predominantly farm to non-farm and/or off-farm sector (Bryceson, 2005;

Ellis 2000; Francis, 2000; Barrett and Swallow, 2005). Albeit, farming is an important constituent of household livelihood strategies in poor countries new avenues of off- farm income generation activities are becoming evident. .

As Tellegen (1997) has elaborated before the 1970s the rural African economy was an agricultural economy. However, as he elaborated after the period of 1970s onwards many rural households have started shifting their economic activities towards the non-farm/off-farm activities either in combination with farming or as a single of source of livelihood. However this growing trend of economic diversification was given little recognition from policy makers and rural development practitioners.They assumed agriculture as the only livelihood strategy of rural house hold and impliedly as the only intervention area to address rural poverty (Bebbington, 1999; Dean et al., 2005; Escobal, 2001).

However, currently this increasing trend of shift in economic activity has started draw the attention of policy makers and development practitioners as an alternative avenue opened to address rural poverty and/or to bring rural development. The conventional sector based approach, which assumes agriculture as the only area for rural development intervention became less realistic (Bebbington, 1999; Ellis, 2000; Masefield, 2001; Escobal, 2001).

This is one of the paradigm shifts in the rural development discourses. Hence in the contemporary poor world, livelihood diversification vis-à-vis rural poverty reduction becomes a central theme of discussion (Ellis, 2000, Scoones 1998; Carney; 1999). Especially the strong desire to address poverty among the international community has brought livelihood diversification at the center of rural poverty reduction and development agenda (Barrett and Swallow, 2005).
However, the question arises whether all livelihood diversification necessarily taken as a panacea for rural poverty reduction. Of course, there are some contrasting views and empirical evidences across regions and countries regarding the effect of livelihood diversification on rural poverty reduction. In

some instances livelihood diversification was found to be means of wealth accumulation particularly among better-of rural households and in other situations it is used as a mere survival strategy by poor rural households (Ponte, 2002; Ellis, 2000; Reardon, 1997; Lanjouw, 2001). That is livelihood diversification for the poor and for the rich has various implications. Then, the question of what could be the relationship between rural poverty and livelihood diversification and why a differential impact of livelihood diversification among poor and better off households remains as an important area of discussion. In the livelihood literature the closer examination of the poverty and asset dynamics and the consequent livelihood diversification is given due emphasis.

Beyond the income or consumption based definition, literature on livelihood interprets poverty as lack or limited asset endowments. The idea is that households or individuals with low or no assets are considered as poor .This limited asset base affects their livelihood strategy which in turn has a far reaching implication on their livelihood strategies. The poor engage more likely in low return activities and unable to come out of poverty traps (Barrett and Swallow, 2005).

Assets are considered as building blocks upon which the different livelihood strategies are conditioned (Reardon et al., 2000; Ayalneh, 2002). Asset endowment frames the type of livelihood strategy of households and possibly the amount of income generated through the activity. Households or individuals with large assets are considered as wealthy and have a greater ability to engage in or to diversify into lucrative off-farm activities. Yet the opposite happens to the poor. This is where a poverty reduction intervention should begin with in a way that can help the poor augment their assets so that they can have the capacity to engage in better rewarding activities (both the farm and the non-farm activities) and improve their well-being (Barrett and Swallow, 2005; 2002; Swift and Hamilton, 2001).

Generally assets are determinants of livelihood diversification but having differential effects on livelihood strategies of rural households (Barrett et al; 2001). The most important assets, which are widely discussed in the livelihood literature, which causes a difference on rural livelihood, include the following.

- Human capital (education, skills, knowledge, health etc)
- Financial capital (saving, credit, income, livestock etc)
- Natural capital (land, forest, water etc)
- Physical capital/road. irrigation, electricity and other infrastructures
- Social capital (social ties, supports, trust, networks etc (Scoones, 1998; Ellis, 2000; Carney, 1998; Swift and Hamilton, 2001).

Here the argument is that households or individuals that have better access and control over the various assets can engage in rewarding activities and can bring a positive difference in their living. They can generate better income and thereby ensure their food security and come out of poverty (Swift and Hamilton, 2001; Barrett and Swallow, 2005). Based on the asset endowments, literature on livelihood classifies rural households in a distinct way. According to this argument rural households are not homogenous groups. Rather some households have large assets and are rich farmers while others have low assets or are poor farmers. It also indicates that rural households rely on non-farm activities in making their living, which implies that, there are multiple sectors in the rural economy besides farming. Therefore, according to this perspective rural households have a different ability to engage in rural livelihoods and rural livelihood does not necessarily mean farming alone (Escobal, 2001; Barrett and Swallow, 2005).

For this very reason, in the contemporary development forum building the asset capacities and supporting the various livelihood strategies of rural poor which they want to engage in is found to be more appropriate and feasible way of addressing rural poverty .The monolithic sector based approach that proposes a package of external inputs to increase agricultural productivity does not always

fit to the livelihood strategies of all rural households (Barrett and Swallow, 2005; Masefield, 2001; Belaineh , 2002).

Among the various interventions that can be designed in building the assets of households may include: provision of public infrastructures (such as road and telecommunications) and building human capital through trainings and education. Once these mediums are created, people will pursue the type of livelihood strategy which they have a comparative advantage. Households that have large land size and livestock may choose to rely on farming while households with better education and entrepreneurial skills could diversify their economic activities towards off-farm or non-farm activities (Alemneh, 2003; Scoones; 1998; Reardon et al., 2000; Bryceson, 2005). Through this process some households could leave agriculture and engage in off-farm activities which in turn might reduce the pressure on land and other natural resources. A vibrant off-farm economy can also have a positive back-ward and forward linkages with the agricultural sector and on the overall growth of the rural economy (Mulat and Teferi; 1996).

The Ethiopian Economy and Policy Environment

The Ethiopian economy largely dependents on the agricultural sector where the contribution of the sector to the country's economy in terms total GDP, as source of employment and foreign exchange currently stood at 50, 83 and 85 percents respectively (Workneh, 2005; Getnet, 2005).

It seems based on the rationale that the sector has multi-various roles in the country's economy, the current government has given priority to the growth of the agricultural sector and envisaged to bring long term development via it. However, the irony is that the sector has shown little progress during the last few years. Degefa(2005) argued that in contrast to the government's strong conviction to bring rural development and ensure the well-being of small holders

the last two decades were a period of downward spiraling in the well being of the people and in the words of Rahmato this is what is called "agricultural involution."

In similar vein, the World Bank Report (2005) asserted that during the last 12 years on average agricultural growth in the country was 2.2 percent against the population growth rate of 2.6 percent. This indicates that population growth has out passed growth in agricultural production. The agricultural production has failed to keep pace with the rate of population growth. The report also predicts that without labor mobility across sectors the poverty incidence in the country by 2015 will be 36 percent *"which is similar to its 2004 level and slightly less than 1990."*

Bird's eye view of the poverty and food insecurity picture in the country could reflect the fact that the small holder farming in Ethiopia could not continue as single source of livelihood for the growing population.Though poverty is a multi-dimensional issue, by any standard Ethiopia is one of the poorest countries in the world. According to World Bank (2005) health and poverty report the country's per capital GNP is US$100 against the average SSA countries' per capital GNP (US $ 5080). The report indicates that millions of Ethiopians are trapped in abject poverty and will continue to live in absolute poverty.

Its spatial distribution also reflects that poverty in Ethiopia is more rampant in rural areas where about 83 percent of the country's population live. From the total rural and urban population about 45 and 37 percent respectively lives below the poverty line (1$ per a day). Moreover, poverty is much sever and deeper in rural areas as compared to urban settings. On average the incomes of rural and urban poor is far from the absolute poverty line (i.e. US $ 1 per individual per day) by 12.1% and 10.1% respectively (Tasew, 2004). However, the idea of poverty goes beyond mere income or economic deprivation. It encompasses a wide range of social, political, environmental and cultural issues.

The picture on these dimensions of poverty is not quite different from the income poverty indicators.

Recent empirical evidences on social development indicators revealed that Ethiopia is still among the least performing countries in SSA countries and the complexity of the situations make poverty worrisome. For example, World Bank (2005) Health and poverty report shows that access to improved sanitation stood 55 percent in SSA countries against the 15 percent in Ethiopia similarly the report indicates that roughly 24 percent of Ethiopians have access to improved drinking water in contrast to SSA countries 55 percent. Facts on life expectancy and literacy rate are not different from other poverty measurements. Life expectancy for Ethiopians on average is 42 years against the SSA 46 years. 61 percent of Ethiopians are illiterate which is much higher than that of SSA average of 39 percent. Other empirical findings conducted using qualitative participatory techniques revealed the same fact that the poverty situation is getting worse and worse in the country (Yared, 2002; Degefa, 2005).

The food insecurity situation that has strong association with poverty is the other bad scenario, which the nation is known for. Although the figure varies for different years and places, every year about six million Ethiopians need food aid (Degefa, 2005). World Bank (2005) also estimated that half of the country's population is found to be food insecure of who disproportionately are found in rural areas. The poverty and food insecurity problems generally emanate from the structure of the economy. In Ethiopia the growth of the agricultural sector that is considered as the pillar of the economy, is curtailed by institutional, human, natural and other related factors. That is high population pressure, environmental degradation, law technological adoption, improper rural institutional selling imperil the performance of the smallholder agriculture (Tasew, 2004, Senait, 2002 Tesfaye ,2003).

High population growth and the concomitant reduction in land holding coupled with asset depletions at household levels and the recurrent drought all put the agricultural sector in a precarious position (WB, 2005; Mulat, 2001 Ayalneh, 2002: Masefield, 2001; Yared, 2001 ; Demissie and Workneh, 2004).

Alemneh (2003) particularly indicated that the smallholder agriculture in the highlands of Ethiopia is caught in the "poverty, food insecurity and environmental degradation traps". He claims that in such scenario absorbing the growing extra labor becomes a formidable challenge for the country.
The land holding size which rural households depend on in making their living has already fallen below the minimum threshold (Masefield, 2001). Due to the ever-increasing rural labor the most fragile areas are being converted to farmlands. Still underemployment and unemployment is escalating. However, this would not mean that the rural livelihood path is on the verge to be closed.

Rather in such a scenario the off-farm and non-farm activities can be taken as an additional or alternative source of employment and income source and as a route out of poverty. From these activities an additional income can be generated .This can help address the problems of food insecurity and poverty among rural households whose income from farming become meager (Mular and Teferi, 1996; Mulat, 2001). As Demissie and Workneh(2004) discussed, though farming is the dominant form of livelihood due to both pull and push factors rural households participate in various types of off-farm activities. Therefore, both the farm and the off-farm sectors can be promoted simultaneously so that there can be positive synergy in the rural economy. Currently, livelihood diversification is increasingly being appreciated as the most important entry point to address rural poverty and food insecurity (WB, 2005).

However, the reasons for livelihood diversification are quite different among different households. Some households diversify for distress reasons while others for accumulation purposes. Consequently the effect of livelihood

diversification is different among different households. It could be employed as a mere survival strategy or a means of wealth accumulation (Ellis, 2000; ponte, 2002; Lanjouw, 2001). Therefore, livelihood diversification may not necessarily lead to improved well-being.

In its broader sense livelihood diversification is framed or determined by a range of socio-economic factors and it various from region to region or from household to household. Therefore, it seems crucial to scrutinize the determinants of livelihood diversification among rural households. Especially in the poorest countries, like Ethiopia, where the agricultural sector is becoming less viable identifying the determinants of livelihood diversification and enhancing the sustainable livelihood diversifications that might have positive effects on the lives of the people and their physical environment seems a timely issue.

However, the rural development policies Of Ethiopian government is generally anti-livelihood diversification. According to Ellis (2005) the rural development policy of the government rather "traps people in agriculture". In this regard the land tenure policy is raised as a typical example. If farmers left their land for about 3 or 4 months in search of livelihood in other areas their land would be taken and reallocated to other people by the local authorities (Mulat, 2001).
The food security or poverty reduction strategies put emphasis on the role of agricultural sector and give little room for livelihood diversification outside farming (Yared, 2001; Mulat 2001; Masefield, 2001; Tasew, 2004).

The government adopted Agriculture- Development- Led Industrialization (ADLI) as a long-term development strategy. This strategy is based on the theoretical underpinning of the classical authors where growth in the agricultural sector is expected to have a trickle-down effect on other sectors of the economy. The agricultural sector is expected to serve as a big push for the rest of the economy (Senait, 2004; Tasew, 2004; Degefa, 2005; World Bank, 2005).The government

wants to realize this objective by increasing agricultural productivity through the provision of a package of extension services (Tasew, 2004; Senait, 2002)

However, paradoxically so far the strategy has benefited better productive potential areas and the relatively better-off rural households and it is against the poorer households and resource deficient areas (Senait, 2002; Yared, 2001). Generally this pro- agriculture policy has created a vacuum on the growth of the off-farm sector (Belaineh, 2002; Yared,2001; Mulat, 2001). In contrast to the experiences of other countries on the positive role of livelihood diversification, in Ethiopia the sector is not yet well recognized. For example in many Asian and Latin American countries livelihood diversification became an important source of employment and income for the rural people especially for the landless households (Reardon et al., 2000: Lanjouw ,2001)

1.2. Statement of the Problem

Although poverty reduction has remained long as a central development agenda among successive regimes in Ethiopia, the poverty and food insecurity situation has been escalating. Poverty and food insecurity become an endemic feature of the nation tarnishing its image in the international arena. Different policies and strategies had been attempted by different regimes to mitigate poverty and food insecurity and to bring sustainable development in the country. In the discourse of implementing those policies and strategies, the focus of choice, as a leading economy, was between the farm and industrial sectors. The policy choice seems dichotomized between these two conventional economic sectors. The role of the off-farm sector in rural areas is not given due attention by policy makers.

Currently, the Ethiopian government aspires to achieve development by using the agricultural economy as a springboard to bring growth in other sectors of the economy that is in line with the traditional approach. Cognizant to this, the government has adopted Agriculture Development Lead Industrialization (ADLI)

as a development strategy. Growth in agricultural sector is expected to fuel development in the overall economy. However, the growing poverty trend in the country and the undue reliance on the agricultural sector demands the need for searching other alternative livelihood approaches. In this regard, the potential of the hitherto neglected off-farm sector need to be searched out and it should be given due policy support

Although policy makers and development practitioners did not properly conceive it, different empirical evidences indicate that rural households in Ethiopia eke their living from diversified off-farm income sources (Tesfaye, 2003; Mulat and Teferi, 1996; Dercon and Krishnan, 1996). This testifies the fact that rural livelihood does not solely base on a single farm sector. Instead, rural economy is diversified.

Furthermore, the determinants of livelihood diversification are one of the least researched themes in the rural development discourse in Ethiopia. Both the idea of multiple livelihoods and the factors behind livelihood diversification are not given due attention both in the academic world and among rural development policy makers. Since livelihood diversification could be driven by both push and pull factors, identification of the determinants of livelihood diversification has a paramount importance in the endeavors of designing feasible livelihoods. Therefore, this study was initiated to fill the some of these gaps and to attempt to draw the attentions of rural development practitioners and policy makers towards the importance of livelihood diversification.

1.3. Objectives of the Study and Research Questions

General Objective

The general objective of this study is to examine determinants of rural livelihood diversification towards off-farm activities taking the case of Basona - Worana Woreda of North Shewa Zone .

Specific Objectives

- To assess the livelihood strategies of rural households
- To explore the income share of off-farm activities
- To examine the role of socio-economic characteristics of households in livelihood diversification
- To draw policy implications

Research Questions

- What is the role of market and road distance?
- Does access to credit and extension services affect livelihood diversification?
- What is the effect of farm size, livestock, family size and other assets on livelihood diversification?
- Does gender, age, educational level of head household matter on livelihood diversification?

1.4. Significance of the Study

The study is hoped to shed light on the importance of livelihood sources other than farming. It would indicate the importance of livelihood diversification among rural development planners who so far remain highly obsessed in the hitherto sectored approach towards rural development. Growing evidence indicates that rural households have been diversifying their economic activities. But this growing trend should be harnessed positively. This in turn calls the need for creating enabling mediums that can encourage sustainable livelihood

diversification. In this regard, identifying the determinants of livelihood diversification in the woreda would be important in designing livelihood diversification intervention. The study would also highlight the need for designing tailored and context specific intervention that can match to the capacities of rural households and realities of different locations.

1.5 Scope and Limitation of the Study

Scope of the study

The findings of this study are time and place bounded. This is because, livelihood assets and strategies are highly context specific. Findings from this study are, thus, mainly true for the study area. Since data was collected at a given point in time the generalizations made in this study refer to circumstances under that particular time. Furthermore, the assessment of determinants of livelihood diversification is mainly confined to the asset portfolios of rural households .It does not treat the effect of institutional factors and trend analysis in which literature on livelihood diversification deals extensively as important factors in causing livelihood diversification.

Limitation of the Study

Data collections for this study largely depend on survey method which helps to gather information on quantifiable variables, not much on qualitative data.
Households may not also be as such open to tell their assets for fear of taxation or for some other reasons. For that matter, they might provide inappropriate information on their income and other house assets. Hence, this can have some limiting factors on the outcomes of the study.

1.6. Organization of the Paper

The paper has five chapters. The first chapter deals with background, statement of the problem, and objective of the study, research questions, significance and scope and limitation of the study. The second chapter discusses the conceptual and empirical literature part. The third chapter focuses on the research methodology. The fourth chapter presents background of the study area and findings and discussions. The last chapter highlights on the conclusions and the ways forward.

CHAPTER TWO

Review of Literature

2.1. Concepts and Definitions

This part of the paper briefly deals with some important concepts and definitions that are widely discussed in the livelihood literature.

Livelihood: There is no standardized or commonly agreed definition of the term livelihood. But its dictionary definition refers to a "means to a living" (Ellis, 2000).

In a broader sense livelihood is defined as follows:

> *Livelihood comprises the assets (natural, human, physical, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household (Ellis, 2000).*

Livelihood Strategies: refers to routine and complex set of activities of people and households under taken to make a living (Sano, 1996 cited in Ponte, 2002).

Livelihood Diversification:- implies when households construct a diverse portfolio of activities, become increasingly involved in the off-farm sector and increase the share of total income generated from off-farm activities (Ponte, 20002).

2.2. Theoretical and Empirical Literature

A glance of literature on rural livelihood in recent years reveals that two contrasting events are undergoing in the livelihood strategies of rural households in many poor countries. The first scenario is that farming has shown a declining trend, for various reasons, to continue as a main source of livelihood for many rural households. On the other hand, there is growing evidence that involvement in various off-farm or non-farm activities and the share of income from these sources has been increasing in the income portfolios of rural households (Bryceson, 2005; Ellis, 2000; Meindertsman, 1997). A growing body of literature emphasizes the existence of multiple livelihoods that are quite different from agriculture centered livelihood strategies. Rural livelihoods are being increasingly directed to non-farm and off-farm activities.

According to Ellis and Allison (2004) the main driving factors for the reduction of the agricultural sector and the plorification of off-farm livelihoods include:

- The reduction of farmland below the threshold level;
- The inability of the younger generation to get land due to continuous land division to continue farming as their occupation;
- Poor agricultural performance or low agricultural yield;
- Price fluctuation of agricultural products both at the international and local market level etc.

However, the extent of diversification and the income share from these activities vary from country to country or from region to region. For example in Sub-Saharan African (SSA) 30 to 50 percent of rural households' total annual income comes from the non-farm sector and for the Southern Africa the figure goes up to 80 to 90 percent (Swift and Hamilton, 2001) and for that of Latin America 40 percent (World Bank,2005). This is quite opposite to the commonly held view that rural households obtain their livelihood mainly, through not exclusively, from farming. The rural off-farm/non-farm sector serves as an important

employment source for the rural labor as well. The World Bank (2005) indicated that as a proportion of total employment in rural areas non-farm employment averages approximately 25 percent in Latin America as compared to 44 percent in Asia. More commonly as the available data reflects it seems natural that rural households construct their livelihood from a diverse set of off-farm/non-farm income sources along with farming.

Meindertsman (1997) pointed out the inseparability of the farm and the off-farm activities for rural households stating that for many households both the farm and the off-farm activities are not two distinct worlds but one continuum. In similar vein Barrett and Reardon (2002) argued that it is uncommon to see that "rural households generate all their income from a single activity or accumulate all their wealth in a form of single asset or allocate all their assets in just one activity". Thus livelihood diversification is a "norm". Hence the conventional sector based approach, which assumes farming as the only sector, and farmer as the only rural actor does not hold true (Bebbington, 1999; Meindertsman, 1997).This growing trend of livelihood diversification has started to draw the attention of policy makers, development practitioners, academicians etc for the fact that it divulges an extra alternative, besides farming, in the endeavors of designing rural poverty reduction or development interventions.

Rural Livelihood Strategies: Generally, the different livelihood strategies that are open for rural households are categorized as follows.

I. **Farming**- this is a type of livelihood strategy where people get their livelihood either from growing crops or from animal rearing or use the combination of both.

II. **Livelihood diversification**- this refers to a type of livelihood strategy when rural households participate in a variety of off-farm activities either in combination of farming or as an exclusive source of livelihood.

III. Migration- it refers to when people migrate either temporarily or permanently away from their place of origin to other places in search of their livelihoods (Scoones, 1998; Swift and Hamilton, 2001).

Parallel to these livelihood strategies, rural income is also classified in different ways. Since in most cases diversification is considered as income maximization, income stabilization, or both, income is an important variable for study (Ellis, 2000). Income can be cash or in kind cash-equivalent yield from a households assets. Incomes are classified by their sources. The most commonly used terms in this regard include: off-farm, non-farm, non-agricultural and non-traditional (Barrett and Reardon, 2000).Almost similar distinction of income source classifications is farm, off-farm and non-farm.

Farm Income- this includes both livestock and crop income and comprises both consumption in kind from farm output and cash obtained from sale of crop and livestock.

Off-farm Income- this refers to wage or exchange labor on other farms (i.e. within agriculture). It also includes labor payment in kind. Income generated from local environmental resources such as sale of firewood, Charcoal, house building materials, wild plants etc are part of off-farm income.

Non-farm Income- This includes non-agricultural income source such as income from wage or salary payment, rural self-employment/business, remittance, other transfer (pension) etc (Ellis, 2000).

Rural household income is also classified on different basis such as

(a) Sectoral (farm VS non-farm)

(b) Function (wage VS self employment)

(c) Space (local VS migratory) (Barrett and Reardon, 2000).

Thus, there is no hard and fast rule of classifying rural income. In this study the off-farm and non-farm income is considered as one part of against the farm

income off-farm and non-farm income is considered as income used by diversifier households. However, farm income can be used by non-diversifier household but not exclusively.

There is no consensus among different authors both on the causes and consequences of livelihood diversification. In some circumstances livelihood diversification seems to be associated with some push factors where rural households use it as a survival strategy. In contrast to this fact rural households also diversify their economic activities with rational calculation of the returns. Different authors coined various terms to explain these contrasting reasons for diversification such as necessity versus choice or survival vis-à-vis accumulation (Ellis, 2000; Ponte, 2002).

Necessity or survival refers to a situation when people are forced to engage in a variety of off-farm activities involuntarily for the reason that previous livelihood strategies have failed or unable to fulfill current needs. It is poverty induced livelihood diversification when people use it as a last resort. It is unsustainable type of diversification. Typical example for such kind of livelihood diversification includes selling of firewood or charcoal. It can be used as ex-ante or ex-post risk reduction (Ellis, 2000; Barrett et al., 2001; Lanjouw, 2001). Some other factors also can cause these types of distressed livelihood diversification including: continuous fragmentation of landholdings and soil degradation that can result in low agricultural productivity and income (Reardon et al., 2000; Bryceson, 2000; Ellis, 2000).

Other man-made or natural calamities such as flooding, drought or civil war etc that result in the dislocation and abandonment of previous livelihood strategies and assets of households also cause those unviable types of livelihood diversifications (Swift and Hamilton, 2001; Scoones, 1998).

On the other hand choice or accumulation implies when people diversify their economic activities towards lucrative off-farm/non-farm activities. This depends on the ability or capacity of people to initiate and run the business. This type of livelihood diversification is being employed mainly by better-off or wealthy rural households who have adequate income, better education, etc (Ellis, 2000; Barrett et al., 2001)

Effect of Livelihood Diversification

The literature on livelihood diversification offers quite divergent perspectives regarding the role of livelihood diversification in improving rural well-being .The proponents of livelihood diversification emphasis the positive contribution of livelihood diversification. According to Ellis (2000) and Lanjouw (2001) the contributions of livelihood diversification include the following:

- ✓ It helps to spread risk and reduce household vulnerability.
- ✓ It helps to broaden household income base and increase household resilience. It helps to reduce income poverty and to ensure food security.

They maintain the view that livelihood diversification improves livelihood security and capability of households. Especially in the context where farming has failed to serve as livelihood strategy they propose livelihood diversification as an alternative livelihood option. Therefore, it is proposed that livelihood diversification should foster and policies that address constraints to diversification should be put in place (Ellis, 2000).

On the other hand there are some people who argue that livelihood diversification is not necessarily a means of improving well-being. They argue that rural- RNFE is highly diverse and the returns likewise are highly variable. Some off-farm activities can generate lucrative returns yet others will provide only meager income that has only survival value. Therefore, livelihood diversification does not inherently lead to livelihood improvements (Swift and Hamilton, 2001) Livelihood diversification can be both a positive and negative adaptive livelihood

Determinants of Livelihood Diversification

The portfolio theory, which much of the diversification literature is drawn from, emphasizes assets as the most important variables in the study of livelihood diversification (Barrett and Reardon, 2000).Albeit, factors at macro level can affect livelihood strategies or livelihood diversification, more specifically livelihood diversification is determined by the asset holdings of households and other publicly provided assets at micro or meso levels (Barrett and Reardon, 2000).

In fact various empirical evidences revealed that specific assets have different effects on livelihood diversification in different areas and among different households. As those empirical evidences indicate access to transport, market and related infrastructures, availability and access to credit, total household income, land or livestock size, family labor, sex and educational status of head of the household etc are some of the determinants of livelihood diversification. While differential access to these resources that are necessary to diversify livelihood gives rise to different ways in which households diversify their livelihoods. These factors can either inhibit or facilitate the process of livelihood diversification (Ayalneh, 2000).

Barrett and Swallow (20055) found out that households who own adequate land in relation to their family labor opt to depend on farming while other households with better education, skill or good financial capital diversify into business related activities.

In the study of the determinants of livelihood diversification in six rural villages in India Anderson and Deshingkar (2005) found an inverse-u shaped relationship between land and live stock size of households and their livelihood diversification but a negative relationship between remittance and livelihood diversification.

Reardon et al. (2000) found a positive relationship between the share of non-farm income in the one hand and total household income and/or land on the other hand in Africa, yet negative association in much of Latin America and mixed results in Asia. They also indicated the double effect of access to improved infrastructure and the growth of towns on livelihood diversification on poorest section of households. This is because improved infrastructure and growth of rural towns may either inhibit or facilitate the poor from participating in off-farm activities due to competition.

Education, sex, age, family labor, financial capital, also proved to be among the determinants of participation in off-farm activities. In most cases evidence suggests that education or adequate financial capital facilitate access to better remunerative off-farm activities, the effect of sex is seem that women face entry barriers to rural off-farm employment. It is also common that younger people migrate, seasonally or permanently more than older people or women in search of their livelihoods and thus diversify their economic activities. Furthermore, a household endowed with large labor but small land holding will allocate some labor in farming and the rest in off-farm activities (Barrett and Reardon, 2000; Barrett et al., 2001).

Naude and Taylor (2001) found empirical evidence that show positive relationship between education (primary and secondary) and the likelihood of participation both in non-farm self-employment and wage employment, but a negative relationship between migrant family member and participation in off-farm activities. They also point out negative association between land holding size and participation in off-farm activities, yet positive relationship between livestock size and participation in cash cropping and non-farm activities.

Ruben and Berg (2001) note those households with smaller farms and more hillside land engage in farm wage labor. They also identify a negative relationship between engagement in farm wage labor and access to transfers (i.e.

remittance and pension). On the other hand they revealed a positive association between participation in non-farm wage employment and farm size and irrigable land endowments.

Lanjouw (2001) reports a strong and positive relation between participation in highly productive off-farm activities and educational level and age of individuals. He also shows that access to infrastructure has facilitated the likelihood of finding non-farm employment.

Ferreira and Lanjouw(2001) indicate an empirical evidence that display a positive and significant relation between participation in non-farm activities and household size and educational level.

Escobal(2001) note that location, access to private and public assets, educational level as the key determinates of high income diversification. He identified that access to public goods and services together with adequate private assets (especially education and credit) facilitate access to self employment and agriculture as well as wage employments in rural Peru.

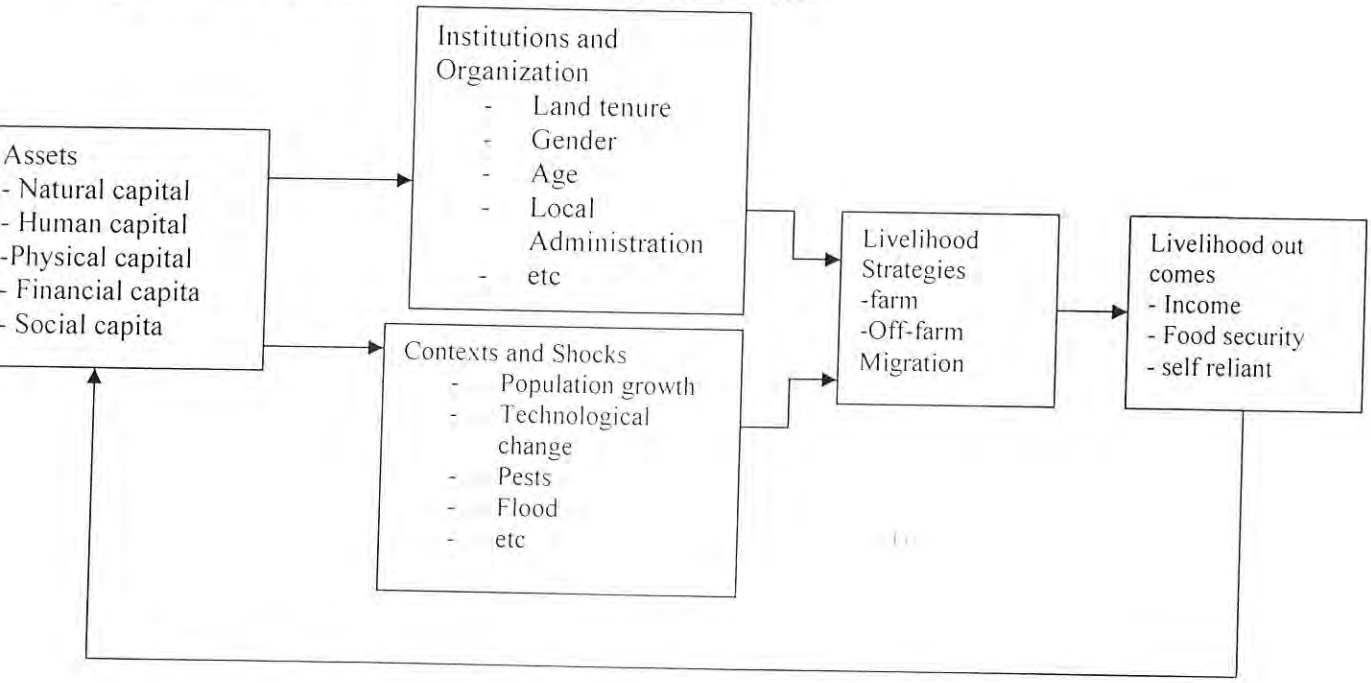
Deninger and Olinto (2001) point out the existence of non-linear (U-shaped) relationship between the importance of off-farm work, asset endowment and total household income. Thus they found strong positive association between total income and specialization.

Generally initial wealth or asset of a household conditions its subsequent livelihood diversification patterns and returns. Therefore, initial wealth or asset of a household conditions its subsequent livelihood diversification patterns and returns. The poor, with less asset bases, face great entry barriers to engage in better rewarding off-farm activities which the rich have a comparative advantage. This clearly points out the dynamic relationship among assets-activities and incomes. By and large, depending on their asset possessions rural households

engage in a variety of income generating activities. They can gain income either from crop production, livestock sale, by working in various off-farm incomes generating ventures or the combination of both.

However, it is worth remembering that livelihood strategies of rural households (both farm and off-farm) are not exclusively determined by assets. There are many intervening factors that influence the type of livelihood strategies to be employed and the resultant livelihood outcomes. The following diagram illustrates how those multiple factors/forces are intermingled and reinforce to each other and affect livelihood strategies of rural households

Fig 2.1. The Sustainable Livelihood Framework



Source: Adapted From Ellis, 2000; Scoones, 1998; Degefa, 2005

Currently, livelihood literature analyses livelihood strategies as a dynamic process conditioned by assets, policy, institutions, trends and shocks and existing social norms and values (Ellis, 2000; Scoones, 1998; Carney, 1998)

Currently this framework which examined the association between assets, livelihoods strategies and livelihood outcomes is referred to as the sustainable livelihood framework (SLF) (Ellis, 2000; Scoones, 1998; Carney, 1998). It is an eclectic platform, which deals with the people, their physical environment and the institutional settings. It tries to examine the associations that exist among these components and the effects on livelihoods of the people. The framework brings together in a plat form the various livelihood components i.e. assets, the contexts and institutions and/or organizations, livelihood strategies and livelihood outcomes. The framework implies that the livelihood strategies or activities which people engage in and the associated livelihood outcomes are the result of the inter play among the assets, institution (both formal and social) the contexts (trends and shocks) in which people find themselves.

The SLF is a holistic, people -centered framework serving as analytical tool in the process of planning development interventions. It identifies the existence of differentiated income groups and multiple program entry point .In the process of designing rural development intervention programs it informs the need to assess the various assets which people own, the institutional settings that determine access to assets and the different livelihood strategies. The SLF reveals that the existing social and formal institutions and/or organizations govern People's access to the various livelihood assets. These institutions and/or organizations may either inhibit or facilitate people's access to the various livelihood assets and consequently the type of livelihood strategies to be employed. The framework recognizes the role of contexts (shocks and trends) in shaping livelihoods of the people. Other things remain constant the contexts in which rural households found will play important role in the adaptation of different livelihood strategies. The general trends and shocks can influence peoples' livelihood strategies. In response to the dynamic changes or unexpected events such as drought people will employ new livelihood strategies as coping strategies (Ellis, 2000; Scoones, 1998; Swift and Hamilton 2001, Degefa, 2005). Livelihood diversification is one of the commonly employed coping strategies among vulnerable rural households.

The livelihood approach is valued for a number of reasons. It emphasizes multiple livelihoods of rural households; it places assets as building blocks of livelihood strategy; and it indicates the how people are able to access the various assets (Barrett and Reardon, 2000; Bebbington, 1999)
According to Swift and Hamilton (2001) the SLF is thus acknowledged for *exposing and unraveling the complexity of rural livelihoods, which need to be considered in the face of designing development policies focus the on the people rather than on specific sectors.*

They further argued that the framework provides a truer picture of "rural life and poverty" where livelihood strategies such as diversification and migration are rational livelihood strategies rather than desperate phenomena. In the orthodoxy thinking rising agricultural yields is considered as the only means of reducing rural poverty. According to this traditional approach wealth formation is inevitably from farming outwards and primacy is given to policies that encourage innovations and change in the agricultural sector (Ellis, 2004).

On the contrary in its focus on poverty reduction the SLF recognizes the importance of adaptive strategies, assets, capabilities, local institutions and knowledge etc as potential resources to begin with and scale up rather than the injection of sector based , alien development interventions. The livelihood approach seems like a step forward. It tries to scale up what people are accomplishing in making their living rather than introducing external interventions. The sustainable livelihood gives priority to the adaptive livelihood strategies of the poor .The idea is that with little external support such as improved technology, financial assistance, or change of the government policy adaptive strategies will be more productive and sustainable(Masefield,2001;Escobal,2001).

2.3. Food Security and the Sustainable Livelihood Approach

In the conventional food security theories ensuring food security is understood as a top priority objective of rural households by putting less attention to the long-term objective of livelihood security among rural households. According to the traditional food security theories, future livelihoods are compromised at the expense of immediate food needs of households (Degefa, 2005; Swift and Hamilton, 2001).

However, currently the sustainable livelihood perspective draws a shift of focus from food first to livelihoods security that is labeled as the "sustainable livelihood" (Masefield, 2001; Degefa 2005). The tenet of the new approach is that asset preservation is as an important objective as that of food security. Livelihood security, which places priority on the long-term viability of the household, may be overriding objective among rural households than the short term food security issue. For example rural households may endure hunger in order to preserve assets for the future. An important aspect of the sustainable livelihood approach is that it emphasizes a sustaining increase in the asset base and strengthening the human capabilities to utilize those assets as an entry point in the endeavors of addressing food security. The sustainable livelihood recognizes that assets are important in determining household food security. In the words of swift and Hamilton (2001) this idea is summarized as follows:

> *Food security is a sub-system of needs, neither independent of nor necessarily more important than other aspect of subsistence and survival within poorer households. The reasons some households are food insecure are routed in the ways entire livelihoods systems have changed and adapted, or failed to adapt, to changes from the ecological and economic environment, including shocks such as drought. Food security is thus usefully seen as one important element of a sustainable livelihood.*

Summary: In the contemporary poor countries farming has shown a declining trend to continue as a major source of livelihood for many rural households. There is also growing evidence that rural households diversify their economic

activities towards various off-farm or non-farm activities and the share of income from these sources has been increasing in the income portfolios of rural households. The existence of multiple livelihoods in the rural areas is considered as an opportunity for intervention in the fight against rural poverty. Instead of the single sector approach the multi-sector approach seems the realistic approach. The rural economy is more than agriculture. However, the causes and effects of livelihood diversification are different. Livelihood diversification could be adopted for survival or accumulation purpose. A number of empirical evidences indicate that livelihood diversification is influenced by asset endowments of households. Therefore, assets are the most important variables in the study of livelihood diversification. It is by taking this fact into consideration that the researcher has decided to conduct the current study .The following chapter deals with the research design and data collection methods that were employed in conducting the study.

CHAPTER THREE

3. Research Design and Data Collection

In this study the household sample survey method was employed for the fact that it could help to gather data that can be generalize about sample population in cost effective manner (Gujarati, 2006)

3.1 Sampling Procedure- the study area, Basona Worana Woreda, was selected purposively by the researcher due to his previous familiarity with the area.
The woreda consists of 29 rural kebeles out of which 6 rural kebeles were selected randomly. The sum total of households in the 6 kebeles was 7000. Among the 6 kebeles a total sample size of 200 rural households were selected. The researcher has decided to reduce the sample to 200 due to resource constraints (i.e. time and money). Besides, the researchers work experience in the area helped him to observe that households are more or less homogenous in terms of farming systems and socio-economic conditions. For these reasons the same researcher has decided to take a sample size of 200 households. But, each kebele has different household size. Taking this fact in to consideration and to ensure representativeness of the sample, proportionate sampling technique was employed. Hence, each household in each kebele has got equal chance of being selected (see table below).

Table 3.1 Sample size of households for selected kebeles

No	Kebele	Total households	Total sample selected
1	Bakelo	1230	35
2	Keyit	1150	33
3	Abamotie	1158	34
4	Angolela	1248	35
5	Wushawishign	1094	31
6	Debele	1120	32
	Total	7000	200

Once the share size of sample households for each kebele was known, systematic random sampling was employed to select representative households from each kebele, which finally resulted in the selection of 200 households.

Sampling Frame and Unit-The sampling unit for this study is the household head and the sampling frame was the list of the total households in each sample kebele, which was obtained from the woreda Finance office.

3.2. Methods of Data Collection

The study has used both secondary and primary sources. With regard to secondary data, various journals, government policy documents, theses and other pertinent materials were consulted. On the other round, primary data was collected through sample survey of rural households employing structured questionnaire.

To administer the questionnaire six enumerators were employed from the respective sample kebeles. Some of the enumerators (4) had previous experiences in household data collection. They had worked as data collectors by CSA (Central Statistical Authority). The educational status of the enumerators was 10+2 and above (i.e. three of them were 10+2 preparatory students and the remaining three were college diploma students).

Two days training was given to the enumerators to familiarize them with interview techniques and the content of the questionnaire .This is hoped to enable them to acquire different techniques in approaching people and hence collecting the required information. First the questionnaire was prepared in English. But later it was translated to the local language (i.e. Amharic) to make it easily understandable both by the interviewers and interviewees. Before the actual survey was conducted, pre-testing was done in order to ensure the validity of the questionnaire. Accordingly, some amendments were made in a

manner that they can help to collect relevant data. The Pre-testing was conducted out of the study area to avoid information contamination.

3.3 Data Analysis

In analyzing household data, both descriptive statistics and Econometric Model were employed. To this end, the Statistical Package for Social Science (SPSS) version 12 was used. The descriptive statistics was used to describe the socio-economic features of households against livelihood diversification. The Econometric Model was used to examine the statistical relationship between the various socioeconomic features of households' vis-à-vis livelihood diversification. Accordingly, the researcher has initially set the different hypotheses.

3.4 Hypotheses and Definitions of Variables

The livelihood strategy of rural households (i.e. specialization in farming or diversification), which is treated as dependent variable, is regressed against the predictor variables (i.e. sex, age, educational status of head of household, the number of family members between the age of 15-60, land and livestock size, distance from market places and road etc).

Accordingly, those households who engage in various off-farm activities are classified as diversifier and represented by 1, while those households who depend on farming as their livelihood source are termed as non-diversifier and represented by 0.Therefore, the following hypotheses were made to each of the explanatory variables considered in the analysis.

SEXHH: Dummy for sex of household head: 1 if the household is headed by female and 0 otherwise. Female-headed households are anticipated to show greater tendency of engaging in off-farm activities than male-headed households.

AGEHH: Refers to the age of the head of a household: It is hypothesized that as the age of the household head increases, the tendency of the household to participate in rural off-farm activities will decrease.

LITHH: Dummy for literacy status of head of household: 1 if the household is headed by literate (read and write) person and 0 otherwise. It is anticipated that households headed by literate people will show greater propensity to diversify their economic activities towards off-farm activities than households headed by illiterate person

FAMMR 15- 60: Refers to the number of family members with the age range 15 to 60: It is expected that as the number of family members that fall between ages 15 to 60 increases, the tendency of that household to diversify its economic activities will be higher.

LANDSIZ: Represents size of own land (ha): It is hypothesized that as the size of own land (ha) increases the tendency of the household to diversify its economic activities will decrease.

LIVESIZ: Stands for total number of livestock in (TLU) owned by a household: It is expected that households with small number of households will show greater interest to diversify their economic activities.

MARKDIS: Refers distance from market places (in minutes): It is hypothesized that households found nearer to market places will show greater tendency to participate in various off-farm activities than their counterparts. That is as distance increases from residence to marketplaces the probability of the household to participate in off-farm activities will decrease

ROADDIS: Represents distance from main roads (min): It is anticipated that households which are found nearer to main road will show greater tendency to diversify their economic activities than households located far away from main roads. That is as distance increases from residence to main road, the probability of the household to participate in off-farm activities will decrease.

For multiple independent variables the logistic regression model can also be put as:

Probability (event-y) = $\frac{e^{\beta_o-\beta_1x_1-\beta_2x_2-\cdots-\beta_ix_i}}{1-e^{\beta_o-\beta_1x_1-\beta_2x_2-\cdots-\beta_ix_i}}$ ----------2

Probability (event-y)= $\frac{1}{1-e^{-(\beta_o-\beta_1x_1-\beta_2x_2-\cdots-\beta_ix_i)}}$ ---------- 3

Where Z = Natural logarithm

X1, X2, Xi = independent variables

$\beta 1, \beta 2 = Coffi$cients

Then equation # 3 can be rewritten as follows

Probability (event-y) = $\frac{1}{1-e^{-z}}$ ----------4

On the other hand the probability of an event not occurring can be found as follows:

Probability (no event-y) = $1 - probability\ (event - Y)$

$$= 1-\left(\frac{1}{1-e^{-z}}\right)$$

$$=\frac{1-e^{-z}(1)}{1-e^{-z}}$$

$$\frac{1}{1-e^{z}} - 5$$

The odds ratio value can be found by putting equation (#4) and equation (#5)

Probability of and event occurring (event-y)
Probability of an event not occurring (event-y)

$$= \frac{\left(\frac{1}{1-e^{-z}}\right)}{}$$

$$= \frac{e^{-z}}{1-e^{-z}}$$

$$= \frac{e^{z}}{}$$

Since Z= $\beta o + + \beta 2x2 - - - - + \beta ixi$

Then Probability (event- y)
Probability (no event-y)

$= e \ \beta O - \beta 1x1 - \beta 2x2 - - - - - \beta ixi - - - - - - - - - - - 6$.

Finally, this model can be rewritten in terms of the natural logarithm as follows:

$$\text{Log}\left(\frac{\text{Prob(event} - \text{y)}}{\text{Prob(no event} - \text{y)}}\right) = \beta O - \beta 1x1 - \beta 2x2 - - - - \beta ixi = K$$

When the disturbance term Ui is added, the Logit model becomes

$$K = \beta O - \beta 1x1 - \beta 2x2 - - - - \beta ixi - Ui - 7$$

CHAPTER FOUR

Results and Discussions

4.1. Brief Description of the Study Area

The Amhara regional state is found in the central, north eastern and northern part of Ethiopia, which covers an area of 170, 752 Km^2 ranking second- next to Oromia regional state. The region comprises 10 administrative zones, 106 rural and 9 urban woredas and 2,927 rural kebeles. Diverse climatic and topographic features also characterize the region. It has warm, cold and mild climates with its topography ranging from 700-4,620 meters above sea level. The highland area of the region, which is settled by the largest proportion of the region's populations for many years, suffers from land degradation (Berhanu and Feyera,2005)

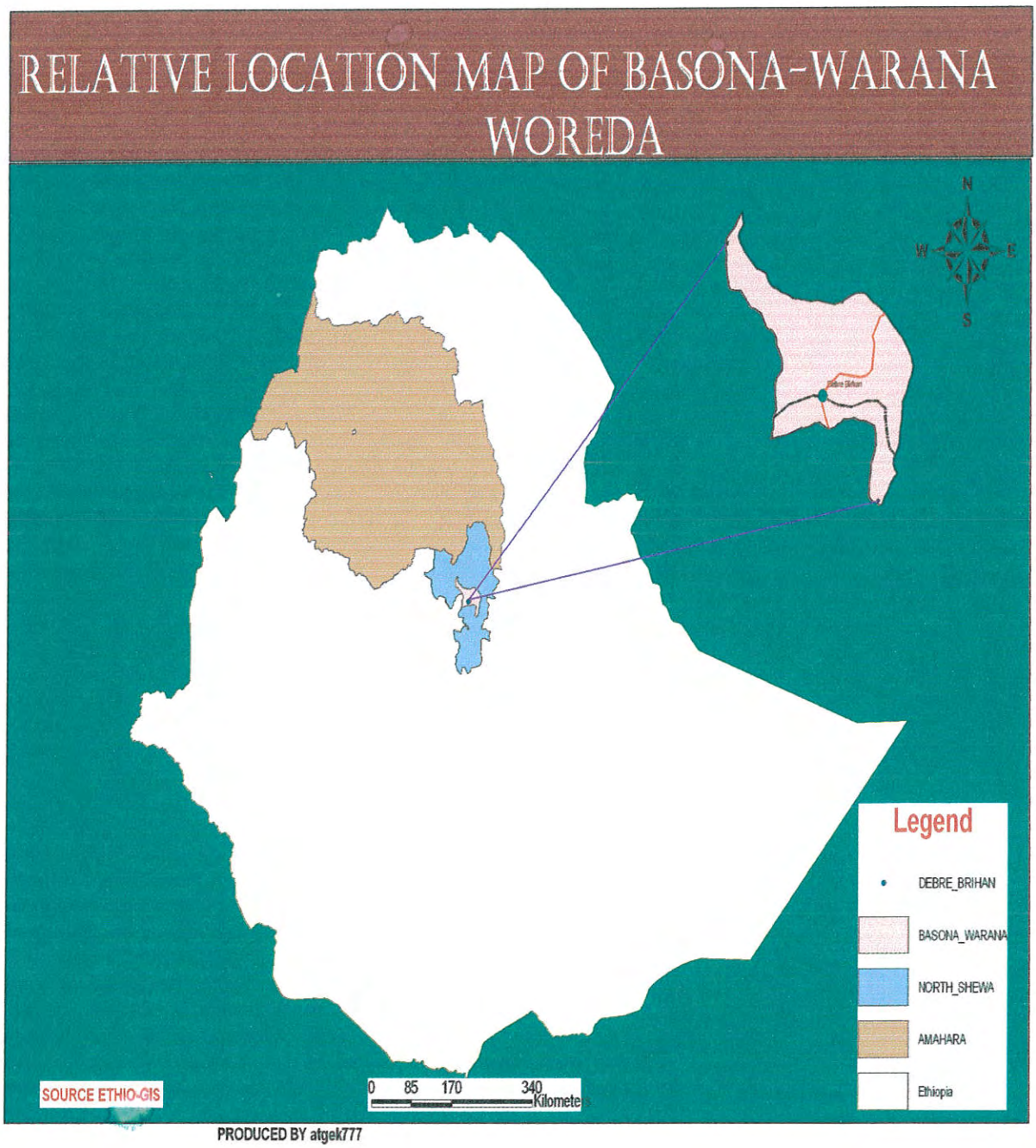
Land degradation resulted from the nature of landscape, long history of settlement, high population growth and inappropriate farming techniques, etc is severe problems the agricultural sector in the region. The average per capita holding and average land holding per household stood 1.10 and 0.24 hectares respectively. This figure is significantly lower than the national average. Poverty and food insecurity is also a much-pronounced problem in the region (Berhanu and Fayera, 2005). In the region, some areas are identified as productive while others are less productive and frequently hit by recurrent droughts.

The North Shewa zone, which is located in the high land part of Ethiopia, is known for long time settlement and high population growth. Thus the land is intensively cultivated (SUNARMA, 2006). The area is known for very rugged topography and its altitude ranges from 1000 to more than 3500 meters above sea level. The zone has a bimodal rainfall system . During the last half century the natural resources of the area have been depleted in unsustainable manner.

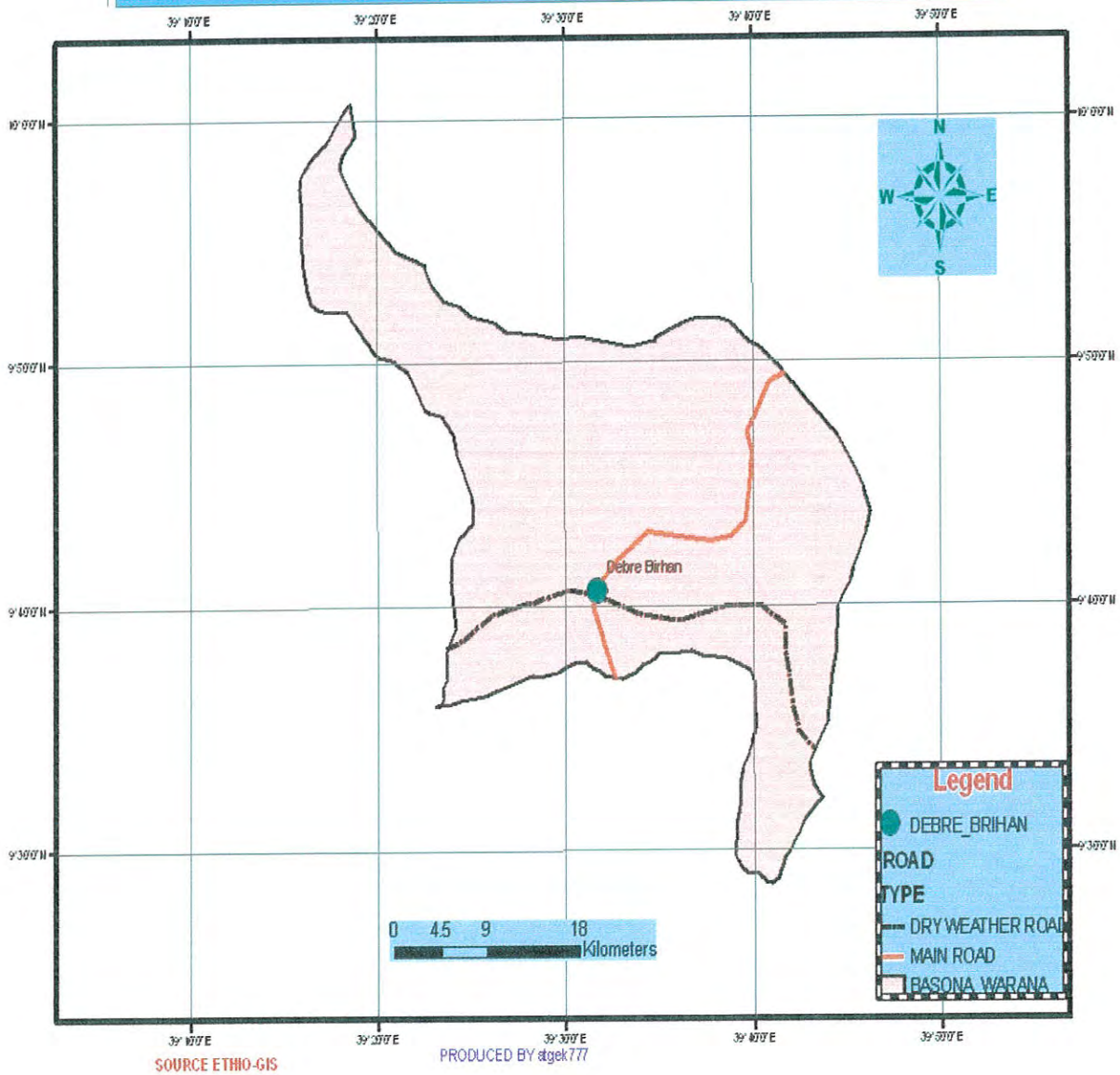
Currently, it is one of the most poverty ridden regions in the country (Mulat and Teferi, 1996).

The zone is divided into 20 woredas which Basona Worena woreda belongs to. According to an estimation made in 2006, the woredas total population is 158,000 of which male and female population accounts 49.08% and 50-92% respectively. There are about 36,711 total households in which 8,796 (24%) are headed by females. From the total population, 99.5% belongs to Amhara ethnic group while the rest 0.5% belongs to Oromo and other ethnic groups. The altitude of the area varies from 1300 to 3400 meters above sea level. The area is dominated by high and plateau landscapes. The annual rainfall and temperatures varies from 814 mm to 1080 mm and 9-22°C respectively. Total area of the woreda is 139900 hectare, which accounts 8% of the zone's total area. Average land size is 1.5 hectares per household.

Mixed farming (i.e. growing crops and raising animals) is the dominant farm of livelihood in the area. Farmers grow barley, wheat, teff, lentils, field beans and peas etc. Livestock raring constitutes an important part of households' livelihood. Animals have multifaceted purposes for rural households including: source of food and income, transportation, plowing, source of security or wealth etc. The dominant types of animals kept by households in the region are Oxen, Cows, sheep, goat, horse, donkey and chicken. Certain households also practice bee keeping.(Source: Northern Shewa zone Rural and Agricultural Development Office,2005).


RELATIVE LOCATION MAP OF BASONA-WARANA WOREDA
N
W
E
S
Legend
DEBRE_BRIHAN
BASONA_WARANA
NORTH_SHEWA
AMAHARA
Ethiopia
SOURCE ETHIO-GIS
0 85 170 340
Kilometers
PRODUCED BY atgek777

LOCATIONAL MAP OF BASONA-WARANA WOREDA



4.2 Descriptive Analysis

4.2.1 General Demographic and Socio-Economic Features of Households

Age: mean age of household heads across the study area was found to be 44.6 where the minimum and maximum age limit was 20 and 80 years respectively.

Family Size: average family size among studied households was reported to be 4.9. Out of the total average family size, on average 3 family members were found under the category of economically active age (i.e. 15-60 years). The table below summarizes some of the demographic features of sample households.

Table 4.1 Demographic characters tics of sample households (n=200)

Variable	Mean	Minimum	Maximum
Age of households heads	44.6	20	80
Family size	4.9	1	10
Active Labor (15-60) years	3	1	7

Source: own survey, 2006

Ownership of Farms Assets (Land, Livestock, Oxen)

Land and livestock are among the fundamental assets of rural families in Ethiopia, which are used in the endeavors of making their livelihoods. These assets are not only source of livelihood but also means of wealth accumulation and symbols of social status in the rural community. For these very reasons, rural households will be more interested to maximize and maintain these stocks. But due to the ever increasing human population and other factors, there is a trend of dwindling in land holding and livestock size in rural Ethiopia. In the study area, average land holding and livestock size was reported to be 1.5 hectares and 5.6 TLU respectively. The number of drought power on average was also 1.2.

The table below summarizes this information.

Table 4.2Ownership of key farm asset

Asset Type	Mean	Minimum	Maximum
Land size (ha)	1.5	0.0	4
Livestock,TLU*	5.6	0.01	16
Oxen, number	1.2	1	4

Source:ownsurvey,2006,

cattle=1TLU,Goat&Sheep=0.1TLU,Horse=1TLU,Mule=1.15TLU,Donkey=0.65TLU,Camel=1.45TLU, andPoultry=0.005TLU(Ramakisha andAssefa,2002)

Distance from Nearest Market Places and Main Road

Access to various public infrastructures such as market places and road has paramount significance for rural households. Better access to these resources will facilitate the chance both to purchase inputs and to sale their product for rural households.In the study area, households are expected to walk on average 87:30and 37:06 minutes to reach to the nearest market places and all whether roads respectively. The table below presents the average walking distance in minutes.

Table 4.3 Average walking distance of households from nearest market places and main road (min)

Description	Mean	Minimum	Maximum
Distance from nearest market places (min)	87:30	2	600
Distance from main road (min)	37:06	1	150

Source: own survey, 2006

4.2.2 Livelihood Strategies and Sources of Household Income

Livelihood Strategies

Rural households employ multiple livelihood strategies in the process of making their living. Due to different reasons, some households might depend largely on farming and others could employ various livelihood strategies. In this study, it was reported that out of the total 200 sample households about 60 percent reported that they participated in a variety of off-farm activities such as rural trading, rural crafting, daily labor, sale of beverage, rural shopping etc. This finding is consistent to the work of Tesfaye(2003) who indicated that about 60 percent of rural households in the Hararghe highlands engaged in multiple income sources. It is also similar with that of Mulat and Tesfaye(1996) who identified that in North Shewa zone about 60 percent of rural households participate in multiple off-farm jobs. The table below displays households livelihood strategies.

Table 4.4Livelihood strategies of households

Total sample houesholds	Livelihood strategy	
	Farm and off-farm	Farm
200(100)	120(60)	80(40)

Source: own survey, Figures in parenthesis are percentages

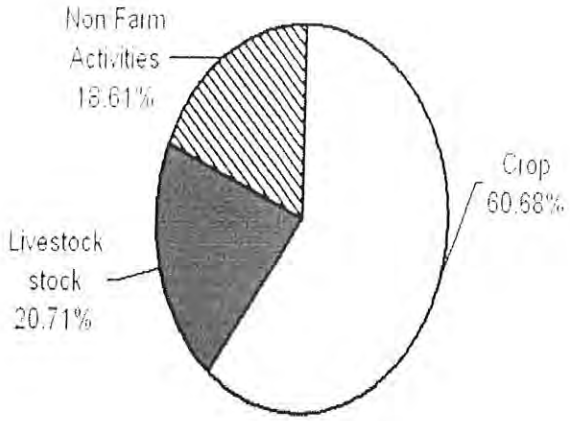
Sources and Share of Households Income

Rural households could have multiple sources of income (both farm and off-farm), which vary, however, from household to household due to differences mainly emanated from their asset endowments. In this regard, Barrett and Swallow (2005) argued that the composition of household total income provides important insights as to how asset differences result in income variation among rural households. In this particular study, diversifier households and non-diversifier households who exhibit marked differences in their asset endowment have also shown differences in the composition and amount of income obtained

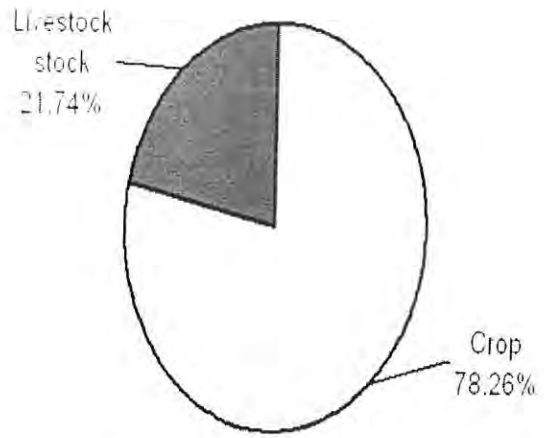
from different activities. Non-diversifier households, which depend on farming per se, obtain their income from it. Whereas, diversifier households who still depend on both farming and off-farm obtain income from both sources. Therefore, diversifier households supplement their total income from off-farm activities.

As data from descriptive statistics reveals on average non-diversifier households tend to have larger land and livestock size as compared to diversifier households. Whereas, diversifier households have better human capital i.e. literate family head and larger male family labor (Refer tables 4.9, 4.11&4.12). The differences in asset endowments seems mirrored through the differences in the income obtained from farming i.e. from crop production, sale of animals, sale of animal by product (milk, butter) and sale of honey etc)and off-farm activities.

Households that engage in off-farm activities have multiple income portfolios that include both farming and off-farm sources. 21.74% and 78.26% of the net annual income of non-diversifier households comes from livestock and crop production respectively. Whereas 20.71%, 60.68% and 18.61% of the net annual income of diversifier households is generated from livestock sale, crop production and non-farm activities respectively. Though significant proportion of households participate in a variety of off-farm activities, the net annual income (18.61%) generated from these sources seems marginal. This might highlight that livelihood diversification in the study area is mainly adopted as a survival strategy resulted from push factors. As depicted from the pie chart the largest income of rural households (both diversifiers and non-diversifiers) is obtained from farming. This can be explained by the fact that households almost own farm assets that are key resources to generate farm income. The pie-chart below indicates the percentage annual income share of diversifier and diversifier households.



a) Net annual income share of Diversifier Household



b) Net annual income share of Non-diversifier household

Figure: 4.3

Source: Own Survey

The Role of off-farm Income

As Ellis (2000) indicated, diversification is thought to play a positive role in the livelihoods of rural people. This is because, that diverse livelihood is more resilient than the undiversified livelihoods. Particularly, livelihood diversification is more important for the poorest sections of rural households (Yared, 2001; Masefield, 2001). Vosti and Reardon (1997) maintain similar view that off-farm income is important to meet food needs and hence plays a role in poverty reduction.

In this particular study, it was explored that diversifier households allocate their off-farm income on different purposes ranging from asset building to immediate consumption. They use it for house construction, to purchase livestock, for saving, to purchase food for consumption, and other household items, to purchase clothes, etc. Putting differently off-farm income is being used either for further investment or for immediate consumption. This could indicate the fact that off-farm income has different impact on different households. Households that engage in low-return activities use the income to address short-term needs. For example, households which engage in selling firewood mainly reiterated that

they use the income obtained from it to purchase household items which can used for immediate consumption (e.g. sugar, coffee, salt, clothes etc.)

In this case, income diversification seems to improve the purchasing power of the poor by overcoming their narrow economic options.Households that engage in a relatively better rewarding off-farm activities (e.g. trading) use the income for further investment purposes such as house building, purchasing livestock for marketing or farming purposes.

Views of Households on Food Availability

The information obtained from the responses of households indicates that there is a significant difference among diversifier and non-diversifier house holds in terms of some characteristics. Diversifier households responded positively in that they had sufficient food throughout the year. Though it cannot be good measurement of food security positive response on the availability of food for the household can indicate the positive aspect of diversification. Table 4.5 summaries the responses of diversifier and non-diversifier households on the availability of sufficient food for household consumption through out the year during the study period.

Table 4.5 Responses of diversifier and non-diversifier households on availability of sufficient food throughout the year.

Response	Diversifier households	Non-diversifier households	Total
Yes	32(26.6)	10(12.5)	42(21)
No	88(73.4)	70(87.5)	158(79)
Total	120(100)	809(100)	200(100)
X^2		Significance level	
5.8		0.009***	

Source: Own Survey, 2006, ***=significant at 1 percent level .Figures in parenthesis are percentages

Household Vision on future Livelihood Strategies

Households were also asked on which type of livelihood strategies they want to engage in the future. There is a considerable variation of interest among diversifier and non-diversifier households in their future livelihood strategies, which they want to employ. Non-diversifier households seems more interested to rely on farming as their livelihood source whereas, those households which already engage in different off-farm activities appears more interested to engage in either off-farm or a combination of farm and off-farm activities. During the field survey, it was explored that many households want to engage in a variety of off – farm activities. But many of the respondents complained that the tax and license requirements set by the local administration have discouraged them from doing so.

Table 4.6 Response of households about their future livelihood strategies

Interest on livelihood strategy	Diversifier households	Non-diversified households	Total
Farming	35(29)	70(88)	105(53)
Off-farm	34(28)	3(4)	37(18)
Off-farm +farm	51(43)	7(8)	58(29)
Total	120(100)	80(100)	200(100)

Source: own survey, 2006, Figures in parenthesis are percentages

Off-farm Activities and Income Accrued

There is growing evidence, which indicates that off-farm income is an important constituent of the income portfolios of rural households. In many countries, significant share of households' total income has been generated from off-farm income sources and this increasing trend has been perceived as an important entry point in poverty reduction and food security effort (Vosti and Reardon,

1997; Ellis, 2000; Masefield, 2001; Yared, 2001; Degefa, 2005 Escobal, 2001; Meindertsman, 1997).

Table 4.7 Off-farm activities and annual income (birr) accrued per household

	Activity and Mean Annual Income							
	Trading (n=12)	Rural Crafts (n=10)	Daily Labor (n=18)	Beverage Sale (n=24)	Rural Shop (n=4)	Sale of firewood(n=48)	Remittance (n=15)	Others (n=28)
Mean	1872.5	436.0	710.3	1110.5	3042.8	425.3	592.9	1155.0
S.D	1059.4	211.4	443.2	977.2	2975.5	211.4	817.2	1454.4
Minimum	800.0	200.0	150.0	120.0	120.0	100.0	110.0	120
Maximum	4800.0	800.0	1680.0	2000.0	8000.0	900.0	3000.0	7200
Relatively better lucrative income sources				Rural shopping	Trading			
Least important sources of income				Firewood	Rural crafts	Daily labor		

Source: Own survey, 2006

Data from the above table depicts that rural households in the study area participate in various off-farm activities. The different types of off-farm activities identified in the area include: trading, rural crafts, daily wage, rural shopping, sale of beverage, sale of firewood and others. The different off-farm activities are run by different household members. The average household income depicted in the above table is thus earned by the different household members.

Rural Trading-Some of the activities that are classified under trading include: trading in animals, trading in grain and/or pulses, trading in chicken and egg, trading in butter. As reported on average households that

engage in these activities generate mean annual income of 1872.5 (birr).As clearly observed trading activities appears relatively lucrative than other off-farm activities.

Rural Crafts- under this part the researcher put the various traditional craft activities like pottery making, blacksmithing, weaving etc. According to Devereux (2005) in Ethiopia these activities have been operated for years by certain artisans who gain special skills passed on from parents to children. He further argued that in Ethiopia these groups of people belong to certain minority and socially excluded groups. From livelihoods perspective these activities have paramount importance both as a source of employment and income. In this study it was reported that households that engage in those activities were able to obtain an average annual income of 436.0 (birr) ranging from a minimum of 200(birr) to a maximum of 800 (birr).

Daily Labor- Rural households in the study area were able to generate income from daily labor activities. Households reported that they participated in various public and private construction activities found in Debre-Birhan town and rural areas. Some of the activities as explained which they take part includes loading and unloading activities in the Debre-Birhan town. Households that engage in this activity were able to generate mean annual income of 710.3 (birr) ranging from a minimum of 150 (birr) to a maximum of 1680 (birr).

BeverageSale-Households in the study area also able to generate supplementary income from the sale of local beer (araki and tella). Although from social point of view this type of livelihood may not be recommended still people are making a living from it.

Rural Shopping-few households also involved in rural shopping ventures .As explained some commodities are brought either from Debre-Birehan town or from Addis Ababa to the respective rural villages and being sold in rural markets to the community with profit.

Selling Firewood- a significant proportion of households also engage in selling of firewood and it is very common to see that many people take a bundle of firewood loading on the back of donkeys to Debre-Birhan town. From environmental sustainability perspective this type of livelihood strategy is not preferable. People might diversify in this type of activity for lack of other viable livelihood alternatives. This can be a typical example of poverty induced livelihood diversification. Selling of firewood is one of the least lucrative livelihood strategies.

Remmitance-this income source includes money obtained from relatives that live in towns or cities. This income source also includes cash sent by individual sponsors who provide direct support to destitute children through the family which is being run by CCF-Ethiopia

Others- The various off-farm activities put under this category includes salaried rural jobs, religious services, etc.

As depicted from the above table some activities are relatively better lucrative than others.

Off-farm Income and Gender

Table4.8 displays that male-headed households obtained more income from the different off-farm activities than female headed households. Some activities (e.g. trading and shopping) seem inaccessible to female-headed households. This suggests that female-headed households face some entry barriers to engage in those activities.

Table 4.8 Income from off-farm activities by sex of head of household

Source of Income	Mean Income by sex of head of household		
	Male headed household (n=96)	Female headed household (n=24)	Total (n=120)
Trading	1872.5	-	1872.5
Rural crafts	472.5	290.0	436.0
Daily labor	810.5	450.0	710.3
Rural Shopping	3042.9	-	3042.9
Fire wood	484.1	257.6	425.4
Beverage	1135.8	1055	1110.6
Others	1202.5	490.0	1155
Remittance	439.9	902.5	511.1

Source: Own survey, 2006

4.2.3 An Analysis of Asset Endowment of Households vis-à-vis Livelihood Diversification

In this sub section of the paper, a brief discussion will be made on the socio-economic characteristics of sample households with the view to investigate the differential effect of those socio-economic characteristics on the livelihood diversification of rural households. Rural households exhibit marked differences in their socio-economic characteristics through which the different livelihood strategies pursued by rural households are mirrored. Although rural livelihood strategies are influenced by factors beyond the control of households, livelihood strategies of rural households are greatly influenced, by their socio-economic characteristics.

As already discussed in the literature part, it is possible to draw some associations between the level of livelihood diversification and household characteristics. The most important socio-economic features which cause the

difference among rural households on their livelihood diversification include: age, educational and marital status of head of the household, family size or labor, amount of land or live stock owned etc. Other publicly owned assets (i.e. access to road, market places) as well as access to credit and extension services would bring difference in livelihood diversification among rural households. Literature on rural livelihood designated these household characters as asset/resources/capitals that are employed by rural houses in making their living.

Following this brief explanation the differential role of each variable will be scrutinized against rural livelihood diversification based on data collected for this particular study. The assessment will be made by examining the effect of the different socio-economic features on livelihood diversification.

Educational Status and Livelihood Diversification

Values of the descriptive statistics of the x^2-test depicts that there is a significant difference in the level of literacy among diversifier and non-diversifier households. Diversifier household heads tend to be more literate than their counter parts. It suggested that education (both formal and informal) is associated with access to off farm activities. Educated people could have better access for information and relatively better skills than the illiterate ones that consequently might affect the livelihood strategies to be pursued.

Table 4.9 Academic Status of head of households

Educational status	Diversifier households	Non-diversified households	Total
Illiterate	30(25)	38(48)	68(34)
Literate	90(75)	42(52)	132(66)
Total	120(100)	80(100)	200(100)
X^2		Significance	
3.123		0.007***	

Source: Own Survey, 2006, ***= Significant at 1 percent level

Figures in parenthesis are percentages

Livelihood Diversification by Sex of Household Head

Data from the following table reflects that sex of head of the household appears to affect livelihood diversification significantly. Female-headed households have shown greater tendency to engage in off-farm activities than male-headed households. However, as already discussed in the previous section it is more likely that female-headed households engage in low return off-farm activities. Hence female-headed households employ livelihood diversification mainly for survival purpose not for capital accumulation. This is because female headed households in most rural Ethiopia have limited asset endowment (i.e. low income, low educational status and other assets) which in turn leave them with low capacity to engage in better remunerative off- farming activities.

4.10 Sex of head of households and livelihood diversification

Sex	Diversifier households	Non-diversified households	Total
Male	94(56.6)	72(43.4)	166(100)
Female	26(76.0)	8(23.5)	34(100)
Total	120(60.0)	80(40.0)	200(100)
X^2		Significance level	
4:630		0.031 **	

Source: Own surveys, 2006, ** = significant at 5percent level, Figures in parenthesis are percentages

Demographic and Educational Characteristics of Household Members and Livelihood Diversification.

Age Of Household Head:- the t-test result on mean age difference(see table 4.11) seems to suggest that households headed by relatively younger people show greater tendency to participate in off-farm activities as compared to households headed by older people. This could be explained by the fact that the younger generation has small land holdings size, resulted from the continuous land redistribution and inheritance, and concomitantly low agricultural income. Thus to cope up with this problem young headed household could engage in various different off-farm activities. They can augment their total income and improve their well-being by engaging in different off-farm and farm jobs.

Family Size- though on average diversifier households tends to have more family size (i.e. 4.9) as compared to that of non-diversifier households (i.e. 4.8) the difference is not significant.

Male Family Members- Diversifier households tend to have significantly higher male family members than their counter parts. This can explain that households that have relatively larger number of male family members can allocate certain labor in farming and the remaining in off-farm activities.

Literate Family Members- though not significant diversifier households tend to have larger number of literate family members, as compared to non-diversifier households.

Generally, data presented so far suggests that the behavior of older households might be explained by lack of education and lack of male labor both of which tend to cause them to confine their activities to farming.

The table below summarizes the demographic characteristics of a household which might influence livelihood diversification.

Table 4.11 Demographic and educational characteristics of households and livelihood diversifications

Variable	Diversifier household		Non-diversifier household		Significance
	Mean	S.D	Mean	S.D	
Age of household head	44.28	11.51	45.05	13.47	0.0387**
Family size	4.88	1.89	4.84	1.85	0.7516
Male family members	2.58	1.40	2.37	1.07	0.0033***
Family member between the age of 15-60	3.02	1.32	2.93	1.39	0.5589
Literate family members	3.45	1.81	3.13	1.63	0.2170

Source: Own Survey, 2006, ** and ***=significant at 5 and 1 percent levels

Access to Land and Livelihood Diversification

Access to and size of land, up on which rural livelihoods greatly depend, affects the livelihood strategies to be employed. Table4.12 vividly depicts that on average diversifier households own significantly smaller land size as compared to non-diversifier households. This fact seems to suggest that livelihood diversification in the study area is triggered mainly by push factors than pull factors. Those households who have relatively larger land tend to confine to farming as their livelihood strategy than their counter parts. The latter engage more in the off-farm activities possibly to supplement their limited agricultural incomes. Diversifier households also tend to access extra land through renting systems than non-diversifier ones. Based on the previous information we can see the following situations. Diversifier households tend to have on average larger family size and larger male family members yet smaller land size, which stood 4.88, 2.58 and 1.3 (ha) respectively. The corresponding figure for non-diversifier households stood 4.84, 2-4 and 1.7 (ha) respectively.

Table 4.12 Land holding size and livelihood diversification

Asset type	Diversifier households		Non-diversifier households		Significant level
	Mean	S.D	Mean	S.D	
Own land holding size (La)	1.30	0.6	1.70	0.77	0.0039***
Land shared in (ha)	0.5	0.42	0.45	0.38	0.5066
Land rented in	1.25	1.24	0.60	0.34	0.094*

Source: Own survey, 2006,*and***=significant at 10 and 1 percent levels

Equib Membership

Equib is a community association, which serves as lending and saving organization for its members. Equib has both social and economic functions. Households were asked whether they are a member of an Equib in their locality. The table 4.13 summarizes their response

A simple attempt was made to capture the association of membership in Equib with livelihood diversification. Accordingly, it was found out that there is a significant difference among diversifier and non-diversifier households on their Equib membership. Households who are members of Equib associations in their locality tend to show greater propensity to engage in various off-farm activities than their counterparts. This could be due to Equibs role in providing /sharing experiences, network or information provide lump of money all of which can facilitate to run off-farm ventures

Table 4.13 Equib membership and livelihood diversification

Response	Diversifier household	Non-diversifier household	Total
Yes	54(79.4)	14(20.6)	68(100)
No	66(50)	66(50)	132(100)
X^2		Significance level	
16.2		.000 ***	

Source: Own Survey, 2006, ***= Significant at 1percent levels Figures in parenthesis are percentages.

Access to Irrigation Facilities

Access to irrigable land can have effect on the livelihood strategies of rural households through the type of crops grown. Some households may grow crops that are mainly used for household consumption (such as cereals and pulses) while others may grow horticultural crops which can be used for marketing purpose. The latter group can have linkage to the market than the former which will have further implication on their livelihood. Those who have good linkage with the market can generate adequate income.

Table 4.14 Access to irrigation land and livelihood diversification.

Access to irrigable land	Diversifier households	Non-diversifier households	Total
Own irrigable land	38(32)	32(40)	70(35)
No irrigable land	82(68)	48(60)	130(65)
Total	120(100)	80(100)	200(100)
$X^{2=}$		Significance value	
15.4		.004***	

Source: Own Survey, 2006 ***=significant at 1 percent level

From the above table it is indicated that there is a significant difference among diversifier and non-diversifier households on their access to irrigable land. The

non-diversifier households seem to have more access to irrigable land than the diversifier households.

Access to Financial Asset and Livelihood Diversification

Livelihood diversification is conditioned by a variety of assets. One of the most important household assets, which affect rural livelihood diversification, is financial asset (income, loan/credit, livestock etc). Based on the amount of financial assets rural household could diversify their economic activities into various off-farm activities or may chose farming as their source of livelihood.

Table4.15 Access to financial assets and livelihood diversification

Asset type	Diversifier households		Non-diversifier household		Sign. level
	Mean	S.D	Mean	S.D	
Livestock in TLU	5.55	3.29	5.60	2.60	0.0134**
Loan from MFIs(Birr)	833.3	441.64	1285.33	824.80	0.0139**
Income from irrigation crops	2022.50	1772.48	713.64	574.88	0.0004***
Number of Oxen	1.80	0.49	1.82	0.60	0.3586
Number of pack animals	1.48	0.77	1.29	0.52	0.0012**

Source: Own Survey, 2006, **and ***=significant at 5 and 1 percent levels

Livestock Ownership- In rural community livestock ownership is considered as proxy measure of wealth and status. In the study area mixed farming is practiced. That is households engage both in growing crops and raising livestock. Households which own large number of livestock, can benefit a lot besides direct consumption they can generate income from the sale of milk, egg, by products, and direct sale of animals. This implies that livestock ownership has effect on rural livelihood. As presented from the above table, there is a significant difference in livestock ownership, measured in Tropical Livestock Unit (TLU), among diversifier and non-diversifier household. Diversifier households seem to own smaller number of livestock units as compared to non-diversifier

households. Due to this reason their farm income would be limited. Therefore, to supplement their limited farm income they might engage in off-farm activities.

Number Of Drought Animal (Oxen)- although non-diversifier households seem to have larger number of oxen than the diversifier households the difference is not significant.

Number of Pack Animals-The number of pack animals owned shows significant difference between the diversifier and non-diversifier households. Those households which engage in off-farm activities seems to own larger number of pack animals than the non diversifier households This could be explained by the fact households that participate in various off-farm activities use pack animal for marketing purpose (e.g. trading purpose and to load firewood and other products to nearby towns).

Income from Irrigation-Average income Obtained from crops grown by irrigation shows a significant difference among diversifier and non-diversifier households. The former tends to generate larger amount of income from crops grown by irrigation systems than their counter parts.

Credit-The effect of cash credit from micro finance institution (MFI) could be quite different from own income. Non-diversifier households appear to take bigger amount of cash Credit from MFIs as compared to diversifier households. This could be due to the reason that the latter are risk averters due to their limited farm assets that can serve as a security.

Distance from Market Places and Main Roads

Publicly owned assets, which are not directly controlled by households, seem to show some association with livelihood diversification. These publicly provided assets include market place and other infrastructures (road, electricity,) etc. Apart from household socio-economic characteristics differences in distance from market places (min) and from main roads (min) seems to have bearing on livelihood diversification. Households which diversify their economic activities

appear to be found nearer to market places and main roads unlike the non-diversifier households.

Table 4.16 Distance from market places and main road and livelihood diversification

Description	Diversifier household		Non-diversifier household		Significance
	Mean	S.D	Mean	S.D	
Distance from market places (min)	5:18	4:12	5:42	4:54	0.0437**
Distance from main road (min)	2:24	3:6	2:54	3:18	0.0315**

Source: Own Survey, 2006, **=significant at 5 percent level

To verify whether the suggested bi-variate relationship between household characteristics and livelihood diversification is statistically significant a multi-variate analysis was carried by employing Logit model. The results of the Logit model are discussed in the following section.

4.3 Determinants of Livelihood Diversification

An Analysis of Logistic Regression Results

Binary Logistic Model was developed to identity determinants of rural livelihood diversification. Accordingly, the dependent variable livelihood strategy was regressed against the various explanatory variables. The result of the binary logistic model is summarized below.

Table 4.17 Maximum Logistic Regression Results.

Explanatory Variables	B (coefficient)	S.E	P-value	Odds Ratio
SEXHH	.964	.802	.056*	2.623
AGEHH	.003	.017	.838	1.003
LITHH	.314	.167	.035**	2.554
FAMMR 15-60	.063	.209	.762	1.065
LANDSIZ	-.609	.292	.004***	3.533
LIVESIZ	-.231	.109	.003***	1.401
MARKDIS	-.004	.003	0.045*	2.126
ROADDIS	-.013	.006	0.017**	2.409
IRRILAN	.348	.386	.368	0.812
CREDACCE	-.389	.438	.374	0.791
EXTENTACCE	.574	.404	.155	2.020
CONSTANT	-2.862	2.559	.263	0.252

Source: Own data and calculation, year 2006, *, ** and ***= Significant at 10, 5 and 1percents respectively, R^2= 75%

Model Results Summary

The goodness of fit of the logistic regression model was examined against the percent correct prediction. As Gujarati (2006) has pointed out prediction is successful when the estimation power of the model is greater than 0.5. The prediction power of the model was found to be 75%.

Before fitting the data to the model, the existence of multi-co linearity problem was tested using Variance Inflation Factor (VIF) and Conditional Index (CI) for continuous variables and Partial correlation coefficient for discrete variables. When the value for VIF and CI is greater than 10 and 30 respectively, it indicates the existence of severe multi-co linearity problem among continues variables. When the value for partial coefficient is greater than 0.5, it indicates the existence of multicolinearity problem among discrete variables. Accordingly, multi-co linearity problem was found among the discrete variables of sex and marital status but not among continuous variables. Thus after avoiding the correlated and less important variables, other variables without colinearity problem were put in the model for analysis.

Results from the logistic regression revealed that the coefficients for variables age of household head, productive labor, amount of cash credit and access to extension and access to irrigable land were found statistically insignificant. On the other hand, the coefficient for variables number of livestock(TLU), size of own land(ha), distance from main road or market places(min), educational status of head of household and sex of head of a household were found to be statistically significant .It is also evident that the coefficient for some statistically significant variables is positive and while for others it is negative reflecting the non-unidirectional effect of these variables on livelihood diversification. However, generally many regressors have the expected signs. Below the significant variables are discussed briefly.

Sex of Head of the Household

It is common that rural women headed households have limited capacity to rely on farming as their major source of livelihood due to their limited asset bases(land, ox ,labor). Due to the limited land size, shortage of male labor coupled with existing social norms and other related factors could curtail

women's participation in farming activities. In such a scenario women headed households may have greater propensity to shift their economic activities towards off-farm activities.

As anticipated, the results of the logistic regression revealed that the coefficient for the variable sex of head of household was statistically significant at 10 percent level and the sign was positive.The odds ratio value suggests that female headed households likely to diversify its economic activities towards off-farm activities, other variables remaining constant, by a factor of 2.6.

This finding was similar with the works of Dolan (2005) who identified in Uganda that more female headed households with limited landholding engaged in off-farm activities as compared to their counter parts.

However, it is important to differentiate between diversification activities that are adopted for survival issues from that of mainly employed for accumulation purpose (Reardon, 1997). Diversification among female headed households could be used for survival issues. This is because in most cases female-headed households were found to have less access to essential assets or capitals (e.g.skill, finance) to embark on more remunerative off-farm activities (Dolan, 2005).

Age of Household Head

Though, initially it was hypothesized that as age of a household head increases the tendency to diversify economic activity towards off-farm will decrease.

The logistic regression result revealed that the coefficient for the variable age was not statistically significant at either 1, 5 or 10 percent levels. Therefore in this study age was not found to be a determinant factor of livelihood diversification.

Education/ Literacy Status/

In many empirical evidences education is found to have a positive influence on livelihood diversification. Education is used as a proxy indicator of the stock of human capital. Educated people who have the knowledge and skills can easily engage in some rural off-farm activities (e.g. self employment or salaried jobs) than the illiterate people.

As anticipated, the result was statistically significant at 5 percent level and the sign was positive. The odds ratio 2.5 implies that if the head of a household become literate, the household's chance of engaging in various off-farm activities will increase by a factor of 2.5.

Family Members with the Age of 15-60

Initially it was hypothesized that households with greater number of family members with the age of 15 to 60 will show higher tendency to diversify their economic activities. In contrast to the anticipation, the result was statistically significant at neither 1, 5 nor 10 percent levels. Therefore, the variable is not the determinant of livelihood diversification in the study area.

Own Land Size

Land is the most important resources for the livelihoods of rural households. The association between land and livelihood diversification can be seen in two ways. In some contexts households with large land size were able to engage in better remunerative activities (Barrett, Reardon and Webb, 2001; Barrett, et al, 2001). On the other hand, households with small land size, which is resulted from continuous land fragmentation, were engaged more in off-farm activities (Ellis, 2000, Bryceson, 2005; Tesfaye, 20005). The hypothesis for this study for the variable land size was made in relation to the latter scenario.

As anticipated, the result of the logistic regression for the variable land size was found statistically significant at 1 percent level. The sign was negative suggesting that as the land size of a household decreases the tendency to diversify its economic activities into off-farm activities will increase.

The odd ratio value, i.e. 3.5, implies that other variables remaining constant, a one hectare decrease in the land size of a household will increase household's level of participation into off-farm activities by a factor of 3.5. The findings of this study suggest that households who own adequate land will stick to farming activities. The opposite holds true for off-farm activities.

This finding was consistent with the work of Tesfaye (2005) and quite opposite to that of Barrett et al. (2000) and Reardon et al. (2000) cited in Barrett et al., 2001). It was also in contrast to the findings of Mulat and Tefari (1996) who pointed out positive association between some off-farm activities and holding size.

Size of Livestock Owned

Livestock ownership has a multi-dimensional purpose for rural households. Livestock can be a source of food, income, drought power, transportation etc. Livestock is also a store of wealth for a rural household both on short and long term basis. They have an extra value of being a symbol of wealth and social status (Ashley and Nanyeenya, 2005; Yared, 1999). Households with large number of livestock can generate adequate income from it which can enable them easily fulfill their food and other needs and this can reduce households' propensity to engage in off-farm activities. Thus, having large livestock can reinforce the farming system. Farmers with larger livestock might show less interest to engage in off-farm activities.

As priori expectation, the results of logistic regression portray that the coefficient for the variable livestock was found statistically significant at 1 percent level and the sign is negative. The odds ration value, 1.4, for livestock predicts that a decrease of one TLU, other variables remaining constant, will increase participation of a rural household in off-farm activities by a factor of 1.4.Therefore, it can be concluded that livestock size, measured in TLU, is one of the determinants of livelihood diversification in the study area.

This result is inline with the works of Mulat and Teferi (1996) who came up with a result of the negative relationship between livestock size and livelihood diversification. But it is in contrast with that of Anderson and Deshingkar (2005) who identified the existence of positive association between livelihood diversification and livestock size in six rural village of India.

Access to Irrigable Land

Access to irrigable land is expected to influence the livelihood strategies of rural households. Households that have access to irrigable land are expected to show greater tendency to participate in off-farm activities than households without irrigable land. However, contrary to priori expectation, the coefficient for the variable access to irrigable land was not statistically significant at neither 1, 5 nor 10 percent levels.

Access to Credit

Access to working capital is one of the formidable changes which constrained many rural households from participating in better lucrative off-farm activities. This problem can be addressed by creating cash credit access to rural households. The amount of money could play important role in determining the type of off-farm venture.

It was expected that household who took larger amount of cash loan will diversify their economic activities to off-farm activities more than those who took smaller amount of cash credit.Contrary to the anticipation, the coefficient for the variable was not statistically significant at either 1, 5 or 10 percent levels and the sign was negative as well.

Distance from Nearest Market Places and Main Road Measured in Minutes

The variables distance from nearest market places and main roads measured in minutes were included to capture the effect of these infrastructures on livelihood diversification. Distance from market places and main road is expected to have a negative coefficient.

As expected, the coefficient for the variables distance from nearest market places and main road was found statistically significant at 10 and 1 percent levels respectively. The signs were also negative. The adds ratio value for the variable distance from nearest market places and main road was 2.1 and 2.4 respectively predicting that a decrease of a distance walk in one minute from the residence of a household to a market place and main road, other variables remain constant, will increase livelihood diversification by a factor of 2.1 and 2.4 respectively. The results from this study were more or less similar to many other empirical evidences (Lanjouw et al., 2001; Moduma and Wobst, 2005; Escobal, 2001). According to Barrett, Reardon and Webb (2001:18) greater physical access to markets and road improves non-farm earnings

Extension Service

It is expected that farmers who are frequently visited and advised by DA/Development Agent/ will have a better knowledge on how to increase agricultural productivity and farm income. Whereas farmers who are not visited and advised by extension workers will have limited knowledge on how to

increase agricultural productivity. Due to this reason the latter group will show greater probability to participate in off-farm ventures. However, quite contrary to the expectation, the coefficient for the variable was found statistically insignificant at any of the 1, 5, and 10 percent levels.

Generally, both the descriptive and logistic statistics indicate that rural households rely on multiple income sources and involvement in those activities is largely influenced by asset endowments of households. The following section summaries the findings of the study and the ways forward.

CHAPTER FIVE

5. Conclusion and the Ways Forward

5.1Conclusion

Traditionally rural economy was equated with farming .There did little understand in differentiating the rural household from the farmer (Bebbington, 1999; Meindertsman; 1997; Escobal, 2001). However, currently the multiplicity of rural economy and the heterogeneity of the rural actors have been recognized. In the contemporary poor countries livelihood diversification appears to be one of the top development agendas as an entry point in the design of the rural development interventions (Scoones ,1998).

Livelihood diversification could be associated with push and pull factors (Ellis, 2000; Ponte 2002). It could be adopted as a response to the fall of the agricultural sector or adapted to take advantages of employment opportunities that come with the growth of urban centers in the rural areas. In Ethiopia, albeit, farming remains the dominant forms of livelihood, rural households are increasingly able to broaden their income base by running other off –farm ventures (Masefield, 2001;Tesfaye, 2003).

Ethiopian farm is suffering from a number of factors related to continuous land fragmentation, unreliable weather condition, low technological adoption, in appropriate policy interventions, inadequate infrastructures and poor human development etc. Cumulatively all these problems have suffocated growth in the agricultural sector and reinforce it to remain in stagnant position. Given the current trend the sector would not have the capacity to absorb the ever growing rural labor and the efforts in poverty reduction through the agricultural sector alone appears to be unattainable in the foresable future.

The government puts ADLI as its development strategy and the rural economy as an engine of growth and the small holder farmer as the main actor. This orthodoxy thinking and practice could create a vacuum for the development of the off-farm sector. Through not given due policy support, rural households depend on a diversified economic activities besides farming. This study has highlighted that about 60 percent of sampled households in the woreda were engaged in a variety of off-farm activities and able to generate extra income from these sources. For households that diversify their economies 18.6 percent of their net annual income comes from off-farm activities.

Some of the off-farm activities identified in the study area include rural trading activities, rural crafts, daily labor, rural shopping beverage sale, salaried rural jobs, firewood sale etc. Livelihood diversification in the study area is affected by intrinsic household characteristics and other locally available assets.

The logistic regression result indicates that household headed by literate people and female, and those who own smaller land holding and livestock size have shown greater probability of diversifying their economic activities than their counter parts. Furthermore, households which are located nearer to market places and all weather roads indicate greater tendency to participate in off-farm activities than those households located for away from these structures. These results vividly indicated that differences in initial asset endowment play significant role in shaping livelihood directions.

Though livelihood diversification seems fueled by land and livestock shortage, it is the relatively educated households and those who are found nearer to market places and all weather roads that were able to engage in various off-farm activities. Generally, taking the smaller relative small average income share of the off- farm sector and the logistic regression results of the determinants of livelihood diversification suggest that in the study are livelihood diversification is mainly fuelled by push factors and less by pull factors.

5.2 The Ways Forward

This study has shed light that livelihood diversification seems an integral part of the income portfolio of rural households. In light of this finding the following key and priority areas of interviews are forwarded.

1. The rural economy is more than agriculture. In reality it is an agglomeration of the farm and off-farm sectors. Majority of rural households (60%) do not exclusively depend for their survival on farming sector. Rather they rely on multiple income sources. Therefore, a multi-sectored rural development approach which can fit the different livelihood strategies should be designed and implemented. In this regard, rural development practitioners and policy makers should be able to refresh their thinking in the process of formulating policies and strategies in a manner that can incorporate the role of the off-farm sector.
2. This study revealed that land shortage was one of the pushing factors of livelihood diversification. On the contrary, the existing land tenure system forces rural labor to remain confined in the farming sector. Therefore, it should be revisited so as to allow and encourage underutilized rural labor to engage in other off-farm activities. In this regard efficient land market should be promoted so that households who have small land holding or with special business skills can rent out or sale land on temporary basis and involve in other better off-farm business ventures.
3. The development of human capital has paramount significance in deriving development both in the farm and off-farm sectors. In this study, it was highlighted that the relatively literate households were able to diversify their economic activities. Therefore, enhancing the human capital (i.e., skill, knowledge, heath) of rural households by expanding

adult education, entrepreneurial and business skill training centers etc to the rural areas should be given due emphasize by policy makers.

4. Expanding rural infrastructure such as road, electricity and related infrastructures to rural communities should be one of the policy supports of in designing rural development interventions. The establishment and expansion of these public infrastructures to rural households can facilitate the growth of the off-farm sector. It can also create positive synergy between the rural and urban economy through backward and forward linkages .Households that have better access to roads can easily transport their products (both farm and off-farm) to the market and purchase agricultural inputs and other services from the market with cost effective manner.
5. This study has highlighted that households located nearer to market places diversify their economic activity towards off-farm jobs. These market places are considered as proxy indicators of small towns. Hence, the local or regional government should encourage the growth of small rural towns which can be center of growth for the rural economy. These centers can be source of knowledge and skill and market places for the hinter land rural community. They can also facilitate for some rural households who have special skills to switch to business ventures other than farming. In the long run these centers can absorb the growing rural labor and reduce massive migration to big and primate cities.
6. Rural development practitioners and the local government should able to identify, document and encourage potential sustainable livelihood diversification that can reduce pressure on the natural resources (land, forest) and bring improvement in the well-being of the people.
7. Agriculture still accounts the larger share of household income. Therefore, efforts that can increase the productivity of the sector should be strengthened.
8. Empowering female headed households should be given due policy attention both by rural policy makers and local governments.

References

Ahmed, A.G. M .2002. Changing systems of Livelihood in Rural Sudan: OSSREA, Addis Ababa, Ethiopia.

African Development Report .2002. Rural Development for Poverty Reduction in Africa, Oxford University Press, New York.

Alemneh Dejene.2003. Integrated Natural Resources Management to Enhance Food Security: The Case of Community- Based Approaches in Ethiopia, FOA and Rome.

Andreson, E and Deshingkar, A.2005. Livelihood Diversification in Rural Andhra Pradesh India: In Ellis, F and Freeman, A (ed) Rural Livelihood and Poverty Reduction Policies, Routledge, London.

Ashley, S and Nanyenya, W.2005.More than Income: Pro-poor Livestock Development Policy in Uganda: In Ellis, F and Freeman, A (ed) Rural Livelihoods and Poverty Reduction policies, Routledge, London.

Ayalneh Bogale.2002.LandDegradation, Impoverishment and Livelihood Strategies of Rural Household in Ethiopia: Farmers Perception and Policy Implementation Vol.8, Humboldt University, Berlin.

Barrett,C.,Mesfin Bizuneh, and A.Aboudi.2001. Income diversifications,Poverty Traps and Policy Shocks in Coted Ivore and Kenya: Cornel University

Barrett, C.Reardon,T and P.Webb.2001. Non farm Income Diversification and Household Livelihood Strategies in Rural Africa: Concepts, Dynamics and Policy Implications.

Barrett, C and Reardon, T.2000. Asset, Activity, and Income Diversification among African Agriculturalists: Some Practical Issues. Cornel University. New York, USA.

Barrett, C and Swallow, B. 2003. Dynamic Poverty Traps and Rural Livelihoods: Working Paper. Cornell University, New York, USA.

Barrett, C and Swallow, B. 2005. Dynamic Poverty Traps and Rural Livelihoods: In Ellis, F and Freeman, A (ed). Rural Livelihoods and Poverty Reduction Policies, Rutledge, London.

Bebbington, A.1999. Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty: World Development Vol. 27 No. 12.

Belaineh Legesse.2002. Rural Livelihoods: Heterogeneous Perspectives, Objectives and Constraints: Cases from Kersa and Babile Woredas, Estern Highlands of Ethiopia: Ethiopia Journal of Development Research. Vol. 24 No. 2 PP 40-68.

Berhanu Adnew and Fayera Abdi.2005. Land Registration in Amhara Region Ethiopia: Securing Land Rights in Africa, Russell Press, Nottingham, Uk.

Bryceson, D. 2005. Rural Livelihoods and Agrarian Change: In Ellis, F and Freeman A. (ed) Rural Livelihoods and Poverty Reduction Policies, Routledge, London.

Carney, D .1998. Implementing the Sustainable Rural Livelihoods Approach: In D. Carney (ed) Sustainable Rural Livelihoods: What Contribution Can We Make? London: DFID.

Dean, J, Schaffer, J and S.Smith .2005. Attacking Poverty in the Developing World: Christian Practitioners and Academic in Collaboration, USA.

Degefa Tolossa.2005.Rural Livelihoods, Poverty and Food Insecurity in Ethiopia: A Case Study at Erenssa and Garbi Communities in Oromia Zone, Amhara, National Regional State. Doctoral Thesis. Norweigian University of Science and Technology.

Deininger,K and Olinto,P .2001.Rural Non-farm Employment and Income Diversification in Colombia: World DevelopmentVol.29 No.3 PP 455-465.

Deinissie Damite and Workneh Negatu . 2004. Determinants of rural livelihood diversification:evidence from southern Ethiopia.In Quarterly Journal of International Agriculture ,Vol. 43,NO. 3

Dercon, S and Krishnan, P .1996. A Consumption- Based Measure of Poverty for Rural Ethiopia in 1989 and 1994: In Bereket Kebede and Mekonnen Tadesse (eds): The Ethiopian Economy Poverty and Poverty Alleviation proceedings of the Fifth Annual Conference on the Ethiopian Economy, Addis Ababa.

Devereux, S.2006. Vulnerable Livelihoods in Somali Region Ethiopia: Research Report 57. University of Sussex, Bridgton, UK.

Dolan,A.2005. Household Composition and Rural Livelihoods in Uganda: In Ellis, F and Freeman, A (ed). Rural Livelihoods and Poverty Reduction Policies, Routledge,London.

Ellis, F. 2000. Rural Livelihoods and Diversity in Developing Countries, New York, Oxford University Press

Ellis, F and Freeman, A .2004. Rural Livelihoods and Poverty Reduction Strategies in Four African Countries. Vol. 4 No. 4 PP 1-26

Escobal,J .2001.The Determinants of Non-farm Income Diversification in Rural Peru: In World Development Vol.29 No 3. PP 497-508

FDRE .2002. Food Security Strategy, Addis Ababa.

Ferreira, F and Lanjouw, P.2001.Rural Non-farm Activities and Poverty in the Brazilian Northeast: World Development Vol.29 No 3 PP 509-528.

Francis, E.2000.Making a Living: Changing livelihoods in Africa .Routlege New York.

Getnet Alemu .2005. Poverty and Development in Ethiopia: Challenges and Options: In Getnet Alemu, Belay Sime and Mulugeta F. (ed) Poverty and Development Challenges and Options. IDR, Addis Ababa University.

Gujarati, D .2006. Basic Econometrics: Tata McGraw Hill, New Delhi.

Lanjouw,P .2001.Nonfarm Employment and Poverty in Rural El Salvador: World DevelopmentVol.29 No.3 PP 529-547

Lankford, B .2005. Irrigation, Livelihoods and River Basins: In Ellis, F and Freeman A. (ed) Rural Livelihoods and Poverty Reduction Policies, Routledge, London.

Lamin, J.M.F.2000. poverty Monitoring in Africa. UN Economic Commission for Africa. Addis Ababa.

Maduma, J and Wobst, P.2005.Determinants of Rural Labor Market Participation in Tanzania, Africa Studies Quarterly Vol. 8. Issue No 2.

Masefield, A .2001. Chronic Food Security in Ethiopia: In Yared Amare(ed) Looking though a Livelihood Lens: Food Security and Sustainable Livelihoods in Ethiopia, F.S.S

McDonagn, J .2005. Crop-based Farming systems and Diverse Livelihoods in Uganda in Ellis, F and Freeman, A (ed): Rural Livelihoods and Rural Poverty Reeducation Strategies, Routledge, London.

Meindertsman, D. 1997. Income Diversity and Farming systems: Modeling of farming household in Lowbok. Royal Tropical Institute. Amsterdam.

Mekonnen Tadesse.1996b. Determinants and Dynamics of Urban poverty In Ethiopia. In poverty and poverty Determinants of Ethiopia. Ethiopian Journal of Economics. Ethiopian Economic Association Vol. 8 No 1. pp 61-81.

Mesfin Ayele.2004.Household Livelihood Strategies and Their Relative Importance In Drought Prone- Areas: The case of Bati Woreda, In Amhara National Regional State, MA Thesis, Addis Ababa University, Addis Ababa.

Metalign Ayehu .2005. Rural Poverty Situation and Determinants: The Case of Kersa Kondality Woreda, South West Showa. MA. Thesis ,Addis Ababa University, Addis Ababa.

Mulat Demeke and Teferi Regassa .1996. Non-farm Activities in Ethiopia: The Case of North Shewa Economy: Poverty and poverty Alleviation: Proceedings of the Fifth Annual Conference on the Ethiopian Economy, Addis Ababa.

Mulat Demeke. 2001. Off- farm Income Generation opportunities in Ethiopia: opportunities and constraints in food insecure woredas of Oromiya and Amhara Regional states: Ethiopian Development Forum. Vo 1.2 NO. 1 PP 20-43,IDR, AAU .

Naude, A and Taylor, E. 2001. The Determinants of No- farm Activities and Incomes of Rural Households in Mexico, with Emphasis on Education: World Development Vol.29 .No. 3 pp 561-572

Ponte, S.2002. Farmers and Markets in Tanzania: how policy reforms affect rural livelihoods in Africa. Dare Salam.

Ramakrishna, G. and Assefa Demeke.2002. An Empirical Analysis of Food Insecurity in Ethiopia: The case of North Wollo, African Development, Vol XXVII, No. 142, Counsel for the Development of Social Science Research in Africa (ISSN 0850-3907).

Reardon, T.1997.Using Evidences of Household Income Diversification to Inform study of the Rural Non-farm Labor Market in Africa: World Development Vol.25 No 5: pp 735-47

Reardon,T.Berdegue,J and G.Escobal .2000.Rural Non-farm employment and Income in Latin America: Overview and policy Implication. World Development Vol.29 No 3 pp 411-425

Ruben,R and Berg, M.V.D. 2001. Non-farm Employment and Poverty Alleviation Of Rural Form Households in Honduras: World Development Vol. 29 No.3 pp 549-560.

Scoones, I .1998. Sustainable Rural Livelihoods: A framework for Analysis, IDS working paper 72.

SUNARMA. (2006). Wof-washa Forest and Land Use management project. Addis Ababa, Ethiopia.

Swift,J and Hamilton .2001.Household Food and Livelihood Security :In Food Security in Sub-Saharan Africa(ed) Devereux and Maxwell.

Tassew Woldehanna .2004. New pro-poor policies, pre PRSP experiences and the 2003-4 Budget in Relation to Agriculture and Food Security in Ethiopia: in Tassaw Woldehanna and Walter (eds.) Pro-poor Budgeting and the Role of Parliament in the Implementation of PRSP in Ethiopia, GTZ and Addis Ababa University, Addis Ababa.

Tegegne Gebre- Egziabher .1999. Rural – urban Relations in Rural regions: The Case of Coffee and Non – Coffee Growing Regions in the Central and South western Ethiopia: in Ethiopian Journal of Development Research Vol.21 NO 2.

Tellegen,N .1997.Rural Enterprises in Malawi :Necessity or Opportunity? Research Series, African Study Center .The Netherlands

Tesfaye Lemma .2003.Livelihood strategies in the context of population pressure: A case study in the Hararghe Highlands, Eastern Ethiopia. Desertation.University of Pretoria .

Vosti, A and Reardon,T .1997.Sustainability, Growth and Poverty Alleviation: A Policy and Agro-Ecological Perspective, Johns Topkins University Press, London.

Workneh Negatu .2005. Unshackling from Persistent Food Poverty: Technological Progress and Farm Income- An Empirical Observation from Rural Ethiopia: In Getnet Alemu. Belay Sime and Mulugeta F. (ed) Poverty and Development in Ethiopia: Challenges and Options, IDR, Addis Ababa University.

World Bank.1990. World Development Report: poverty

----------.2005. A Country Status Report on Health and Poverty. Vol. II African Regional Human Development and the Ministry of Health Ethiopia.

--------- .2005. Wellbeing and Poverty in Ethiopia: the Role of Agriculture and Agency. Report No. 29468 Ethiopia.

--------- .2005. How do we define the Rural Sector? In beyond the City: The Rural Contribution to Development World Bank Latin American and Caribbean Studies.

Would-Selassie Abbute Deboch . 2002.Gumuz and Highland Settlers: Differing Strategies of Livelihoods and Ethnic Relations in Metekel, Northwest Ethiopia.

Yared Amare.1999. Household resources, strategies and food security in Ethiopia: a Study of Amhara Households in wogda, North Shewa ,Addis Ababa University Press,Addis Ababa .

.

-------- .2001. (ed) Food Security and Sustainable Development in Ethiopia, FSS.A.A

-------- .2002.Rural Poverty in the Ethiopia: Household Case Studies from North Shewa.FSS.Addis Ababa.

Yohannes Kinfu.1996. Demographic Characteristics of poor Households in Urban Ethiopia. Bereket K. and Mekonnen T.(eds). The Ethiopian Economy: poverty and poverty Allemiatsn proceedings of the Fifth Annual conference on the Ethiopian Economy Addis Ababa.

Annex -1 Pearson's Correlation Coefficient of discrete Variables

Discrete Variables	Sex	Academic Status	Marital Status	A climate	Extension	Irrigable land
Sex	1	-0.044	0.749	-0.095	0.248	0.1137
Academic Status	0.04	1	-0.180	0.174	-0.246	0.005
Marital Status	0.149	-0.180	1	-0.060	0.272	0.167
Climate	0.024	-0.174	-0.060	1	-0.059	0.096
Extension	0.248	-0.246	0.272	0.059	1	0.176
Irrigable Land	0.137	-0.005	0.167	0.069	0.176	1

Annex 2 Pearson's Correlation Coefficient of Continues Variables

Variable	Colinearity Statistics	
	VIF	CI
Age	1.047	1.003
Family size	1.383	3.713
Family member between the ages 15 to 60	1.327	4.358
Land Size	1.383	6.215
Live stock size	1.465	7.626
Loan credit amount(birr)	1.301	9.246
Market Distance	1.205	11.194
Road Distance	1.211	13.848

Part 1- Background Information of Respondents

Kebele.....

Gote.....

Village.....

Countyside.....

Climate Dega Woina Dega Kolla.....

1.1 Household head marital status

1. Married
2. Not married
3. Divorced
4. Widowed
5. Others

1.3 Ethnicity of head of the household

1. Amhara
2. Oromo
3. Argoba
4. Other (specify) _____

1.2 Religion of head of the household 1. Orthodox Christian

2. Muslim
3. Protestant
4. Other (Specify)_____

1.4 Household size and other features of household members

Ser. No	Family member (1)	Sex (2)	Martial status (3)	Age (4)	Literacy status (5)	Major occupation (6)
1						
2						
3						
4						
5						
6						
7						
8						
9						
	1. Husband 2. Wife 3. Son 4. Daughter	1. M 2. F	1. Married 2. Single 3. Divorce 4. Widowed		1. Iliterate 2. Only read and write 3. Priest/Kuran	1. Farmer 2. Trader 3. Pottery 4. Daily laborer

	5. Grandson 6.Granddaughter 7. Nephew 8. Cousin 9. Laborer 10. Others		5. Others		4. Grade 1-6 5. Grade 7-8 6. Grade 9-12 7. Certificate /TTI 8. Diploma 9. Above diploma	5. Carpenter 6. Weaver 7. Beverage seller 8. Tailor 9. Student 10.Others

Part II Access to natural capital, related activities and land tenure issues

2.1 Do you own agricultural land?

1. Yes 2. No

2.2 If yes, how do get it?

1. Through land redistribution
2. Through inheritance
3. Share cropped in
4. Rented in
5. Gift from relatives
6. Other (specify)

2.3 What is the total amount of land on which you pay tax and allocated for the following purpose during the year 1998

No.	Types o f land	Timad	Hectare
1	Under annual crops		
2	Under cash crops		
3	Garden land		
4	Grazing land		
5	Forest land		
6	Follow land		
7	Other (specify)		
	Total		

2.4 What is the total amount of land you share cropped in or rented in during the harvest year of1998 (E.C) (if any)

No.	Land type	Unit of measurement
1	Land rented in	Hectare
2	Land share cropped in	
3	Total	
		1No ox 2. Shortage of seed 3. Lack of labor 4. Having excess land 5. Others

2.6 what is the trend of land holding size per household during the last two or more decades?

1. Increasing 3. No change
2. Decreasing 4. I do not know

2.7 If decreasing what do you think the reason could be

1. Continuous land redistribution
2. Population growth
3. Others (specify)

2.8 Is there any grazing land or forest on which you use commonly?

1. Yes 2. No

2.9 If yes, what do you benefited from it?

1. Grazing 2. Firewood for home consumption
3. Fire wood for sale 4.Pole for house construction
5. Fruits 6. Other (specify)

2.10 who owns the forest or the grazing land?

1. Kebele/local government 2. Community
3. NGO 4. Other (specify)

2.11 Do you own irrigable land ?

1. Yes 2. No

2.12. What kind of crops you grew using the irrigation during the last 12 months, and for what purpose they were used ?

No.	Types of crop	Amount produced Quintal kg	Purpose	Income obtained (birr) if for sale
1	Barely			
2.	Wheat			
3.	Vegetables and fruit			
4	House beans			
5	Fiud peas			
6	Lentils			
7	Onion			
8	Fenu greek		1 Own consumption 2 For sale 3 Other (specify)	

3.1 Crop production and /or land productivity and income obtained from sale of cropsduring the last the harvest year 1998 (E.C)

No.	Types of crop	Area of land cultivated		Total produced		Total sold		Amount of income obtained (birr)	Purpose of income
		Belg season	Meher season	Quintal	Kg	Quintal	Kg		
1	Barely								
2	Wheat								
3	House beans								
4	Field peas								
5	Lentils								
6	Sorgum								
7	Maize								
8	Teff								
9	Lentils								
10	Others								

3.2 How do you feel the trend of land productivity during the last 10 years ?

1. Increasing 2. Decreasing 3. No change 4. Do not know

3.3 If decreasing ,why? _____

No.	Reason	Yes=1 No=2	Seriousness of the problem 1- very serious 2. Serious 3. Not very serious
1	Land shortage		
2	Loss of soil fertility		
3	Inadequate extension service		
4	Drought		
5	Frost		
6	Crop disease or pest		
7	Lack of labor or ox		

4. **Livestock Productivity**

4.1 Please tell me the type and number of livestock you currently owned as well as the number of livestock bought, sold and the amount of income obtained from the sale of livestock and for what purpose the money was used during the last 12 months?

No.	Type of livestock	Number currently owned	Bought during the last 12 month		Sold during the last 12 months		Use of income obtained from sale of livestock
			Number	Birr	Number	Birr	
1.	Cow						
2	Ox						
3	Bull						
4	Heifer						
5	Calf						
6	Horse						
7	Donkey						
8	Mule						
9	Sheep						
10	Goat						
11	Bee hive						
12	Chicken						
13	Others (specify)						
							1.For purchasing food 2. For saving 3.For house construction 4. To cloth 5. To play tax and loan 6. To buy seed 7.To cover school feel/cost

							8.To buy consumable items 9. To rum petty trade 10. Others (specify)

.2 Would you tell me the amount of income you obtained from the sale of animal by products during the last 12 months [if any] ?

No.	By product type	Estimated amount of income
1.	Milk	
2.	Egg	
3.	Butter	
4.	Skin hides	
5.	Honey	
6	Others	

4.3 How do you plough your land?

1. Using my own oxen
2. With my relatives support
3. In exchange of labor
4. Digging using hoe
5. Other (specify) _____

5. Involvement in non-farm economic activities

5.1 Did you or any family member participated in non-farm activities during the last five years?

5.2. If yes, could you tell me the type of activity, who participated, the amount of income and its use during the last 12 months?

No	Type of activity	Participants	For how long you stayed	Reason of participation	Frequency of participation	Income obtained (birr)		Use of the money
						Per month	Per year	
1.	Trading in grains and pulses							
2.	Trading in livestock							
3.	Selling of beverage							
4.	Selling of food							
5.	Trading in chickens							
6.	Trading of honey							
7.	Trading of butter							
8.	Weaving							
9.	Spinning							
10.	Pottery							
11.	Blacksmith							
12.	Carpentry							
13.	Tailoring							
14.	Daily /wage labor							
15.	Food /cash for work							
16.	Share cropping out of land							
17.	Renting out land							
18.	Renting out animals							
19.	Grain mill							
20.	Trading in vegetables							
21.	Sale of firewood							
22.	Sale of straw							
23.	Sale of pole/ trees							
24.	Petty trade							
25.	Others (specify)	1. Father 2. Mother 3. Son 4.Daugter 5. Grand son 6. Grand daughter 7. Nephews 8. Cousin 9. Others (specify)		1. Throughout the year 2. Belg season 3. Meher season 4. Slack season 5. Others (specify)	1. Daily 2. Weekly 3. Forth night 4. Monthly 5. Others (specify)			1. To purchase found for consumption 2. saving 3. house construction 4. to buy clothes 5. to pay tax or loan 6. to buy sead 7. to cover school and medical fees 8. To buy consumable items 9. to run petty trade 10. to buy animals for fattcning 11. To buy animals for breeding

5.3 Perception of people towards non-farm activities

5.3.1 In which type of livelihood strategy you are more interested to involve in the future:

1. Agricultural 2. Non- agricultural 3. In both 4. None

5.3.2 Why? _____

5.3.3. What do you think the advantage of participating in non-farm activities besides agriculture?

1. It helps households not to sell crops
2. It helps households not to sell livestock
3. It is a source of employment
4. Others (specify)

5.3.4 What do you think the constraints to expand non-farm income activities ?

1. Lack of skill and knowledge
2. Lack of skill and knowledge
3. Lack of market
4. Lack of start up capital
5. Lack of raw materials and tools
6. Lack of respect for some activities
7. Others (specify)

6. Remittance /migration/ as a source of livelihood source

6.1 Is /are there family members or relatives who migrated to other areas and send money back to you or any other organization that sends money to you currently ?

1. Yes 2. No

6.2 If yes, _____

No	Who sends money	Reason for migration	Person's age and educational status at the time of migration		Amount of money /in kind and sent back during the last 12 months		Frequency of money send	Use of money
			Age	Edun. Sta.	Money/cash	Kind		
	1. Father 2. Mother 3. Son 4. Daughter 5. Nephew 6. Cousin 7. Grand son 8. Grand daughter 9.Organization 10. Others (specify)	1. For education 2. In search of job 3.Relatives support 4. Other (specify)						1. To purchase food for consumption 2. Saving 3. House construction 4. To buy clothes. 5. To pay tax and loan 6.To buy seed and other agricultural-inputs 7. To cover school and medial fee 8 To buy coffee, sugar, salt etc 9 To run petty trade 10 To buy livestock for fattening 11. To buy livestock for rearing 12.For Equib 13. Others (specify)

7.1 Now I would like to ask you about the market place you use, distance from your residence

No.	Market name	Market place	Item		Distance from residence			Visit frequency	Type of transportation used	Prices at market place
					Km	On foot walk				
			Purchased	Sold		Minute	Hour			
1		Within the kebele								
2		Outside the kebele, but within the woreda								
3		Out side the woreda but within the zone								
4		Other (specify)								
	1. Keyit 2.Debrebirhan 3. Irobgebeya 4. Angober 5. Gudoberet 6. Others[specify							1. Daily 2. Weekly 3.Fortnight 4. Monthly 5. Others	1. Pack animal 2. Man power 3. Public transport 4. Others[specify]	1. Excellent 2. Very good 3. Good 4. Satisfactory 5. Bad 6. Others (specify)

Are you a member of an equib association in your locality?

1. Yes 2. No

If Yes,

No. of equibs you participated in	Frequency of contribution	Amount of money payed	Use of the money you received

10. Assessing family wellbeing

10.1 Food security condition

10.1.1 How many times you and your family member eat per day?

1. Once 3. Three times 5. Sometimes we dot get one meal per day
2. Twice 4. Four times 6. Others (specify)

10.2 How do you get the food used for household consumption?

1. Purchased from market 2. From own production
3. Both from market and own production 4. Others(specify)

10.3 Is there adequate food for your family throughout the year?

1. Yes 2. No

10.4 Do you borrowed grain or food from your relatives during the east 12 months

1. Yes 2. No

10.5 How do you prioritize your annual income in an ascending order?

1. For food
2. Saving
3. To run petty trade
4. To cover school and medical cost
5. To pay tax or loan
6. To buy household assets
7. To buy clothes
8. To buy seed
9. Others (specify)

Prioritization	
1st	
2nd	
3rd	
4th	
5th	
6th	
7th	
8th	
9th	

10.6 What takes the lion share from your annual income?

1. Income obtained from farm activities
2. Income obtained from non-farm activities
3. Both have equal share
4. Others (specify)

Housing condition

10.7 The house you live in is

1. Your own
2. Relative's house
3. Rent house
4. Others (specify)

10.8 The house is made of

1. Corrugated iron
2. Hut/grass thatched /
3. Both types
4. Others (specify)

10.9 Which type of household assets do you own?

1. Radio 2. Bed and blanket 3. Table and chair 4.Others[specify]_

10.10 Are there children who are above the age of 6, yet not go to school?

1. Yes 2. No

10.11 If yes, why? _____

1. School too far
2. Children are needed for agricultural work
3. Unable to cover school cost
4. Disability
5. Others(specify)

Declaration

This thesis is my original work and has not been presented for a degree in any other university, and that all sources of materials used for the thesis have been duly acknowledged.

Declared by:

GAshaw Abuhay

Candidate

July , 2007

Confirmed by:

Workneh Negatu

Advisor

July , 2007