ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

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MARKET ACCESS AND LIVELIHOOD DIVERSIFICATION IN RURAL AREAS: A CASE STUDY IN KEWET WOREDA, NORTH SHOA ZONE, ETHIOPIA

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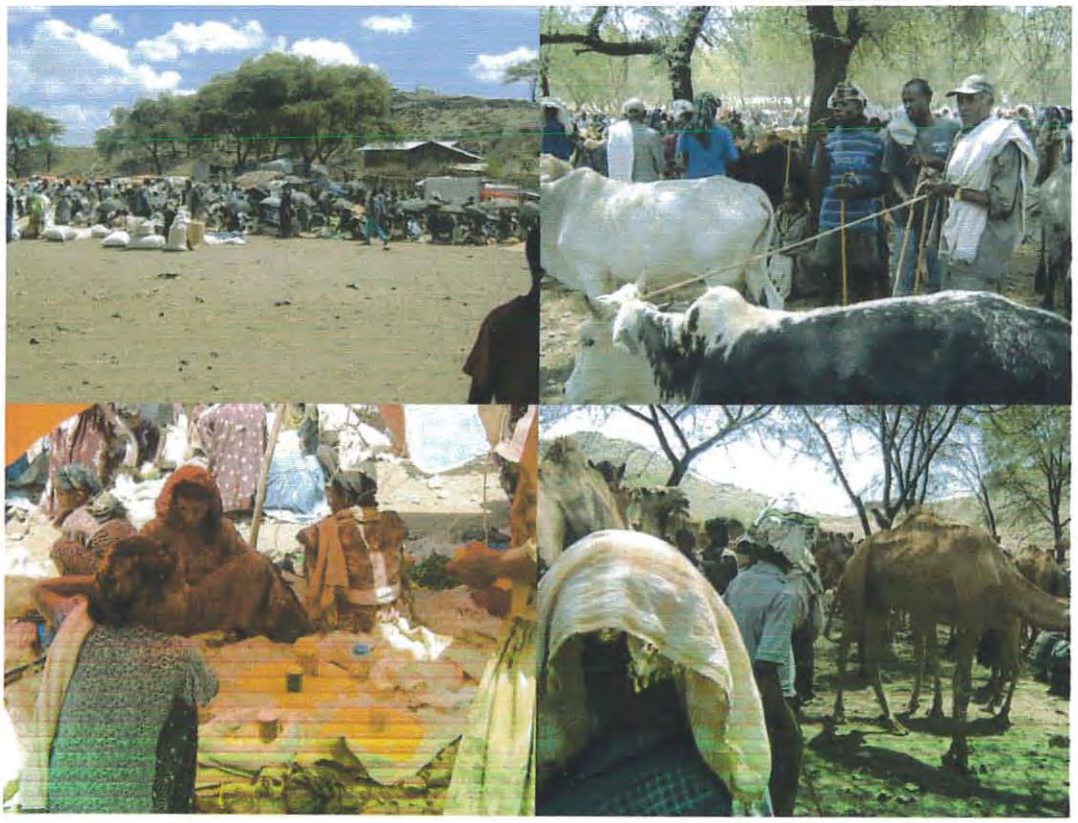

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Title

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By

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DEVELOPMENT STUDIES

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Abbreviations

ANRS: Amhara National Regional State

CSA: Central Statistical Authority

DFID: Department for International Development

EEA: Ethiopian Economics Associations

FDRE: Federal Democratic Republic of Ethiopia

GDP: Gross Domestic Product

IDS: International Development Studies

IFAD: International Fund for Agricultural Development

ILRI: International Livestock Research Institute

MOFED: Ministry of Finance and Economic Development

RNFE: Rural Non Farm Economy

SIDA: Sweden International Development Agency

Abstract

The aim of this study was to examine the relation between markets, market access and livelihood diversification in rural areas in three selected kebeles of Kewet *Woreda* in North Shewa. The study findings were drawn from data generated through a blend of qualitative and quantitative methods. Logit regression model was used to identify the determinants of market access in rural areas for both rural and town markets. To determine market access, frequency of visiting market places was used as a proxy measure. One way of ANOVA is also used to see whether there is significant difference on non farm income between market accessible and inaccessible households.

The findings show that rural farm households do not have access to formal market information about crop and livestock products; they rather depend on actual market day information from traders. The findings further show that households face different types of constraints to access markets depending on their locations, distance, availability of infrastructures and types of crop production. Mainly physical accesses to markets i.e. distance and lacks of roads were found to be the main constraints of rural households to access market centers.

In addition, the finding of logit regression suggests that market access is negatively and significantly affected by distance. An increase in market distance by 30 minutes is expected to decrease rural market access by 73%. On the other hand, information access, family size, educational status of household head and farm size were found to be positively related to market access.

I also found that availability of market centers and market access determines the livelihood diversification of rural farm households. Moreover, it is not only the availability of markets but also the size of the market that determines the level of livelihood diversification in rural areas. Farm households who are living around large rural market centers are able to diversify their sources of incomes than households who live around small rural market centers.

Similarly, the numbers of non-farm economic activities in which rural households participate depend on access to markets and the size of the markets itself. Households in remote areas who lack markets or face serious difficulties in accessing their nearest markets were found to be the least diversifier both in terms of the proportion of income from non-farm sources and number of livelihood activities in which they were engaged. The result of one way ANOVA analysis reported that there is a significant relation between market access and engagement in non-farm economic activities.

Chapter One

Introduction

1.1 Background

Globally 1.2 billion people are in extreme consumption poverty, 75% of the poor work and live in rural areas; and more than half of them are expected to be in extreme consumption poverty in 2025 (IFAD, 2001). Agriculture is a source of livelihoods for an estimated 86% of the rural People. Even if large decline in the number of rural poor reported (from 1,036 million in 1993 to 883 million in 2003), this has been confined to East Asia and the Pacific. In South Asia and Sub-Saharan Africa, the number of rural poor has continued to rise and will likely exceed the number of urban poor until 2040 (World Bank, 2008). In 2002, the proportions of rural and urban poor were 29% and 13% respectively (ibid).

Ethiopia is one of the developing countries and the second most populous nation in sub-Saharan Africa, next to Nigeria, not only on its size of the population but it is also growing relatively at a rapid rate, 2.6 per year (FDRE, 2008). The rapid population growth rate of the country is highly associated with the growth rate of the working age group. The country's economy is mainly based on agriculture, which accounts for 50% of GDP, employing 85% of its labour and 90 % of total foreign exchange (MOFED, 2002). The sector value added per capita has been declining at the rate of 0.8% per annum during the eight years ending 1999/00.

In the country, poverty is still a rural phenomenon. Poverty incidence has been much higher in rural areas than urban areas; poverty head count index was 45.4% and 36.9% in rural and urban areas respectively (MOFED, 2002). Even if there is an improvement in the depth and severity of rural and national poverty in 1999/00 compared to 1995/96, poverty incidence has not improved much between the two survey years. The proportion of people who are absolutely poor was 37% in urban areas and 45% in rural areas indicating that rural poverty is higher than urban poverty (MOFED, 2002).

In Ethiopia the sector level of performance is likely attributed to the uneven distribution (in some cases undesirable) of rainfall across the country (MOFED, 2002). For many rural households in less developing countries, agriculture on its own does not provide a sufficient means of survival. As a result, most rural households depend on many diverse portfolios of activities and social support capabilities to maintain or improve their ability to make a living (Ellis, 2000 and Carswell, 2000). Ad de veld (2004) also confirmed that many rural households have set up other activities on the side of basic crop and animal production which helps them to achieve a considerable higher standard of living.

It is widely agreed that a capability to diversify is beneficial for households at or below the poverty line (Barrett et al, 2001; Ellis, 1999) and diversification is a norm. In order to pursue with improved and sustainable livelihoods, rural households take up diverse income generating activities. Studies show that 30% to 50% of rural household income in sub-Saharan Africa is typically derived from non-farm income sources. In some regions like southern Africa it reaches up to 80% to 90% (Ellis, 2000). In Sub-Saharan Africa reliance on agriculture tends to diminish continuously as income level rises, i.e. the more diverse the income portfolio the better off is the rural household (Ellis, 1999).

Thus, many rural farm households adopt farm, off-farm, non-farm, and migration related activities for their means of survival. One of the different factors of non-farm activities which can facilitate or inhibit the process of diversification is market access (Carswell, 2000). Supporting the proposition, ILRI (2002) confirmed that without integrating farmers in to the market, sustained growth in agriculture sector would not be realized. The discussion paper of IFAD (2003) further confirmed that one reason that rural people are not able to improve their standard of living is that they face serious difficulties in accessing markets.

1.2 Statement of the Problem

Agriculture can contribute to development as an economic activity, as a livelihood, and as a provider of environmental services, make the sector a unique instrument for development (World Bank, 2008). But the use of low level of improved and modern agricultural inputs such as fertilizer, improved seeds, pesticides and herbicides, traditional farm implements and tools, post harvest technologies and inadequate extension service in general hamper the growth of agricultural production in general and food production in particular. In addition, the availability of farm land is continuously decreasing in the face of high population growth in the country.

The high population pressure in the rural areas leads to high land fragmentation which again leads to the shortage of cultivable land. Therefore, agriculture and its advancement alone are not enough to absorb new rural workers and unable to provide a sufficient means of survival in rural areas. These call for the importance of the rural non-farm economy to be the key sources of income diversification (World Bank, 2008; Ellis, 1999). The current population growth rate of 2.6% per year (FDRE, 2008) and limits of area of expansion strongly imply for the need of livelihood diversifications in rural areas. The report of the World Bank (2008) which states that rural areas in developing countries face a formidable employment challenge is one indicator of the incapability of the agriculture sector alone to absorb the rural labor force.

Given the importance of livelihood diversification for rural households, market and market accessibility of households can facilitate or inhibit the livelihood activities of rural households. Some research also confirmed that, the livelihoods of most poor people are directly dependent on their involvement in a range of markets activities either as private agents or as employees and are indirectly dependent on the wider economy for the demand and supply of goods and services (Dorward et al, 2002). In addition historical and major current poverty reduction processes have depended on equitable private sector economic growths which again highly depend on market or market accessibility of households. Moreover, the poor themselves identify the critical importance of market and market access for improving their livelihoods (IFAD, 2001).

Despite the greater contribution of market for livelihood diversification in rural areas, studies conducted in relation to market, market access and livelihood diversification are none or inadequate, if any. But if the roles of markets and market relationships are not properly addressed in livelihoods analysis and action, then it can lead to failure to identify and act on (a) livelihood opportunities and constraints arising from critical market processes and (b) institutional issues that are important for pro-poor market development (Dorward et al, 2002). In general there is lack of emphasis on markets, market access and their roles in livelihood development and poverty reduction. Dorward et al (2002) further confirmed that, the role of market and market relationships with livelihood system are intimately related to macro- and micro- processes of change in national and local economies. These clearly indicate not only the critical importance of market and market access for livelihood diversification but also show the failure of livelihood strategies unless markets are incorporated in the analysis of livelihood strategies for rural households.

Studies conducted in relation to market, however, were not focusing on the importance of market or market access for livelihood diversification rather they were either focusing on the commercialization of crops (Workneh and Roth, 2002) or livestock (ILRI, 2007). Other studies conducted in markets were focusing on the relation between market linkages and food insecurity (Gary et al, 1999). Thus, the role of market or market access for livelihood diversification for mixed agricultural producers in Ethiopia has not been given due attention by many research works. As a result there is knowledge gap on contribution of market for livelihood diversification for rural households. And lack of sufficient research work results in lack of adequate information and better understanding of the linkages between market access and livelihood diversification. This lack of adequate information and knowledge affects the development of appropriate development policies, strategies and programs that could address the existing problems of livelihood diversification in the rural areas in general and in the study *Woreda* in particular.

In addition to the critical importance of market or market access for livelihood diversification, the *Woreda* is serving as a linkage for low land pastoral areas (Afar) and highland crop producers. This makes many of the market places in the *Woreda* strategically important places and significant component for the people of the *Woreda* in general and farmers and pastoralists

in particular. In general, the role of market for livelihood diversification and the strategic location of the *Woreda* urge researchers to investigate and document the marketing condition and market accessibility of households to these strategic markets.

Taking into account the existing knowledge gap and inadequate information on the contribution of market access for livelihood diversification in the rural areas, this study is carried out to fill the knowledge gap and provide adequate information through exploring the contribution of market and market access for livelihood diversification in the country in general and in the study *Woreda* in particular.

1.3 Research Objectives

1.3.1 General Objective

The general objective of the study is to examine market situation and the role of market access in the livelihood diversification of rural areas.

1.3.2 Specific Objectives

The specific objectives of the study are to:

I. assess market conditions and marketing practices in the study area
II. identify the determinants and constraints of market access by rural households
III. examine livelihood diversification in relation to market and market access of rural households
IV. draw lessons or ways of livelihood diversification through market access in rural areas

1.4 Significance of the Study

The role of market access for livelihood diversification in rural areas is not an adequate researched component of the rural economy. Even if some researches have been conducted in the country with relation to market, these researches were focusing on commercialization of crops and livestock or in relation to food security.

This Study would contribute towards a wider and more comprehensive understanding of the relationships between markets, market access and livelihood diversification in rural part of the country by placing particular emphasis on household through a case study in Kewet *Woreda*, North Shewa zone of ANRS. Better understanding of the above is in turn expected to contribute to the design and implementation of policies and instruments on market development and its linkages with livelihood development. Therefore, the study aims to contribute knowledge for policy makers and for other studies in the study area or the same type of studies in other places.

1.5. Limitations of the Study

The study focuses on the significance of market and market access for livelihood diversification from static point of view. The relation between market and market access for livelihood diversification from dynamics point of view could not be addressed here due to the need for repeated observation over long period.

The other limitation is the study focuses only on one *Woreda*. Within in the *Woreda* only three market centers were selected for study while there are 12 market centers in the study *Woreda*. In addition, having relatively small sample size is the other limitation of the study.

Although the technique of triangulation was applied to the extent possible, the fact that the survey questions are predetermined in such a way that variables can be easily quantified and manipulated statistically also sets a limit to the capture of the complexity of the issues raised in the given local context qualitatively.

1.6. Structure of the Thesis

The remainder of the thesis is organized in to six chapters. Chapter two reviews previous research works on market, market access and livelihood diversification in Ethiopia and other developing countries. Chapter three describes the research methods, techniques, data collection method and method of data analysis.

Chapter four provides basic description of the study *Woreda* which mainly deals with demographic and socio-economic characteristics of the *Woreda*. In addition the chapter deals with the characteristics of sample households.

Chapter five deals with the markets, marketing conditions and market accessibility of rural farm households in the study Woreda. It is in this chapter that the determinants of market access with Logit model estimation are identified.

Chapter six examines the different livelihood activities in which rural farm households in the study Woreda are engaged in. Households activities like on farm, off farm and non-farm activities are dealt widely. The significance of market access has been analyzed in relation to off and non farm incomes.

Chapter seven deals with the results obtained from the various components of the study, draws conclusion about processes of diversification, and identifies some implications for policy and research

Chapter two

Literature Review

2.1. Introduction

Diversification of income sources, assets, and occupations is the norm for individuals or households in different economies, for different reasons (Lemi, 2006). Rural households engaged in different livelihood activities, in addition to their main means of subsistence, agriculture. In Ethiopia, the significance and importance of livelihood activities for rural households are being studied, particularly in recent years (Tegegne, 2000; Mulat, 2001; Lemi, 2006 and Berhanu et al, 2008). For instance research conducted by Lemi (2006) indicates that participation in non-farm activities has poverty reduction effects for households. Different studies conducted in the country have identified that livelihood diversification is determined by different livelihood assets, demographic characteristics and other institutional and socio-economic condition of that particular area of study (Tegegne, 2000; Berhanu et al, 2008; Carswell, 2000).

The benefits of livelihoods approaches are widely recognized, for instance this includes, its emphasis on the importance of people-centered change, holistic approach, and people's access to different assets, poor people's vulnerability, sustainability, change, and the multi-faceted nature of livelihoods. What I argue in this paper, however, is an important gap in the conceptualization and application of 'livelihood approaches', the gap is lack of emphasis on markets, market access and their roles in livelihood diversification for rural households.

The study of market and market access for livelihood diversification become important because studies conducted so far in Ethiopia do not emphasize the significance of markets or market access for rural livelihood diversification. Even if there were researches on markets, they were either focusing on the role of markets towards commercialization (both crop and livestock) or in relation to food security. Thus, there is clearly observed gap on the significance of markets and market access for livelihood diversification of rural households. But if the roles of markets and market access are not properly addressed in livelihoods analysis and action, then it leads to failure to identify many aspects of livelihoods clearly.

2.2. Market and Market Access

The concept of market has been given different definitions by different scholars at different times. Some group of people considers market as a place such as a village corner where buyers and sellers meet for an exchange. They consider marketing simply as a process of exchange between buyers and sellers (Ad de veld, 2004). Others consider market as the total supply and demand for a particular product.

IFAD (2003: 5) define market as follows

> *"Markets are where, as producers, they buy their inputs and sell their products; and where, as consumers, they spend their income from the sale of crops or from their non-agricultural activities, to buy their food requirements and other consumption goods."*

Ad de veld (2004:10) define market as

> *"The market is where producers try to sell their products for the best possible price. The market can be the actual marketplace, but can also represent the total supply and demand for a particular product."*

Access is defined by Ellis (2000:9) as "the ability to participate in (which again determine by the rule and social norms), and derive benefits from, social and public services provided by the state such as education, health services, roads, water supply and so on." Accordingly, market access can be defined as the ability of individuals or households to participate in market and derive benefits from the market. Yet participating in the market is determined by the availability of different infrastructures and services and other rule and social norms individual faces.

In the above definitions, the interaction of farmers with market is an important aspect of the livelihood strategy of rural households, rich or poor alike. The rural communities need market not only just for their agricultural products but also for inputs, asset, technology, consumer good, credit and labor (IFAD, 2001) and for overall development and poverty reduction (Dorward et al, 2002).

Rural markets are characterized as inequitable, frequently uncompetitive, and rarely to the advantage of the small producers (IFAD, 2001). When markets operate in such conditions, it doesn't come up with the desirable outputs because the way markets function will determine the rate and pattern of growth and, consequently, the speed and extent of poverty reduction (DFID, 2005). Well-functioning markets are linkages and important in generating growth and expanding opportunities for poor people. To make market work better for the poor, particularly for rural households, they must provide opportunity to build and acquire assets, and help to reduce vulnerability. To this end, market must be more accessible to the poor (ibid).

In addition to markets' obvious importance like for sale of agricultural products, inputs, assets, technology, consumer good, credit and labor, they have paramount significance in livelihood strategies of rural households. Dorward et al (2002) asserted the importance of market and the private sector for pro-poor livelihood development and poverty reduction. This assertion follows from four observations: first that the livelihoods of most poor people are directly dependent on their involvement in a range of markets as private agents or as employees (and are indirectly dependent on the wider economy for the demand and supply of goods and services); second that major current and historical poverty reduction processes have depended on equitable private sector economic growth; third that poor people themselves often identify problems with markets as critical to their livelihoods (but these problems may concern both the absence of markets and the effects of markets); and fourth that in support of such growth, markets can provide a highly efficient mechanism for exchange, coordination and allocation of many resources, goods and services, but they often fail.

The findings of Abdulai et al (2001) stated that households in remote areas are less likely to participate in non-farm activities than their counter parts closer to local markets. Similarly, the findings of Tegegne (2000) indicated that villages near to urban centers have more number of households earning their income from non-farm sources and engaging in a trade activity. SIDA (2004) also reported that another dimension in which the rural poor can engaged in i.e. participation in product and service outside agriculture is market. These strengthen the proposition which states that markets and market access are important for livelihood strategies of rural households.

2.3. Challenges of Market Access

The term and conditions in which the rural poor households enter and participate in some markets are sometimes inequitable. IFAD (2001) stated that poor households are passively involved often obliged to sell low (immediately after harvest) and buy high, with little choice of where they conduct transactions, with whom, and at what price. Currently, enhancing the ability of the rural poor to access these markets, and actively participate in them, is one of the most pressing development challenges (ILRI, 2002; IFAD, 2001).

According to IFAD (2003) discussion paper, one of the reasons that rural poor people were unable to improve their living standard is that they face serious difficulties in accessing markets. They are adversely incorporated in the market and not as free rational players as neoclassical theories would assume (DCD/DAC, 2004). In rural areas low population densities, remoteness, and high transport costs present real physical barriers in accessing markets. Many findings (ILRI, 2007; IFAD, 2001; Chowdhury, 2006) reported different constraints of rural households not to access market. These include lack of market information, lack of negotiation skill and lack of collective organization among farm households.

Very comprehensive challenges of markets access was given by IFAD (2001). The report identified three dimensions of problem of market access which includes: the physical access to markets (the distance of the poor from markets), the political aspect (their inability to influence the terms upon which they participate in the market), and the structural dimension (the lack of market intermediaries).

2.3.1. Physical Access to Markets

Distance and Roads:

According to IFAD (2001:163) farmer in Jancul, Ecuador reported that "A community without road does not have a way out." In one hand it indicates the critical importance of roads for the rural community throughout the developing countries. On the other side, it shows the distant places rural households located from the markets. Even in the area where roads are available they are impassable at certain time of the year. Areas that do not have physical access to market are

poorer than those households who have easy access to market. In areas such as Northern Angola, Northern Zambia, Southern Tanzania and Northern Mozambique, all isolated areas with weak market integration, up to 90% of the population are estimated to be chronically poor (IFAD, 2001).

Even if the size of benefits of roads is known little, transport infrastructures play a central role in rural areas development (Jacoby, 1998). Roads bring direct short term employment, generate access to markets and services, facilitate migration and exchange of information and ideas, and bring long term non-farm employment opportunities (World Bank, 2005). But in developing countries like Ethiopia, lack of road, particularly rural roads, is still the central concern. Road infrastructures are poorly developed to facilitate smallholder farmers' access to the market. According to Lirenso (2000) as quoted by Tesfaye (2003) only 20% of the country can be reached by modern transport. Usually farmers have to travel for hours and days on foot carrying their produce in their back or heads to sell on the market and to buy inputs and consumables from the market (ibid).

Study conducted in the eight pilot learning *Woredas* in Ethiopia by ILRI (2007) identified distance to market and associated transportation problem as the major market access problems in the Pilot learning *Woredas*. The study further confirmed that good road access contributes to better market access for households.

High Cost and Poor Access to Transport:

The other challenge for rural households to access market is high cost of transport. In areas where rural roads are available, households are expected to pay high cost of transport. Cost of transport cover the lion share of all marketing costs in developing countries. Eleni (2002) as quoted by Aklilu (2005) stated that cost of transport reach up to 40% of the total marketing costs. Aklilu further reported that similar findings have been obtained in Amhara region. For instance the cost of transport for grains, pepper, sesame and cotton take 42%, 58 %, 45 % and 38 % of the total marketing costs respectively.

The roads available in the rural areas are gravel and poorly maintained, this would increase the cost of transport significantly. According to Aklilu (2005) the cost on gravel roads can be twice as much as costs on good quality asphalt roads. For instance the cost of travelling a ton/km from Gonder to Metema which is a gravel road is 1. 80 Birr, and similarly the cost of travelling a ton/km from Debre Birhan to Deneba which is a gravel road is 1.11 Birr. But the cost of travelling a ton/km from Bahir Dar to Addis Ababa which is an asphalt road is only 0.35 Birr.

Communication Infrastructures:

Lack of communication infrastructures is found to be one of the physical constraints of households not to access markets. Access to communication infrastructures like telephone would help households to access information easily and that reduces transaction costs significantly and helps them to participate in factor trading and allocate their factors to maximize welfare. A study conducted in Bangladesh confirmed that in general telephone use status has a significant impact on market participation of households. Households that use a telephone are more likely to participate in the market (Chowdhury, 2005). The study has found that the use of a telephone increases farm households' factor market participation by as much as 14%.

2.3.2. Market structures

"Many of the rural markets in developing countries are characterized by extreme asymmetry of relations between, on the one hand, large numbers of small producers/consumers and, on the other, a few buyers/sellers" (IFAD, 2001:167). This may either due to the physical aspects of the rural households, may be the issue of market scale, rural communities are less populated and limited demand for production goods or little to barter (ibid).

Such inequality of market may be created through a number of factors mainly due to the remoteness of the households, and low population of densities. These situations obliged households to have limited demand for production inputs and consumption goods or have so little to sell or barter that traders do not find it worthwhile to visit such market or households in particular.

2.3.3. Market Skill, Information and Organization

Until about 1980, the challenge in most developing countries was state-led industrialization, market regulation and protection. Then after, increasingly, liberalization and globalization have changed the nature of the challenge (IFAD, 2001). The new context of market liberalization has offered new opportunities and challenges to agricultural producers, which urge for more competition and efficiency.

Liberalization of the market has considerably changed the environment in which smallholder producers operate from the one in which the production options were limited and the prices of inputs and produce were known to one which is open-ended and in which all prices can vary from day to day (IFAD, 2001). Smallholder producers are in many areas do not understand how the market works, they have little or no information on market conditions and price; they are not organized collectively, and they have no the skills and experience of negotiation (ibid). This makes rural households to find themselves at major disadvantage while participating in markets. The findings of ILRI (2007) also confirmed that livestock farmers and traders in eight pilot learning *Woredas* have none or very little access to livestock marketing information, although traders are better informed about market condition than producers.

Creating organization among farmers can give them the power they require to interact on equal terms with other actors in the market (IFAD, 2003). To this end, marketing cooperatives have been considered as an important vehicle to enable farmers to take advantage of economies of scale (IFAD, 2001).

2.3.4. Transaction Costs:

Unlike the assumptions of a perfectly competitive market; information is asymmetrical, incomplete, and costly to acquire and to use (DFID, 2005; Abdulai et al, 2001). These would make the risks and costs of participating in markets too high. Particularly the poor, rural households or specific groups such as ethnic or religious groups would be excluded from the market (DFID, 2005). These costs, distinct from physical marketing costs, are related to conducting or coordinating market transactions between actors, such as the costs of searching and screening for a trading partner, the costs of obtaining information on prices, qualities and

quantities of goods, the costs of negotiating a contract, the costs of monitoring contract performance, and the costs of enforcing contracts (Eleni et al, 2005 and DFID, 2005). The enormous gap between farm gates prices and consumer prices is the indication of market inefficiency and high transaction costs (Tesfaye, 2003). Studies (Chowdhury, 2006 and Abdulai et al, 2001) show that one reason that households may not participate in the market is the high cost of transactions i.e. the gain from factor trade is outweighed by high search cost.

In Ethiopia, the high cost of transactions including little market information, no product standard and little market coordination has found to be the primary reason for the poor performance of the market since the reform of the market, early 1990s (Eleni, 2005).

2.4. Types of Markets[1]

Mallorie and Ashraf (undated) identified the following five types of markets.

A. Primary rural markets

This market is composed of farmers and small retail traders, and has only a few permanent shops. This market normally operates once or twice in a week. The market usually unpaved and exposed to the weather, resulting in high produce losses. Facilities are very limited; often there are no market shades and no provision of water supply or latrines. Some are on very constricted sites, but their proximity to local populations makes them an important outlet for farmers. Ray (nd) characterizes such markets as they are commonly organized at a central place in a village or district centre or beside a village's access road. Further he explained that commissioned agents collect output from this village level market and sell to district level.

B. Rural assembly markets

Traders and commissioned agents from distant places gather in these markets with a view to collecting marketable surplus which is bought in by village level traders. A significant number of permanent shops and processors are found in these markets. The presence of commission agents, banks and a good transport system make this market more useful for traders. This market operates on two or more working days of the week – and they may operate daily for retail sales,

[1] The last two types of markets (D&E) are not discussed in the analysis part but included here in the literature.

and periodically for assembly. Many concentrate on grain marketing, or specialize in other products such as hides and skins or fish. Ray (undated) characterizes such markets as large rural markets where greater quantities of produce are traded, either by the producers themselves or by traders.

C. Secondary markets

This market is large and includes traders who operate nationally. Commissioned agents, wholesalers, processors, exporters are all active in this market. Normally, such markets are easily accessible by various means of transport. With large numbers of permanent shops and service institutions, this market operates on all working days.

D. Urban wholesale markets

These are specialized markets operating in a particular line of products (e.g. rice, vegetable and fruits). These markets bridge the gap between distant wholesalers and large number of retailers. Commissioned agents provide services in these markets.

E. Urban retail markets

In these markets, consumers collect their necessary items. The retailers present variety of items in these markets to meet the daily necessities of the consumers.

2.5. Livelihood Diversification

Livelihood diversification includes both on and off farm activities in which individuals or households are engaged in. Various definitions of diversification are offered in the literature. Diversity refers to the existence, at a point in time, of many different income sources, thus also typically requiring diverse social relation to underpin them (Ellis, 2000).

Diversification on the other hand interprets the creation of diversity as a going social and economic process, reflecting factors of both pressure and opportunity that cause families to adopt increasingly intricate and diverse livelihood strategies (ibid). "It can also refer to an increasing multiplicity of activities (regardless of the sector), or it can refer to a shift away from traditional rural sectors such as agriculture to non-traditional activities in either rural or urban space- i.e. sectoral change" (Start et al, 2004 as cited by Fikru, 2008:22). On the other hand, diversification

refers here to the continual adaptive process whereby households add new activities, maintain existing ones and drop others, thereby maintaining diverse and constantly changing livelihood portfolios (Ellis et al, nd).

Hussein and Nelson (1998:3) define livelihood diversification as

> *"Livelihood diversification includes both on- and off-farm activities which are undertaken to generate income additional to that from the main household agricultural activities, via the production of other agricultural and non-agricultural goods and services, the sale of waged labour, or self-employment in small firms, and other strategies undertaken to spread risk"*

Ellis (2000:15) define rural livelihood diversification as

> *"the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living."*

In conclusion, diversification of income sources has been put forward as one of the strategies households employ to minimize household income variability and to ensure a minimum level of income (Alderman and Paxson, 1992 as cited by Abdulai et al., 2001). This strengthens the fact that diversification takes place in order to overcome risk and seasonality in natural resource-based livelihoods, but it also reflects the failure of agriculture to deliver improving livelihoods in the post-liberalization era (Ellis, et al, nd). Livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, while not undermining the resources or ecosystems on which it depends for existence (Chamber and Conway as cited by Scoones, 1998). Recognizing the significances of non-farm economic activities in rural area, Tegegne (2000) reported that a peasant model which views peasant livelihood to be exclusively dependent on land is not adequate to describe rural economy.

Despite the persistent image of Africa as a continent of "subsistence farmers," roughly 50% of rural household incomes in Africa are generated from engagement in non-farm activities and transfers from urban areas or abroad, remittances and pension payments being the chief categories of such transfers (Ellis et al, nd). In south Asia, on average, roughly 60% of rural household income comes from non-farm sources (Ellis as cited DCD/DAC, 2004). In addition

occupational diversification and the proportion of non-farm income in household income are increasing (DCD/DAC, 2004). In general, diversification patterns vary substantially by country and regions within countries, making generalizations difficult and not particularly helpful for designing interventions (ibid).

According to Barrett et al (2001) non-farm activity is typically positively correlated with income and wealth (in the form of land and livestock) in rural Africa, and thus seems to offer a pathway out of poverty if nonfarm opportunities can be seized by the rural poor. But this key finding is a double-edged sword. The positive wealth-nonfarm correlation may also suggest that those who begin poor in land and capital face an uphill battle to overcome entry barriers and steep investment requirements to participation in nonfarm activities capable of lifting them from poverty.

2.6. Motives and Determinants of Livelihood Diversification

Scholars seem to agree on the significance and importance of non-farm activities in rural Africa, although, there seems to be no consensus regarding the most important factors that drive participation and intensity of non-farm activities (Lemi, 2006).

Diversification of income sources, assets, and occupations is a norm for individuals and households (Barrett et al, 2001 and Lemi, 2006). It is uncommon to observe people who collect all their income from any one source, hold all their wealth in the form of any single asset, or use their assets in just one activity. Livelihood diversification is pursued for a mixture of motivations, and these vary according to context: from a desire to accumulate to invest, to a need to spread risk or maintain incomes, to a requirement to adapt to survive in eroding circumstances, or some combination of these (Hussein et al, 1999:22).

The other proposition that individuals or households pursue diversification as a livelihood strategy is either for necessity or choice (Ellis, 2000). Necessity refers to those households engaged in non-farm activities for survival out of need to secure basic needs during times of distress or it is an involuntary action of the individual or households during the time of distress. On the other hand, choice propositions argued that households are engaged in non-farm

economic activities for voluntary and proactive reasons. In similar notion Barrett et al (2001) stated that households engage in non-farm activities as a result of push or pull factors. Diversification for distress reason is a bad thing and it obliged households to participate in casual and low productivity activities. Lemi (2006) argued that, given the rural setting in Africa, where there are constant changes in farming income determinants, farmers switch between necessity and choice as their main determinants for participation in non-farm economic activities.

According to Ellis (2000:57), the following key factors should be taken into account as causes for diversification:

Seasonality: refers to reliance of crop and livestock production on rains, their duration, the length of the growing season, temperature variations and so on. This seasonality applies for the landless who depend on agricultural labor markets for survival and on activity in agricultural supply and output services. Seasonality may also refer fluctuations in prices as a response to changes in demand and supply conditions.

Risk management strategy: it is considered as one of the fundamental motives for livelihood diversification. It is the risk-discounted marginal returns to labour that determine the patterns of engagement in different livelihood activities of the households. The higher the risk attached to a particular activity, the more likely that the individual or households diversify the activities to ameliorate the threat to its overall welfare from failure due to concentration in that single activity.

Coping strategy: is involuntary response to disaster of unanticipated failures in major sources of survival i.e. it resembles with the arguments of necessity propositions. It is distinguished from risk management strategies by the fact that coping strategies are ex post managements while risk management strategies are ex ante.

Labour market: it offers nonfarm opportunities, other than seasonality and risk management strategies, which is differentiated by other considerations such as education, skills, location and gender. This is because work opportunities vary according to these factors. But market for agricultural wage labour in Africa is poorly developed or non-existent. Access to labour markets is particularly important for many of the poor, who are highly dependent on their labour power.

The ability of the poor to participate in labour market is subject to a number of constraints arising from remoteness; lack of access to other assets, such as education; lack of participation in institutions such as credit groups; household characteristics such as family size and composition; cultural norms; and discrimination against women or ethnic minorities (IFAD, 2001). The report further explained pluralistic ways by which labour market can be accessed. These include improving rural schools and increase labour mobility through improved road, transport and information infrastructure, and reducing the transaction costs of seeking employment.

Lemi (2006) concluded that lack of functioning markets coupled with inter-temporal decision-making, and survival decision under stress call for the aforementioned factors, which often are not included in the standard household models. In addition to these key factors, other factors outside of the control of households, including regional and local features, environmental factors, social and governmental factors, should also be considered in addressing the question of rural households to understand their decision process. As a conclusion Hussein et al (1999) stated that whether push or pull factor to diversify the character of livelihood diversification is dependent primarily upon the context within which it is occurring - this includes the differential access to diversification activities and the distribution of the benefits of diversification.

2.7. Major Drivers of Rural Non-Farm Economic Activity

Even if agriculture, for most households, is a key element of their strategy, rural households do not specialize in crop production, livestock rearing, fishing, or forest management to the exclusion of other sources of income generating activities. Rather they combine a range of on farm, off farm, non-farm and migration related activities to construct a diverse portfolio of activities (Ellis, 2000; OECD, 2006 and IFAD, 2003). Different studies indicate different sources as major driver of rural non-farm economic activity. In some location the growth of agriculture is associated with agro-processing and equipment repair is found to be the major driver of rural non-farm economic activity (Ellis, 1999; DCD/DAC, 2004). This has reinforced the view that investment in agriculture is the main route to poverty reduction. However, this logic has been refuted through some studies conducted on diversification in South Africa and Latin America where other sector such as tourism has been driver of RNFE activity (DCD/DAC, 2004). Moreover, the findings of Foster and Rosenzweig (2003) as cited by DCD/DAC (2004)

indicate that non farm sector growth has not been dependent on the expansion of local agricultural productivity.

In recent years, however, the importance of urbanization has been pronounced as an important driver of diversification by offering new opportunities (DCD/DAC, 2004). Tacoli as cited by DCD/DAC (2004) stated that, the flow of money, goods and services between rural and urban areas can create a virtuous circle of local economic development by increasing demand for local agricultural produce, stimulating the non-farm economy, and absorbing surplus Labor. But this depends, the report further enlightened, on three pre-requisite which includes access to infrastructure, market and market information.

2.8. Market and Livelihood Diversification in Ethiopia

The rural development strategy of the country will be broadened beyond the initial focus on agricultural intensification, with recognition of the need to stimulate income diversification and rural-urban linkages, as elaborated by PASDEP. Overall, the PASDEP emphasizes the importance of private initiative of rural households, income diversification and commercialization of agriculture (MOFED, 2006).

There is a growing literature dealing with rural non-farm livelihood diversification in Ethiopia. But the available studies are either regional or focus on drought periods (Woldenhanna and Oskam 2001; Block and Webb 2001 as cited by Lemi, 2006). The one by Lemi (2006) however covers different regions and cropping systems of the country except pastoralist areas. The other study conducted by Berhanu et al (2008) focuses on Diversification and Livelihood Sustainability in a Semi-arid Environment. Similarly study conducted by Kejela et al (2005) deals with the prospects and challenges of livelihood diversification of pastoral communities in Ethiopia with a particular emphasis on Borena Pastoralists.

On the basis of survey data that covers six regions and fifteen survey sites which cover different ecology of the highland farming systems in the country with the exception of pastoral system, Lemi (2006) determines factors behind the dynamics of off-farm activities in Ethiopia. The data used in this study cover larger and representative samples from remote rural Ethiopia during 1994 and 1997 harvest years. Accordingly, the results of his research show that participation in off-farm activities is mainly driven by demographic factors, whereas intensity of off -farm activities is affected by not only demographic factor but also by the size of land holdings, value of livestock owned and crop production as well as cash income from crop production. In addition, he found that participation in off-farm activities has poverty reduction effects.

The study conducted by Tegegne (2000) in Kacha Bira and Damot Gale *Woredas* of southern Ethiopia investigated the influence of non-farm activity on the production decision of farmers, and identified the factors influencing non-farm activity. He used survey structured questionnaire. The study confirmed that farmers are highly involved in non-farm activities and income from non-farm sources play a major role in their livelihood. The main non-farm activities in which households engaged are trade and handicraft. The study further confirmed that education affects non-farm activities positively and significantly, while family size has no relationship. In addition, villages near to urban centers have more number of households earning non-farm income and engaging in a trade activity which requires the existence of an urban center in close proximity.

Demissie and Workneh (2004) as cited by Fikru, (2008) have used data obtained from the "Fifth Round Ethiopian Household Survey" to examine factors involved in rural household choice of livelihood diversification strategy in southern Ethiopia. Their findings indicate that asset endowment of households has a significant effect on household's choice of livelihood diversification strategy. The pattern of livelihood diversification that emerged from their study shows that livestock has an important role in diversification of livelihood into non-crop activities. Labour is also an important resource that has positive impact on diversification. Size of cultivated land, cash crop production and access to extension service are found not to encourage diversification. They are rather important factors in enhancing crop farming.

The study conducted by Berhanu et al (2008) focuses on the recently growing adoption of non-pastoral livelihood strategies among the Borana pastoralists in southern Ethiopia. They used the Cobb-Douglas model to analyze the economic rationale behind the growing pastoralist shift to cultivation and other non-pastoralist activities. The study found that the probability of choosing the activity portfolio strategy with high return non-pastoral element decreases with age as well as being female-headed. An examination of the pastoralist activity choices reveals that the younger households with literacy and the rich are more exposed to the exchange system display a more diversified income portfolio preference. The findings underscore the importance of human capital investment and related support services for improving the pastoralist capacity to manage risk through welfare-enhancing diversified income portfolio adoption.

On the basis of a study carried out in three sites in southern Ethiopia, Carswell (2002) concludes that lack of credit and lack of labour are the two key barriers to entry for diversification activities. The key policy challenge identified in the study is how to find effective ways of articulating formal credit delivery and informal systems. Other key institutions identified include markets and institutions around labour and natural resource tenures. The institution of caste, the traditional authority which it implies, kinship and social network are also deemed to have a critical role in livelihood strategies of people in the study area.

Kejela et al (2005) focuses on the prospects and challenges of livelihood diversification in Borana Pastoral communities. The study employed Participatory Rural Appraisal and household survey methods. In addition, different stakeholders' at community, district, and regional levels are consulted. The study found the significant contribution of livestock and livestock products for the household income of both pastoral and agro-pastoral communities, mainly for the rich groups of the community. Further the finding indicates the livelihood activities in which the pastoralists are diversified into crop production, petty trades, wage, remittance, firewood and charcoal production, and incense collection.

The study conducted by Gary et al (1999) focuses on the market functions and linkages as related to food security in South Wollo. The study employed different kinds of methodology to assess the market and food security linkages. Household survey (for both buyers and sellers), traders and transporters survey and urban inventories were identified to be the major data collection methods. According to the study rain and lack of infrastructure were the major problems affecting market attendance.

On the other hand findings presented on proceedings of the MoARD – IFPRI Workshop (2005) entitled Unleashing Markets for Agricultural Growth in Ethiopia emphasizes on the national and regional agricultural marketing strategy (MoARD, 2005). The paper presented by (Eleni, 2005) focuses on the issues and challenges of getting market right in Ethiopia. She identified the challenges that the Ethiopian agricultural marketing system faces despite its extensive reforms since early 1990s. Among others the high transaction costs (little market information, lack of product standards, and limited market coordination), high contract risk, personalization of trade, lack of market finance, weak private sector, thin and weakly integrated markets and risks of markets are identified to be the evidence of market failures in Ethiopia.

The study conducted by ILRI (2007) focuses the role of livestock marketing in heading towards commercialization. The study collected information through key informants, key observants, and review of secondary literature and analysis of available secondary data. The study concluded that farmers (producers) and traders face a number of problems in marketing shoats and cattle which mainly include lack of market information, distance to market places, feed shortage in market places and low price due to poor body condition. Other studies in relation to market emphasize on relation to food security (Gary et al., 1999) and commercialization of crops (Workneh and Roth, 2002). The one by Akillu (2005) focuses on the significance of market for agricultural growth.

In general, the above empirical findings were emphasizing on different socio-economic determinants of livelihood diversification in Ethiopia. These include different kinds of assets, demographic characteristics, availability of credit and on the importance of social network. Other studies conducted in relation to market are either focused on the significance of market for agricultural growth or it emphasis in relation to food security or commercialization of crops and

livestock products. None of them were focusing on the role of market and market access in the livelihood diversification of rural households. Therefore, the aim of this research is to see this clear and significant gap by emphasizing on the role of markets and market access in the livelihood diversification of rural households.

2.9. Conceptual Framework of the Study

The benefits of livelihoods thinking and approaches are widely recognized. Recently integrating market in livelihood analysis has been propounded on the basis that separates and isolated market and market access from analysis of livelihood does not bring a lasting solution for livelihood development and poverty reduction. Livelihood analysis cannot be completed unless it includes market and market access in its framework. Market and market access are very important component in the livelihood analysis framework for rural households. They are envisaged to provide services and non-agricultural employment to the rural people and stimulate the commercialization of agriculture, thus both directly and indirectly impacting the livelihood analysis of rural households.

This livelihood approach regards market access of households as fundamental component to understand the options open to engage and participate in. The market accessibility situation of households has a significant effect on households' livelihood diversification in to non and off farm activities. The roles of markets in the livelihood analysis determined by their size, accessibility, activities and service they render for households. The central point here is that markets vary by size, accessibility, and services they provide. Large and accessible market centers provide higher option for households to participate in non-farm and off-farm activities than small market centers with limited size and activities.

The decision of households to participate in different livelihood activities is conditioned by the socio-economic factor of households. Asset status of households, institutions, organizations and other social relations are critical mediating factors of livelihood strategies of households. In addition, seasonality, risk management and coping strategies and labor market situations also cause households to participate or not in different livelihood activities. More importantly,

livelihood strategies and activities are mediated by the different infrastructures and services available in the area.

Works people do in pursuit of a living are referred in this framework as livelihood 'activities'. In the context of this study, activities are actions taken by the household to produce income, such as engagements in non-farm self employment, waged-employment, and a mix of farm and non-farm engagements.

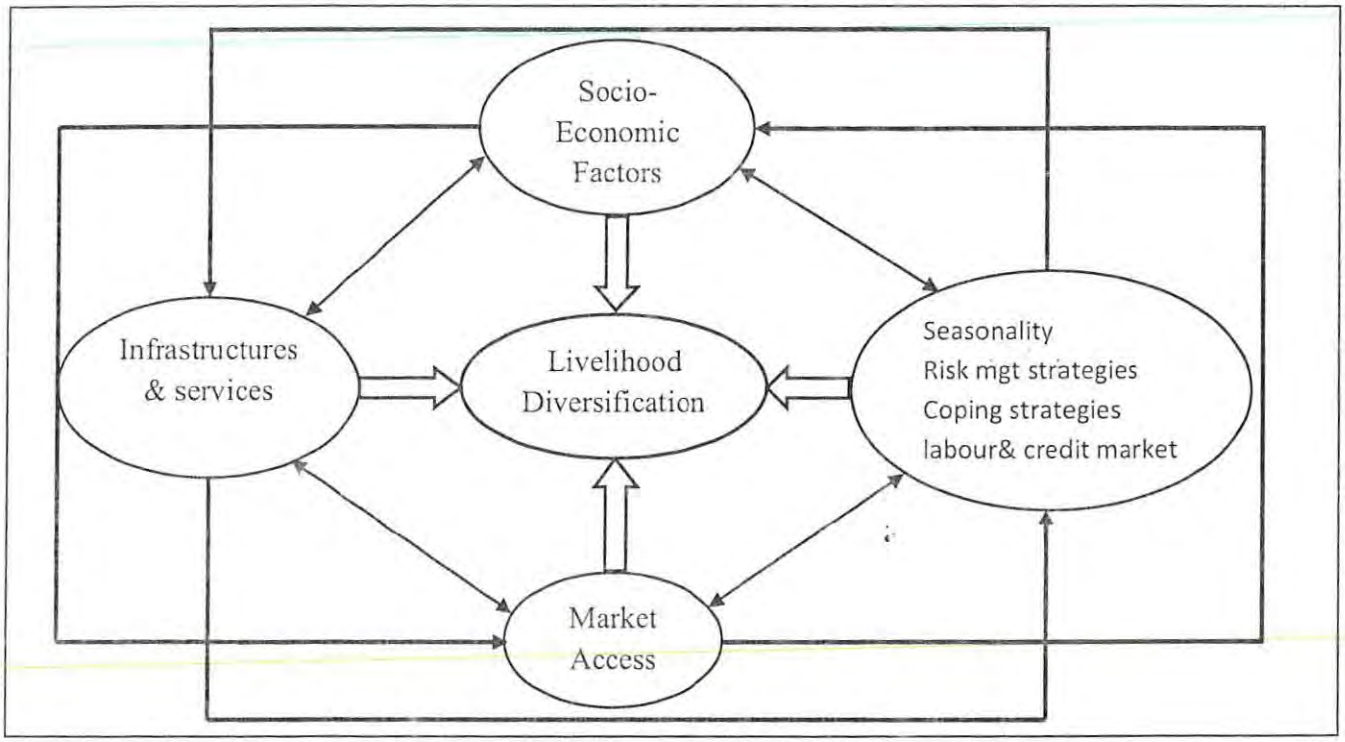

Figure1: Conceptual Framework of the study as developed by the researcher

Chapter Three

Research Methodology

This section presents the sampling techniques, data collection methods, methods of data analysis, definition of variables with underlining assumption followed by specification of the model. The first section explains sampling designs, sampling procedures and the study population, which is followed by data collection instruments and sources of data. The second section presents the overall analysis methods used for the study while the last section provides the assumption held for each of the explanatory variable.

3.1 Sampling Procedure

For this research purposive sampling, stratified sampling and simple random sampling techniques were employed for the selection of study site (*Woreda*), *Kebeles* and households with in the selected *Kebeles* respectively. At the beginning, the study site, Kewet *Woreda*, was selected purposively due to the strategic linking role for the highland crop producers and low land pastoral areas (Afar) which would show the significance of market for livelihood strategy in the study area. In addition, the familiarity of the researcher to study area also plays great role to choose the *Woreda* for the study.

In the second stage, 18 rural *Kebeles* of the *Woreda* were classified in to three strata based on their access to the town market center, Shoa Robit and rural market centers as measured by distance and size of the rural market centers. Accordingly, the first stratum includes those *Kebeles* which can easily access both the town and big rural market centers. The second stratum includes those Kebeles which can access town and small rural markets centers i.e. they have medium access to markets and the third stratum includes those *Kebeles* which are isolated and face difficulties to access both the town and rural market centers. Then three *Kebeles*, one from each stratum, were randomly selected. Abayater *Kebele* was selected from the first stratum and Yelen and Jimdere *Kebeles* from the second and third stratums respectively. Each *Kebele* is divided in to *Gots*, and then from the selected *Kebelse, Gots* were randomly selected. Accordingly, three *Gots* from Abayater *Kebele*, two each from Yelen and Jimdere were selected randomly.

After the selection of the *Kebeles* based on stratified and random sampling, simple random sampling technique were employed to select the individual households from the respective *Gots*. Consideration was given to include female headed households in the sample households, although they are few in number. In spite of the care given only 8 female headed households are selected from the entire sample in the three Kebeles.

A total of 94 sample households were selected from the three *Kebeles*. From Abayater *Kebele* a total of 44 sample households were selected randomly from three *Gots*. This is due to the large number of people residing in the *Kebele* (Table 1). In addition, in the *Kebele* there are large numbers of different economic (Non/off farm) activities than the other two *Kebeles*. Moreover, the number of *Gots* also higher in Abayater *Kebele* than the other two *Kebeles*. Therefore, the above situations make the population of the *Kebele* heterogonous and forced to take large number sample number households than the other two *Kebeles*.

Table 1: Distribution of Sample Households in the study *Woreda*

Stratums	Name of selected *Kebele*	Total population of the *Kebele*	Number of *Gots*	Selected *Gots*	Sample households
Kebeles with easy access to town/rural markets	Abayater	7182	9	Misreta	16
				Borere	15
				Tesobiye	13
Kebeles with medium access to town/rural markets	Yelen	7048	7	Arada	12
				Gudiguad Amba	15
Kebeles with difficult access to town/rural markets	Jimdere	4491	6	Kumdingay	11
				Gur	12
Total sample households					94

Source: Own field survey, 2009

The other two *Kebeles*, Yelen and Jimdere, have sample households of 27 and 23 respectively. These *Kebeles* are relatively homogenous. Jimdere *Kebele* has a total population of 4491 and their economic activity is entirely the same, farming. Households in Yelen *Kebele* are known for their cash crop production but they are not engaged in different economic activity as households in Abayater *Kebele*. Due to these factors sample households in Jimdere and Yelen *Kebeles* are relatively homogenous and smaller and accordingly small sample households were taken than Abayater *Kebele*.

3.2 Data Collection Methods

In order to meet the research objectives both primary and secondary data were collected from different sources.

A. Primary data

Household Survey:

The household survey was conducted with selected sample households in the study area at three *Kebeles* (Abayater, Yelen and Jimdere). To generate the required information at household level structured questionnaires were used. Prior to conducting the survey, the household questionnaire was pre-tested and remedial action was made accordingly and finalized. Two enumerators were trained for a day on the household questionnaire. Then the actual data collection took place.

Focus Group Discussion (FGD):

This method of data collection was arranged with the purpose of supporting the data obtained from the household survey. Two groups that consist of 7 individuals participated in the discussion. The group includes individuals from *Kebele* administration, and farmers of the *Kebeles*. Two focus group discussions were conducted in Abayater and Yelen *Kebeles* where large and small rural market centers are available respectively.

Key Informant Interview (KII):

Collecting information from different stakeholders is believed to increase the quality and reliability of data and helps to triangulate the information. Accordingly, interview with key informants from *Woreda* administration, Rural and Development and Agricultural Bureau, and development agents in respective Kebeles, traders, and elders of the study three *Kebeles* were consulted.

In depth Interview:

The households selected for the case study were those who are engaged in non-farm economic activities in the two *Kebeles*, Abayater and Yelen. Narratives and stories are compiled from selected individuals who are engaged in representatives' non-farm activities. Two individuals were investigated through discussion for specific understanding of determinants and constraints of livelihood diversification.

B. Secondary Data

An attempt was made to review the available secondary sources of information to augment primary data. Secondary data that are relevant for this research work were gathered from different sources. These include information on crop production, and livestock rearing, socio-economic, physical and demographic characteristics and market infrastructures of the study areas. The *Woreda* Finance and Economic Office and Agricultural and Rural development Office were the main source for data related to the *Woreda* socio-economic profile. In addition, different relevant published documents, statistical abstract, books, journals and thesis were used to gather relevant information.

3.3 Method of Data analysis

The process of data collection (primary and secondary) is not an end in itself and thus, the culminating activities are analysis, interpretation and presentation. Accordingly, the data collected in different ways were analyzed and interpreted in order to meet the general and specific objectives of the study. To this end, multiple methods of data analysis were used ranging from pure qualitative to quantitative methods. Narrative descriptions as qualitative method of data analysis were involved to analyze data collected through various methods.

To determine the market accessibility of households frequency of travelling to market places has been used as a proxy. There is no specific rural market access measurement. For instance, Workneh and Roth (2002) used distance to market as a proxy for market access and Chowdhury (2006) in his study on Access to a Telephone and Factor Market Participation of Rural Households in Bangladesh defines access in terms of distance from available telephone service. For the purpose of this study, however, frequencies of travelling to market places (town and rural market centers) have been selected as a proxy for market access. This is because market access is not only determined by physical distance to markets, although this is a central concern, but also determined by the availability of road, information and other social and institutional factors. These factors are better explained and incorporated by frequency of travelling to market places than by distance.

Generally, the data analysis part was mainly done by using both qualitative and quantitative data analysis technique. The method of triangulation was used to analyze the qualitative data gathered from FGD and KI interview. Descriptive statistics (Such as percentage, mean, minimum, maximum, standard deviation) were used for comparison purposes. Chi-square test was used to show the categorical association or contingency coefficient between the independent variables. Logistic regression model analysis was employed to determine the determinant of market access for rural households in the study area. In addition, One-way ANOVA was employed to see whether the non-farm income difference between market accessible and inaccessible households is significant or insignificant. Besides, SPSS 16.0 version software package was used to organize, arrange and analyze of the data.

A. Definition of variables

Dependent Variable

Market Access (MA): is a dummy dependent variable in the model assigned value of 1 for market accessible households (who visit market places once and above per week) and 0 otherwise (households who did not visit market places even once per week). To define whether the household is market accessible or not, frequency of travelling to market places per week is used as a proxy measure. Thus, if a household travels or visits to market places once or above in

a week time then that household is market accessible otherwise the household is market inaccessible.

Frequency of travelling to market places is taken as a measure to market access of the household because it integrate a number of variables that can determine market accessibility of rural households. For instance remote rural households may not visit market places either due to distance of market places or lack of road or transport. In addition, if a household has access to information and strong contact with people who are living in market places that determine whether that household to visit that market place or not in a specific market day. Overall, frequency of travelling to market places incorporates different variables which can determine the market accessibility of that specific rural household than other factor like distance.

Independent Variable: different household characteristics, infrastructures, institutional issues, resource endowment and socio-economic variables are expected to affect rural household's market access in the study area.

Distance to market places (DISTANCE): distance plays an important role in market accessibility of households. Households who walk or travel fewer hours to access market places are expected to have better market accessibility than households who walk or travel long distance to access market places.

Road/transport Access (ROADACS): availability of transport or road and market access are expected to show positive relation. Households who have access to road and transport can visit market places even if their home is at distant place from the market center.

Information Access (INFOACS): households who have access to information have better market access than households who are inaccessible to information. Information accessible households are in a better position to make an informed decision. They know when, where and what to sell and to buy. Moreover, an informed household may know whether to visit or not a market place on a specific market day.

Personal contact with people who live in market places (CONTACT): households who have strong contact with people who are living in market places are well informed on the market condition of the center and they can get information easily. Therefore, rural households who have strong contact with people who are living in market places and market access are expected to show positive relation.

Family size (FMLYSZ): the number of family size plays an important role in market accessibility of the household. The larger the family size is expected to have a positive relation with market accessibility of that specific household. This is because the household would have sufficient labour force to work on farm and other agricultural activities while other members of the family are visiting markets. Thus there is a positive relation between family size and market accessibility of households.

Education status of the household head (EDUC_HH): there is an expectation that an educated household head can better understand how the market works and how to search for information that can help the household to have a better market access than illiterate household head. Thus there is a positive relation between household heads education and market accessibility of households.

Farm size (FARMSZ): this refers to the total available farm land that the household use for cultivation of crops (both food and cash crops). The larger the farm size, the higher crop products the households can produce which make household to visit market centers either to sell their agricultural products or to buy different commodities.

Price Offered (PRCOFRD): this refers to the sufficiency of price offered for different agricultural products in a particular market. A household may not visit market places frequently may be due to the unfair price offered for his/her agricultural products. Thus the sufficient price offered in the market has a positive relation with market participation of households.

Table 2: Variables Codes, Definitions and Measurement of Independent Variables

Variable codes	Variables and expected sign	Definition	Measurement
DISTANCE	Categorical (-)	Distance in travel time from home to market	Minutes
ROADACS	Dummy (+)	Availability of road and transport in the village	1= Available 0= otherwise
INFOACS	Dummy (+)	Access to information	1= Yes 0= Otherwise
CONTACT	Dummy (+)	Personal contact with peoples in market places	1= strong contact 0= Otherwise
FMLYSZ	Continuous (+)	Family size of the household	Count
EDUC_HH	Dummy (+)	Literacy status of the household head	1= Literate 0= Otherwise
FARMSZ	Categorical (+)	Total farm size during the cropping year	
PRCOFRD	Dummy (+)	Sufficiency of price offered in market places	1= Sufficient 0= Otherwise

B. Model Specifications

The dependent variable is dummy variable, which takes a value of 1 or 0 depending on the household's market access situations. Here the main purpose is to determine the probability that an individual with a given set of attribute will fall in one choice rather than the alternative i.e. market accessible or inaccessible not both.

There are approaches developed for a probability model whose response variable is dummy one. These are the Linear Probability Model (LPM), logit model and probit model. LPM has draw backs of showing the uniformity of error terms and possibility of getting the probability function result out of 0 and 1. Due to these fundamental problems LPM is not logically attractive model for dummy responsive variables (Gujarati, 1995).

Thus, one can use Cumulative Distribution Function (CDF) namely logit or probit models (Gujarati, 1995). Both can be used for dummy responsive variables, but most researchers choose logit than probit regression model (ibid). Therefore, logit model guarantee the estimated probability increases and never steps outside 0 to 1. Therefore, logit model was used to identify the determinants of market access and to assess their relative importance in determining the probability of being market accessible or not.

The functional form of logit model is specified as follows from Gujarati (1995);

$$Pi = E(Y=1/X_i) = 1/1+e^{-(Bo+Bixi)} \quad \ldots\ldots 1$$

For simplicity equation 1 can be expressed as

$$Pi = 1/1+e^{-zi} \quad \ldots\ldots 2$$

Where:

Pi is the probability of market accessibility of households the i^{th} respondent and it ranges from 0 -1.

e^{zi}: stands for the irrational number *e* raised to the power of Zi

Zi : is a function of N-explanatory variables and expressed as:

$$Zi = B_1 - B_2X_{2i} + \ldots\ldots + B_nX_n + U_i \quad \ldots\ldots 3$$

Where:

B_1 is the intercept

B2 ------Bn are slopes of the equation in the model

Therefore:

Zi= B+ B1 (DISTANCE) + B2 (ROADACS) + B3 (INFOACS) + B4 (CONTACT) + B5 (FMLYSZ) + B6 (EDUC_HH) + B7 (FARMSZ) + B8 (PRCOFRD)+ U_i

Prior to the estimation of the logistic regression model that the explanatory variable was checked for the existence of multicolinearity. For this purpose, the presence of co-linearity was checked for categorical variables using contingency coefficient test.

Chapter Four

Study Area and Sample Household Characteristics

4.1. Study Area

A. Location

The study is conducted in Kewet *Woreda*, which is located in North Shoa Zone of Amhara National Regional State (ANRS). The *Woreda* is located 220 km North of Addis Ababa. Shoa Robit, the capital town of the *Woreda*, is divided in to seven town Kebeles. According to the *Woreda* Finance and Economic Development Office, the rural section of the *Woreda* has a total area of 491.08 km^2.

The *Woreda* is bounded by four *Woredas*; three *Woredas* within the zone and one *Woreda* from Afar National Regional State. It is border by Tarmaber *Woreda* to the south, to the west by Lalomama *Woreda*, to the north by Jile Timuga and to east by Semurobi *Woreda*, which is found in Afar National Regional State.

B. Agro-ecology

In general, according to the *Woreda* Agricultural and Rural Development office, the agro ecological zone of the *Woreda* is classified in three groups: Kola (dry and hot) zone, Woyna Dega (sub-humid), and Dega (humid) which accounts for 44%, 29% and 27% of the total area coverage respectively. Within the rural section of the *Woreda*, 8 *Kebeles* are found in kola zone, 4 are found in Woyna Dega zone and the rest 6 *Kebeles* are located at Dega zone of the *Woreda*.

There are three seasons in the *Woreda*. These include the dry season called "*Bega*" (from November to February), the small rainy season called "*Belg*" (from February to May) and the long rainy season called "*Kiremit*" (from June to September).

C. Demographic and Socio-Economic condition of the Study Area

Demographic Characteristics

The total population of the *Woreda*, according to the *Woreda* Agricultural and Development office, is 148,854. Out of these, 67.5% and 32.5% are residing in rural and urban areas respectively. The percentage of men and women is 50.43% and 49.57% respectively. The

Woreda population annual growth rate for the last five years has been 2.73 %, above the national population growth rate, which is 2.6%. With regard to the age composition of the rural population, 43.5% the population are children below 14 years old, 53% of the population aged between 15 to 64 years and the remaining 3.5 % are elders above 64 years old. This would make the dependency ratio of the *Woreda* to be 88.61% (Table 3).

Table 3: Age structure and dependency ratio of the *Woreda* rural population

Age	Total population	Percentage from total	Dependency ratio (%)
<15	43,676	43.6	81.97
15-64	53,283	53.02	–
>64	3,537	3.52	6.64
Total	**100,497**	**100.00**	**88.61**

Source: Finance and Economic Development Office of the *Woreda*, 2008

According to the *Woreda* Information Bureau, the majority of the population in the *Woreda* is Amhara ethnic group but other ethnic groups like Oromo and Argoba also reside in the *Woreda.* Orthodox Christianity is the dominant religion followed by Islam and Protestantism.

Economic Activity

Agriculture is the predominant economic activity in the *Woreda.* All households residing in the rural *Kebeles* are practicing agriculture (crop production and animal husbandry). Cereals, pulses, oil seeds, fruits and vegetables, and cash crops (mainly onion) are the major crops grown in the *Woreda.* The production of these crops mainly depends on rain fed agriculture particularly in the big rainy season "*meher*" which range from June to September. But now days, the role of irrigation in crop production is increasing (Table 4). For instance, from the total area of cultivated land in 2006/07, 21.3% and 12.2% of the land is cultivated with irrigation and *Belg* season respectively. In the same year the proportion of the production with irrigation and *Belg* season is 46.7% and 1.8% respectively. The productivity per hectare of land is increasing through year to year. In 2002/03 the productivity of land per hectare in *Meher*, *Belg* and irrigation was 13.3, 6.9 and 66.6 respectively. But in 2006/07 the productivity has increased to

30.4, 5.7, and 136.8[2] respectively for the same seasons. In the *Woreda*, the main crop production through irrigation is onion.

Table 4: Production, Productivity and Season of Production

Year	Season	Cultivated land and total production		Productivity per hectare
		Cultivated land (ha)	Production (Quintal)	
2006/07	"*Meher*"	20027.7 (66.5)	608,913.5 (51.5)	30.4
	"*Belg*"	3687 (12.2)	20,685 (1.8)	5.7
	"Irrigation"	6408 (21.3)	552,402 (46.7)	86.2
Total		**30,122.7**	**1,182,000.5**	

Source: Finance and Economic Development Office of the *Woreda*, 2008

Livestock rearing is also practiced in the *Woreda*. According to the *Woreda* Finance and Economic Development Office, the *Woreda* is estimated to have 302,262 heads of livestock (Table 5).

Table 5: Type and number of Livestock in the *Woreda*

Type	Cattle	Goats and sheep	Donkey	Horse and mule	Camel	Chicken	Bee hives	**Total**
Number	106,737	67,315	18,361	302	1585	103,040	4922	**302,262**

Source: Agricultural and Development Office of the *Woreda*, 2008

Education and Health

Education and health have a potential to contribute for accelerated and sustained development of a nation. Particularly in developing countries like Ethiopia where there is low human capital, the contribution of education and health is critical to create enough and quality human capital in the

[2] The figure seems exaggerated but this is mainly due to the production of cash crops mainly onion through irrigation.

country. However, according to Finance and Economic Development Office of the *Woreda*, a lot of challenges hinder the development of the required human capital. Among others, quality of education and students repetition rate is found to be the major constraints.

The educational coverage of the *Woreda* has reached 90%. The number of girls who are attending school is increasing through time to time. In 2003/04 the total number of girls who were attending school was 7,217 but this figure has increased to 11,360 in 2006/07. In 2007/08, the proportion of girls who were attending primary school reached 48.72%. The basic health coverage of the *Woreda* reached 86 percent in 2007/08 but due to the *Woreda* agro-ecology largely *kola*, the *Woreda* believes, more has to be done to increase the basic health coverage. In 2007/08, the *Woreda* has only one health center and 18 health posts; this would make the ratio of health center to user to be 1:148,854 and ratio of health post to population to be 1: 5583. In addition, the anti natal care and family planning coverage has reached 6.44% and 25% respectively.

However, the *Woreda* still seeks significant efforts and supports to create the required scale of human capital (education and health) in quality and quantity.

Infrastructure

Lack of adequate all weather road networks is one of the most serious constraints of physical infrastructure in the study area. In the *Woreda* there is about 100 km gravel road. This helps 10 *Kebeles* to have access to road. But the remaining 8 rural *Kebeles* do not have any road or transport services at all. As a result majority of the population has to use pack animals and human portage to transport agricultural inputs and outputs. In addition, most of the households are not able to access market easily. In the *Woreda* only two rural *Kebeles* are using electricity for 24 hours and 13 *Kebeles* are using wireless telephone.

4.2. Demographic and Socio-Economic Characteristics of Sample Households

4.2.1. Household Size and Age

The family size of sample households for the study area range between 1 and 10, but the majority of the households (above 70%) had a family size between 3 and 6 members. The average family size of a household for the study households was 4.56.

The majority of sample households (above 90%) were male headed. The majority of the household heads (67%) were aged between 30 and 50 years and it is only 3% of sample households who were aged above 64 years (Table 6). With respect to the marital status, the survey report depict that 83 percent of the sample households were married, and the remaining 18 percent of the study households are either divorced, widowed or single.

Table 6: Age distribution of Household Heads

Age	Frequency	Percent	Cumulative Percent
<30	18	19.1	19.1
30-40	44	46.8	66.0
41-50	19	20.2	86.2
51-64	10	10.6	96.8
>64	3	3.2	100.0
Total	94	100.0	

Source: Own household Survey, 2009

The largest proportion, which accounts for 83% of sample household heads were Orthodox Christians and the remaining 10.6% and 6.4% were found to be Muslims and Protestants respectively. The whole sample households in Jimdere *Kebele* were found to be Orthodox Christian and the relative majority of Muslim and protestant are found in Yelen *Kebele*. According to the key informant interview, the ethnic composition of households in the whole study *Woreda* is mainly composed of Amhara ethnic group.

4.2.2. Educational Status of Household Head

Illiteracy is found to be high in the study *Kebeles*. Household heads who are illiterate accounted for 66% of the surveyed household heads. The illiteracy rate is found to be high in Jimdere *Kebele* in which 87% of the household heads are illiterate and this proportion goes to about 60% for Yelen and Abayater *Kebeles*. In addition, it was found that only 3% of the study household heads had attained secondary education.

Key informants and group discussion participants noted that even if the household heads and elderly were not fortunate to attend formal education in previous times due to lack of educational facilities and awareness, currently, the provision and installation of educational services in terms of physical availability has shown improvement through time for their children. Above 75% of school aged children in the sample household heads are attending school, as revealed by the household survey data.

4.2.3. Housing and Sanitation Condition

As depicted in the Table 7, 67% of the sample households have houses with corrugated iron sheet and the remaining 33% reported to have houses with roof of thatch/grass. Only 43% of sampled households in Jimdere *Kebele* have house with corrugated iron sheet. But this proportion in Abayater and Yelen *Kebele* is found to be 72.7% and 77.8% respectively, indicating better wealth status of households in the two *Kebeles*.

The survey report on sanitation/toilet facilities shows that only 35.1% and 13.8% of the sample households used simple pit and open pit latrine respectively as their main sanitation or toilet facilities. But majority of the respondents (47.9%) used open field as their main sanitation/toilet facility.

In addition, the household survey result depicts that 50% and 45.7% of the sample households used firewood and crop residues respectively as their main source of energy. Particularly, 88.9% of the respondents in Yelen *Kebele* depend mainly on firewood for cooking. In Abayater crop residue is the main source of energy for 77.3% of the respondents (Table 7).

Table 7: Sample Households Housing and Sanitation Facilities.

		Response (percentage)			
		Abayater	Yelen	Jimdere	Total
Main roofing material of the house of sample households	Corrugated iron sheet	32(72.7)	21(77.8)	10(43.5)	63(67.0)
	Thatch/grass	12(27.3)	6(22.2)	13(56.5)	31(33.0)
Main source of drinking water for sampled households	Tapped/piped water	2(4.5)	23(85.2)	-	25(26.6)
	Protected well or borehole	-	2(7.4)	-	2(2.1)
	Unprotected (Spring, river system, and pond/lake)	42(95.5)	2(7.4)	23(100)	67(71.3)
Main sanitation/toilet facilities	Public/shared	-	3(11.1)	-	3.2
	Open pit latrine	7(15.9)	3(11.1)	3(13.0)	13.8
	Simple pit latrine	11(25.0)	16(59.3)	6(26.1)	35.1
	Open field	26(59.1)	5(18.5)	14(60.9)	47.9
Main type of fuel used for cooking	Firewood	9(20.5)	24(88.9)	14(60.9)	47(50.0)
	Charcoal	-	3(11.1)	-	3(3.2)
	Kerosene	1(2.3)	-	-	1(1.1)
	Crop residues	34(77.3)	-	9(39.1)	43(45.7)

Source: Own household survey, 2009

4.2.4. Labor Endowment of Households

As one of livelihood resources, human capital consists of the skills, good health and physical capability for the successful pursuit of different livelihood strategies (Scoones, 1998). Therefore, for creation of household livelihoods and successful combination of different livelihood resources, households must combine their human capital with other resource endowment, which they have access to and control over. To this end, the labor capacity of households is critical in livelihood creation of households.

According to the household survey in the study area, about 93% of sample household heads are adult who are able to work and the rest seven percent are too old to work. The proportion is almost the same within the sample *Kebeles*. Similarly 92% of spouse of the sample households head do have the capacity to work. But when we look at the entire household labor capacity, it is only 57% of the household members who are able to do adult works. And the remaining 20.7%, 18.4% and 3.5% are too young, working child and too old to work respectively (Table 8).

Table 8: Labor Capacity of Sample Households

Working capacity	Proportion of Households labor capacity (%)			
	Abayater	Yelen	Jimdere	Total
Too young (<10 years)	16.3	24.5	25.5	20.7
Working child (10-14 years)	20.1	17.3	16	18.4
Able to do full adults work (15-64 years)	59.8	55.5	54.7	57.4
Too old (>64)	3.8	2.7	3.8	3.5
Total	**100**	**100**	**100**	**100**

Source: Own household Survey, 2009

4.2.5. Land Holding System and Fragmentation

The household survey and key informant interviews clearly indicate that farming is the major source of livelihood in the study area in general and sample households in particular. The availability, accessibility and fertility of land in combination with other factors determine the levels of productivity of farming (Tsegaye, 2008). Specifically, access to adequate size of land is a crucial factor in agricultural production. But the land holding in many rural parts of the country are generally too small even for the production of adequate food to meet the minimum household consumption requirements (Fasil as quoted by Tsegaye, 2008).

According to the household survey, 88.3% of the sample households did have their own land but the rest 11.7% were found to be households without their own land. The highest proportion of households (30%) without any land is found in Yelen *Kebele*. About 98% and 91% of sample households in Abayater and Jimdere *Kebele* have their own landholding.

Table 9: Sample Households Landholding Size

Landholding size (In timad*)	Proportion of Households percentage				
	Abayater	Yelen	Jimdere	Total	Cumulative
1 Timad		3(15.8)	1(4.8)	4(4.8)	4.8
1.01 Timad 2	7(16.3)	4(21.1)	4(19.0)	15(18.1)	22.9
2 .01 Timad 3	7(16.3)	7(36.8)	1(4.8)	15(18.1)	41.0
3.01 Timad 4	11(41.9)	1(5.3)	6(28.6)	25(30.1)	71.1
>4 Timad	11(25.6)	4(21.1)	9(42.9)	24(28.9)	100
Total	**100**	**100**	**100**	**100**	

Source: Own household Survey, 2009 * One timad = 0.25 hectare

The result of the household survey points out that the average landholding size of the sample households is 3.6 timad, which is actually small. The survey result also showed that 71.1% of sample households own four or less timad (less than one hectare) of land. The proportion of sample households who own land size of 3 timad and below is 41% clearly indicates the small size of land holding in the study area (Table 9).

A large proportion (77.7%) of the sample households accessed their land through land redistribution made in 1996. The proportion of sample households who accessed land through renting and share-cropping arrangement was 19.1% and 16% respectively. In Yelen *Kebele* 40.7% of sample households indicated that they accessed their lands either through renting or share cropping (Table 10). The high proportion of accessing land through renting and shared crop in is reported in Yelen *Kebele*, as key informant interview and FGD revealed, is due to shortage of land and the high production of onion in the Kebele. Sixteen percent of sample households mentioned that they have accessed their land plots by inheriting from their parents.

Table 10: Land accessing mechanisms of Sample Households

Access to land Through	Proportion of Households in percentage			
	Abayater	Yelen	Jimdere	Total
Land Redistribution	39(88.6)	19(70.4)	15(65.2)	73(77.7)
Share cropping	2(4.5)	11(40.7)	2(8.7)	15(16.0)
Renting	3(6.8)	11(40.7)	4(17.4)	18(19.1)
Inherited from parents	6(13.6)	2(7.4)	7(30.4)	15(16.0)
Shared with relatives	-	-	1(4.3)	1(1.1)

Source: Own household Survey, 2009

The focus group discussions and key informant interviews emphasize the problem of increasing shortage of land in the study *Kebeles*. The shortage of land was particularly emphasized in Yelen and Abayater *Kebele*, where new comers from neighboring *Kebeles*, *Woredas* and even zones are increasing from time to time. In addition, the newly established families also demand land plots.

Table 11: Land holding Status in the last 10 years

		Proportion of sample households in Percentage			
		Abayater	Yelen	Jimdere	Total
Landholding size status in the last 10 years	Increased	29(65.9)	_	8(34.8)	39.4
	Decreased	12(27.3)	5(18.5)	10(43.5)	28.7
	Stay the same	3(6.8)	22(81.5)	5(21.7)	31.9
Total		100	100.0	100.0	100.0

Source: Own household survey, 2009

As shown in Table 11, above 39% of sample households reported increased landholding size in the last 10 years, while 28.7% and 31.9% of the respondents indicated that their land holding size have decreased and remained the same over the last 10 years respectively. One of the major reasons for high percentage of land holding increment, for the sample households, may be due to land redistribution in the study area. This is because 77% of sample households reported that

they got an access to land through land redistribution (Table 10) and that give the chance for new and non-farm land households to access land. Currently, the Abayater administration is in the process of distributing land to different groups of landless households in the *Kebele*. According to the focus group discussion, the land is redistributed from the communal land.

A. Land Fragmentation and Distance to Farm land

In the rural part of the country it is not uncommon to observe farming households with two and above parcels of land. The fragmentation of landholding could take place either with deliberate action of farmers (to diversify crops) or due to conditions beyond the control of the farmer (Tsegaye, 2008). As in the case of other rural parts of the country, sample farm households in the study area reported high land fragmentation. As pointed out in the focus group discussion and key informant interview, the younger males in the communities are depending on their family's farm land when they establish new families, which increase the fragmentation and decreasing of farm land size from time to time.

Table 12: Farm fragmentation and distance to farm lands

		Proportion of sample households in Percentage			
		Abayater	Yelen	Jimdere	Total
Number of farm parcels	One	23(52.3)	6(22.2)	6(26.1)	37.2
	two	16(36.4)	16(59.3)	13(56.5)3	47.9
	Three	5(11.4)	3(11.1)	3(13.0)	11.7
	Four	_	2(7.4)	1(4.3)	3.2
	Total	100	100	100	100
Time to reach the farthest farmland	1 to 30 minutes	32(72.7)	25(92.6)	6(26.1)	67.0
	31 to 60 minutes	8(18.2)	2(7.4)	9(39.1)	20.2
	Above 1 hour	4(9.1)	_	8(34.8)	12.8

Source: Own household Survey, 2009

The result of sample household survey reported high land fragmentation in the study area. About 63% of the respondents have reported to have two and above plots of land. Particularly, in Yelen and Jimdere *Kebeles* high land fragmentation is observed. In these *Kebeles* above 75% of the sample households have indicated that they have at least two or above farm parcels in different localities (Table 12). The average number of farm plots by the sample households is two in the study area. The focus group discussion and key informant interview indicates that, having two and above plots of land would create difficulties to control crops from thieves. In addition, in time of collecting and harvesting period high land fragmentation incurs high cost.

According to the household survey results, 33% of sample households have to travel above 30 minutes before they reach their farthest farmland and 12.8% of the households are compelled to walk above one hour before they reach their lands. Particularly, sample households (about 35 %) in Jimdere *Kebele* reported that they have to travel above one hour before they get their farthest land plot.

B. Land fertility and use of technologies

The household survey (98% of sample households) and key informant interview clearly indicated that practicing fallowing of land has been abandoned in the communities due to the increasing shortage of land in the area.

Fertility of land is critically important for the community as their farming size is less than a hectare and their livelihood is predominantly dependent on agriculture (particularly rain fed agriculture). But the result of the household survey indicates that only 27.7% of the total sample households land is fertile. Households who have reported their land is moderately and poorly fertile accounts for 58.5% and 13.8% respectively. However, the situation of poor land fertility is severe for 29.6% of sample households in Yelen *Kebele* compared to Abayater (9.1%) and Jimdere (4.3%) Kebeles (Table 13).

Table 13: Characteristic of Farmland

		Proportion of Households in Percentage			
		Abayater	Yelen	Jimdere	Total
Fertility status	Fertile (good)	17(38.6)	7(25.9)	2(8.7)	26(27.7)
	Moderate	23(52.3)	12(44.4)	20(87.0)	55(58.5)
	Poor	4(9.1)	8(29.6)	1(4.3)	13(13.8)
Total		100.0	100.0	100	100.0

Source: Own household Survey, 2009

When we look at the use of improved technologies for production of crops in the study area, the sample household survey indicates that only 31% of the respondents have reported that they have used improved technologies (fertilizers, 96.8% and pesticides/herbicides, 3.2%) for the production of crops. The highest percentage of using improved technologies is recorded in Yelen *Kebele* in which about 67% of sample households reported that they have used modern technologies in production of crops. The lowest percentage of improved technology usage is recorded in Abayater (15.9 %) and Jimdere (17.4%).

The household survey, focus group discussions and key informant interviews have identified the constraints of household for not using improved technologies for production of crops. About 58% and 30% of sample households in the study area have identified that lack of money and supply shortage of improved technologies respectively as their major problem for not using improved technologies for the production of crops.

Chapter Five

Market and Market Access in Kewet *Woreda*

5.1. Market Place Infrastructures and Services

5.1.1. Town and Rural Market Centers

The *Woreda* Information and Public Relation Office acknowledged 12 rural market centers in the *Woreda*. Five of them are very small gatherings and the rest are relatively big. In the *Woreda* there is one town market which is found in Shoa Robit town. The most common and big market days are Saturday and Tuesday, followed by Monday and Thursday. Marketing on Wednesday, Fridays and Sundays are uncommon. In Shoa Robit market convene every day but the largest gathering takes place mainly on Tuesday followed by Saturday. Similarly Abayater market assemble twice a week (Saturday and Monday), although the largest gathering takes place on Saturday. In Yelen, one market gathering takes place per week which is on Monday. In the rest of rural market centers marketing takes place once in a week.

A. Shoa Robit Town Market Center

The Shoa Robit market center is large and includes traders who operate nationally. Traders and commissioned agents (brokers) from distant places visit the market to buy marketable goods brought by village level traders. In addition, there are large number of commissioned agents, traders and whole sellers who are residing in the town. The center is known for its varieties of commercial services than the other two rural market centers, Abayater and Yelen. The market is easily accessible by various means of transport due to its strategic location on the main road from Addis Ababa, Dessie to Mekele. There are large numbers of permanent shops, banks and other financial institutions. The market operates on all days of the week, although the largest gathering takes place twice in a week, Tuesday and Saturday. The communication infrastructure of the town is also well developed and has an access to mobile service. The center has its own bus station and traders has specific place to barter their products.

B. Abayater Rural Market Center

The Abayater rural market center is the biggest rural market gathering in the study *Woreda*. Traders and commissioned agents from distant towns like Shoa Robit, Debresina, Ataye and even Kemise, which is 150 km from the center, visit the market on the largest gathering day i.e. Saturday. Particularly, the commissioned agents from Shoa Robit are visiting the center every day due to its large number of food crop product surplus. According to key informant interview, in the market there are 32 traders residing in the *Kebele* who have the capacity and knowledge to trade with large cities like Mekele and Addis Ababa. In addition, there are many other small level traders who are operating in the market.

The market place is developed in ad-hoc manner but some traders have their own specific locations and temporary shades to sell their commodities on market days. But majority of the traders set up their agricultural products or other commodities at any available space ground. Moreover, large traders have their own specific location and store to buy and sell products. There is no restricted space for trucks and public vehicle to load and unload passengers and commodities. So such services take place on public road, halting traffic particularly on the major market day.

The market is easily accessible due to its all weather road and availability of transport. The gravel road is well maintained. The main problem of the center is lack of communication infrastructure. There is only one telephone booth in the center but some traders and farmers are using mobile phones by using signals from distant town called Debresina. But the signal is too poor that traders and farmers do not rely on it and that limit their access to the necessary information on time. Moreover, facilities are very limited; often there are no market shades and no provision of water supply or latrines. In spite of its low provision of market services, the center has relatively better commercial services than market center in Yelen *Kebele* (see Annex 5).

C. Yelen Market Center

In comparison to the above two market centers, Shoa Robit and Abayater, a market center found in Yelen *Kebele* is relatively small, few available services and has poorly developed infrastructures (Table 14, 15, 16 and Annex 5). The center does not have livestock marketing and big shops. The market is composed of farmers, small retail traders and has only few permanent shops. The market operates once in a week and some small traders from Shoa Robit visit on its gathering day, Monday. The market is developed in ad-hoc manner; as such facilities, services and infrastructures are random and rarely meet the changing needs of market users. Traders can set up their commodities on any available space of land. Similar to the Abayater market center, there is no restricted space for vehicles to load and unload passengers and commodities.

In spite of its poorly developed infrastructure and services local farmers use the market due to its proximity as an outlet for their production of agricultural products mainly onion. The high production of onion in the *Kebele* and neighboring *Kebeles* urges commissioned agents and traders from Shoa Robit to visit the *Kebele* daily. There is no any communication infrastructure in the center to access information from towns and cities. Although transport is available to center, the road is poorly maintained.

Figure 2: Yelen market center

In general, the Shoa Robit market center is bigger than the other two rural market centers by size and availability of different services and infrastructures. Similarly, the Abayater rural market center is by large better than Yelen market both in terms of size of the market, availability of different services, infrastructures and number of market days per week. Thus, market center in Yelen *Kebele* is the small gathering in relative to the other two market centers, Shoa Robit and Abayater.

5.1.2. Condition of Livestock and Crop Marketing

A. Conditions of Livestock marketing

The Shoa Robit and Abayater market centers are markets where livestock trading take place. In Yelen there is no livestock marketing. The livestock market places in the two market centers are found separately in the periphery of the towns. Both livestock markets are well fenced. The livestock market place in Shoa Robit charge service fees from the respective users, whether the livestock is bought or sold. The service charge differs for different livestock. The service charge for shoats is 0.50 cents, for donkey 2 birr, for camel 3 birr and for cattle it is 1.50 birr. All the livestock are confined in one compound and there is no specific place for each livestock. Anyone can put his or her livestock in any part of the compound as he wants. There is no any other service in the compound in the two market centers.

Different ethnic cultural group from Amhara, Afar, Oromo and Argoba participate in the Shoa Robit livestock marketing. In Abayater livestock market, individuals from Amhara, Afar (mainly women) and Argoba ethnic groups are the main actors of the livestock marketing. Men from Afar ethnic groups are not visiting the Abayater market due to ethnic conflict with Amhara groups and that creates security problem to visit the market center.

Figure 3: Livestock marketing in Shoa Robit

In Shoa Robit livestock marketing center, there are police men who are controlling the security of the compound where livestock marketing takes place. One police man has revealed that, the place is secured with police men that control any suspect of conflict that may arise at any time. The police man further indicated that due to death of one Afar on the ethnic conflict, the number of Afar people who are visiting the livestock marketing center for the last two market days have decreased significantly.

In the two market centers both farm household and traders are involved in selling and buying of livestock and direct consumers are also involved in buying livestock. Pastoralists from Afar region are also the major sellers of livestock particularly in Shoa Robit livestock market center. According to Agriculture and Rural Development Office of the *Woreda*, there are no cooperatives or farmer associations involved either in livestock marketing or providing information to farm households and pastoralist in the *Woreda*. There are no grades or standards applied to livestock in both markets. Only one trader in Abayater livestock market center uses scale to buy shoats and he buys shoats 9 birr per kg. There is no personalization of exchange in the livestock market. Any seller (farm household or pastoralist) usually sells animals to whoever offers higher prices for his/her livestock. Farmers in both livestock market centers reported that they have no access to formal livestock market information, rather they depend on actual market day information and some of them may have unreliable market information from friends or relatives. Strengthening the above proposition, key informants interview and focus group discussion explained that, both farm households and pastoralist do not have any information for their livestock rather they depend on actual market day information and are forced to sell with available prices, depending on their immediate need of cash.

When we see the transportation means of livestock to these market places, the focus group discussions and key informant interviews reported that all livestock are transported mainly by trekking. Farm households who have access to road and transport will pay trekking cost per head of cattle or shoat depends up on the distance travel. On the other hand those households who have no access to transport will trek their livestock to market places by their own. There is no farm household or trader who uses truck to transport livestock to these market places and actually there is no such livestock transport service to these market places in the *Woreda*.

B. Condition of Food Crop Marketing

The transaction of buying and selling of crops take place in all the three market centers: Shoa Robit, Abayater and Yelen. Particularly the transaction in Shoa Robit and Abayater market centers are not restricted on market days only, rather rural households can sell their crop products and buy food or other commodities in any days of the week. The crop market places in these

market centers are distributed mainly at the center of market places, main roads and at the main gates of the town and *Kebeles*. According to key informant interviews, small market intermediaries are the main buyers at the main gates of the town and *Kebeles*. Usually, farm households who hold less than 50kg of agricultural products are usually forced to sell to these market intermediaries because large traders are not interested in buying such small amounts of products from farmers rather they prefer to collect from the market intermediaries at the end of the market days.

The number of traders seems to be large, particularly in Shoa Robit and Abayater market centers. In Abayater *Kebele* about 32 large traders are found, according to key informant interview. In addition, there are many other small market intermediaries who are buying small amount of agricultural products from rural farm households and sell to the large traders in the *Kebele*. In Shoa Robit too there are many buyers of grain products in the town. But in Yelen the number of large traders is too small or none compared to the above two market centers. The major traders in Shoa Robit and Abayater sell agricultural products directly to Mekele (mainly) and Addis Ababa. The key informant interviews indicate that all crop traders are residents of the respective *Kebele* or neighboring *Kebeles* where the market exists. This indicates the opportunity that markets creates for those who have easy access to the market.

Both farm households and traders in the *Woreda* and particularly in the three market centers reported to have no access to formal crop market information. But traders are better informed about market conditions and prices than farm households due to their networks and access to communication infrastructures. This lack of information by farmers can be the cause for lack of market power when they deal with traders (IFAD, 2001). The household survey respondents (87%), focus group discussions and traders clearly indicate that the only source of information for rural households crop products are traders only. But the focus group discussion in Abayater *Kebele* and traders reported that farmers are getting the right price at any time due to large number of traders and competition among themselves, although farmers depend on actual market day information from traders.

C. Condition of Cash Crop Marketing

The production of cash crops in the study *Kebeles* is not widely practiced except Yelen and its neighboring *Kebeles,* where the production of onion is practiced extensively and intensively for the last 10 years. Generally, the other study *Kebeles* (Abayater and Jimdere) growing cash crops for own consumption and deliver meager amounts of produce to consumers and markets, focus group discussion reported. The findings explained below mainly show the marketing condition of the market center in Yelen *Kebele*. According to key informant interview in the *Kebele* at least a minimum of 6 Isuzu trucks are visiting the *Kebele* per day to transport onion to big cities/towns mainly Addis Ababa.

In the study *Woreda* findings indicated that there is extreme asymmetry of relations between on the one hand large number of onion producers and very few buyers. In Yelen and neighboring *Kebeles* there are many small onion prod cers but there are only a few number of buyers who are coming from Shoa Robit and only 6 brokers who are facilitating the transaction between small producers and traders. The focus group discussion conducted in Yelen *Kebele* reported that, brokers and traders have formed cartel among themselves, and accordingly they determine the price of the onion by themselves and face no or little competition either among themselves or any associations or cooperatives in the *Woreda*.

Small producers in the *Kebele* and neighboring *Kebeles* do not have access to formal information on cash crop marketing conditions and price. There are no associations, cooperatives or government offices that provide information for the small scale producers in the *Kebeles*. In addition, there are no individual producers, associations or cooperatives who are engaged in trading of onion. Before a couple of years individual farmers used to form a group and started to sell their products directly to big cities like Addis Ababa but can't sustain because they were not successful in the transaction. These give the traders monopsony power in trading of cash crops particularly onion. Due to such condition of marketing small producers faced little choice to whom to sell their products and are forced to accept the offered low price, even if it is unfavorable. They are obliged to do so because of the perishable nature of the products, storage problem and inability to conserve produce for later sale.

Overall, cash crop (onion) producers in the study *Kebeles* don't understand how the market works; they have no or little, if any, information on the marketing condition, price and quality of their products. Marketing cooperatives can give farmers greater control over trading activities than reliance on private traders alone (IFAD, 2001). But there are no marketing cooperatives in the study *Woreda*. The available weak cooperatives are mainly engaged in distribution of agricultural inputs and do nothing on marketing of its members' products.

Given the large number of small cash crop producers (mainly onion) and very few number of traders and brokers, the cash crop marketing seems highly asymmetrical and mostly at the disadvantage of the small producers. Moreover, the asymmetrical relation between producers and traders become serious because of lack of marketing skills, negotiation experiences, information access and organization among farmers.

5.1.3. Availability of Infrastructures and Services

The opportunities of markets and market access are strongly affected by weak infrastructure, absence of processing, storage and marketing facilities, perverse transport, market taxes and etc (DFID, 2002). The Shoa Robit market center has relatively well developed infrastructures and services than the other two market centers, even if its mobile service in the area is poor. The Abayater market center comparatively has better infrastructures than its counterpart Yelen. Except piped water and bus station, all the other services are available. In Yelen market centers, the only available infrastructures or services are piped water and cooperatives (Table 14).

Table 14: Availability of Infrastructures

Market Center	Electricity	Piped Water	Telephone (booth)	Mobile telephone	Cooperatives	Bus Station	Cattle Dip	Storage
Abayater	Yes	No	Yes	Limited	Yes	No	Yes	Yes
Showa Robit	Yes	Yes	Yes	Limited	Yes	Yes	Yes	Yes
Yelen	No	Yes	No	No	Yes	No	No	No

Source: Own survey, 2009

A. Public Services

The availability of different government services may have a direct or indirect impact on market and market accessibility condition of the study area. The socio-economic survey data of ANRS indicated that, 17% of people in Misrak Gojam zone and 8% of people in Debub Wello zone travelled to market centers to get administrative services, while others mention they travel to market centers for social reasons (Tegegne et al, 2000). Thus, market centers with better government services are more likely to be visited by rural households than market centers with no or little government services.

In the study Woreda, the three market centers have different level of government services. Except the Shoa Robit market center, the other two market centers i.e. Abayater and Yelen do not have any government offices related to agriculture, health, postal service, telecommunication and other services (Table 15). In Abayater *Kebele* although a telecommunication office is available it is just to administer a wireless service in the Kebele. In addition to the availability of government services, NGOs are available in Shoa Robit town. But the other two *Kebeles* do not have any NGOs.

Table 15: Availability of Government Services

Market Centers	Post office	Telecommunication	Police station	Health office	Education	Agri. office	administrative
Abayater	No	Yes	Yes	No	No	No	No
Shoa Robit	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yelen	No	No	No	No	No	No	No

Source: own survey, 2009

B. Financial and Credit Services

Financial and credit services are expected to have a direct impact on the engagement of households in the non-farm business activities and market accessibility of that specific market center. Shoa Robit market center has Rural Credit and Saving Office, Banking service and Microenterprise credit service. The other two market centers do not have any of the above

service at all. Microenterprises credit is different from rural credit services in which microenterprises are often for small amounts of loans and collateralization requirements are frequently different from rural credit services (Gary, 1999). But none of them are available in the two rural market centers.

C. Social Services

The three market centers have different level of social services (Table 16) in their respective market centers. All the three centers have primary and junior high school in their centers. In addition, Shoa Robit and Abayater market centers have senior high school, health centers, and clinics. Only the Shoa Robit market center has access to Pharmacies' in its center and none of the market centers have hospitals.

Table 16: Availability of Social Services

Market Centers	Training Centers	Senior High school	Junior High school	Primary schools	Health Centers	Clinics	Pharmacies	Hospital
Abayater	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Shoa Robit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Yelen	No	No	Yes	Yes	No	No	No	No

Source: Own survey, 2009

D. Commercial Services

The availability of different commercial services in market centers directly or indirectly affects the accessibility of the market to both rural and town household visitors. Particularly, for rural household visitors who are visiting market centers once or twice in a week, the availability and quality of services matter which market to visit on a regular bases. In addition, the availability of different commercial services shows the extent of livelihood opportunity for households to engage in different off farm and non-farm activities. In the three study market centers different commercial services are identified with different quantity and quality of service. Annex 5 gives specific counts of each commercial service by market center.

As it is indicated in Annex 5 the Shoa Robit market center has many commercial services than the other two rural market centers, Abayater and Yelen. On the other hand, the Abayater market center is by large better than the Yelen market center. One possible reason for limited commercial services of Yelen market center is lack of electricity and the smallness of the market center in the *Kebele*.

In general, the Shoa Robit market center has better infrastructural, social, public, financial and commercial services than the other two market center. On the other side, the market center in Abayater *Kebele* is by large better than its counterpart, Yelen market center. The Abayater market center is equipped with the availability of different infrastructures and services.

5.2. Marketing Characteristics of Sample Households

5.2.1. Distance to Market Places

One of the main physical constraints of rural household's market access is distance to market places both to rural and town markets. Particularly, in rural areas where there is no road and motorized vehicles the problem of distance to market places would be amplified. In the study *Woreda* distance to market places found to be the critical challenges of rural households to access market centers. The household survey indicated that, all rural market participants (100%) walked to the market centers. Similar findings were obtained on the socio-economic base line survey of ANRS, in which over 90% of the farmers mentioned that they walk to market places. On the other hand, town market participants in the study *Woreda* use vehicles while travelling to the market center. But still households in remote rural areas have to walk at least an hour before they get vehicle to town market. Given the long distance of markets, farmers are burdened with drudgery of travelling with loads of goods.

Table 17: Distance in travel minutes to the nearest Rural Market Center

		Abayater	Yelen	Jimdere	Total
Mean	Dry season	10.18	8.59	146.9	43.19
	Rainy season	14.89	9.93	188.26	55.88
Minimum	Dry season	2	3	60	2
	Rainy season	3	5	90	3
Maximum	Dry season	20	20	270	270
	Rainy season	30	25	300	300
Std. Deviation	Dry season	4.019	4.335	62.409	66.78
	Rainy season	5.883	4.425	71.472	83.507

Source: Own household survey, 2009

According to the household survey, the average travelling time of rural household to reach to the nearest rural market center during dry and rainy season is 43 minutes and 56 minutes respectively (Table 17). But there is significant travelling time difference within the study *Kebeles*. On average a household residing in Abayater and Yelen *Kebeles* might travel 10 minutes and 9 minutes respectively before accessing the nearest rural market center during dry season. However, a household in Jimdere *Kebele* have to walk about 2 hour and 27 minutes before accessing the nearest rural market center during dry season. The socio-economic base line survey of Amhara National Regional State (ANRS) reported that, farmers in South Wello and East Gojjam walk on average of 2 hours and 24 minutes and 2 hours and 7 minutes respectively before they access the nearest market places (Tegegne et al, 2000).

Table 18: Distance in travel minutes to Shoa Robit Market

		Abayater	Yelen	Jimdere	Total
Mean	Dry season	60.44	35.93	137.14	58.60
	Rainy season	89.71	44.44	171.43	80.15
Minimum	Dry season	60	30	120	30
	Rainy season	80	35	150	35
Maximum	Dry season	75	60	180	180
	Rainy season	100	60	210	210
Std. Deviation	Dry season	2.572	5.553	8.921	30.307
	Rainy season	3.0	5.774	10.785	38.998

Source: Own household survey, 2009

The household survey, key informant interviews and focus group discussions clearly indicated that the overwhelming majority of town (Shoa Robit) market participants use vehicle while traveling to the center. But still households in remote areas have first to walk at least an hour before they access motorized vehicle to the center. Household survey reported that rural households on average have to travel for 58.6 minutes on dry season and 80.15 minutes in rainy season to access the nearest town market i.e. Shoa Robit. Respondents in Abayater and Yelen *Kebeles* reported that it would take on average 60 minutes and 36 minutes respectively to access the Shoa Robit market center during dry season. In Jimdere *Kebele*, according to town market attendants, it would take 137 minutes and 171 minutes during dry and rainy seasons respectively to reach the nearest town market, Shoa Robit (Table 18).

This entails that, households in Jimdere *Kebele* are located at far distance from both rural and town market centers. On the other hand, sample households in Abayater and Yelen *Kebeles* do not have physical constraints to access rural markets. But they are expected to travel to access the Shoa Robit market.

5.2.2. Road and Transport Condition

According to the *Woreda* Information and Public Relation Office, there are 100 km of gravel and dry weather road and 215 km of foot path in the *Woreda*. The gravel and dry weather road able 10 rural *Kebeles* to be accessed by modern transport, but the condition of roads are poorly developed that most of them are impassable during rainy season. In addition, although these *Kebeles* have access to road, only few of them have access to modern transport. Modern means of transports don't reach theses *Kebeles* even in their marketing days. But the remaining 8 rural *Kebeles* do not have any access to road and transport at all.

The household survey and focus group discussions in the study area reported that, almost all farm households use no modern means of transport to transport their agricultural products to the market. Their main means of transportation is animal back like donkey (mainly), camel, mule and horses. One of the major reasons for lack of modern transport, as identified by focus group discussion, is lack of rural roads that connect rural households to rural and town market centers in the *Woreda*.

The focus group discussions and key informant interviews reported that no rural *Kebeles* are connected with rural market centers (Abayater and Yelen) via all weather roads. Even those *Kebeles* which are connected with limited road access do not have sufficient public transport to access the rural market centers via motorized vehicles. This forced rural household market attainders to walk to these market centers.

According to the household survey, all sample households in the three *Kebeles* have reported that they are travelling on foot to access the rural market centers (Abayater and Yelen). Particularly, market inaccessible *Kebele* (Jimdere) sample households reported that they are not using modern means of public transport because there is no road which connects their *Kebele's* to the market centre. On the other hand, sample households in Abayater and Yelen *Kebeles* confirmed that they are using modern public transport while they are travelling to town market (Shoa Robit). But still the transportation condition is not favorable for transporters particularly in market days. A Public vehicle with a capacity of holding 24 people mostly holds up to 70 people. In addition, it is not

uncommon to observe trucks like Isuzu that are travelling people from place to place in the study area. These clearly indicate the shortage of public transports and the poor infrastructure and transport condition in study area.

5.2.3. Information and Communication

The extent to which farmers access marketing information tells us the marketing conditions rural households face (Tegegne et al, 2000). The household survey findings reported that none of the rural farm household reported access to formal marketing information for their crop (food and cash) products, livestock and other commodities. The focus group discussion indicated that rural households depend on market day information for all of their products and revealed that their only sources of information for their crop products are traders. Similarly, the household survey also reported that, the overwhelming majority of the respondents (87%) claimed that their only source of information is traders, while about 10% of them indicated that friends/relatives near to market places as their main source of information (Table 19).

Table 19: Source of information for rural households

	Proportion of households in percentage			
	Abayater	Yelen	Jimdere	Total
Traders	97.6	64.3	81.2	87
Friends/relatives	2.4	21.4	18.8	10.1
Radio/television	_	7.1	_	1.4
Brokers	_	7.1	_	1.4
Total	**100**	**100**	**100**	**100**

Source: Own household survey, 2009

In spite of the unavailability of formal market information, above 72% of sample households reported that they have adequate market information for their products on market days. According to the focus group discussion and key informant interviews, even if farmers' only sources of information are traders, they are getting fair price for their products due to the

competition among traders (for instance in Abayater there are about 32 large traders). The Low percentage of respondents (about 50%) who reported that they did not have adequate information for their products is recorded in Yelen *Kebele*. The reason for this low percentage, as depicted in focus group discussion, is due to lack of information for their onion. The only source of information for their onion is brokers and traders who are very few in number and have a cartel among themselves.

In the study *Woreda* communication infrastructures are poorly developed. Yelen and Jimdere *Kebele* do not have any communication infrastructures. This would clearly constrain the information access of households to their products and consequently decrease their market power accordingly. Relatively households in Abayater *Kebele* have access to wireless telephone and limited mobile telephone service by a signal from distant town, Debresina. This would make households and traders in Abayater *Kebele* to access information than the other two Kebeles.

5.2.4. Negotiating Practices

Poor farmers in many areas do not understand how the market works (IFAD, 2001) or they have not experience of market negotiation and are obliged to take the price offered by the trader. In the study area, about 48% of sample households reported that they obliged to sell their products at low offered price. This figure, particularly, emphasized in Jimdere and Yelen *Kebeles* in which about 67% and 87% of sample households respectively reported to sell their products at offered low price in market days (Table 20).

The reason, however, for the two *Kebeles* is completely different. Households in Yelen are obliged to sell at offered price, mainly, due to the perishable nature of their cash crop, onion. The focus group discussion clearly indicated that farmers are forced to sell their products due to its perishable nature and they have no power and experience to negotiate on price and they are not organized in group. In addition to the unfair deal from traders, almost all onion producers in the *Kebele* receive their money two or three weeks later after the transaction takes place. Sometimes, as focus group discussion participants pointed out, farmers receive lower amount of money than their deal with the trader. This clearly indicates in one hand, the non-existent of negotiation practice and organization among farmers, specifically onion producers to enforce agreements and

bargain on prices. On the other side it shows the extreme asymmetry of relation between small producers and traders in the *Kebele*.

Sample households in Jimdere *Kebele* are forced to sell their products at low price because of the long distance they travel before accessing market and it is almost impossible to take back home or to sell another market. Moreover, these households obliged to sell at offered price because they are in need of cash to buy consumption goods and to cover other government and social obligations. Strengthening this proposition, the household survey reported that, farm households are obliged to sell with offered low price to cover cash needs to fill household food gaps (74%), to pay government obligations (74%), and to pay credit (56.5%). The focus group discussions further enlightened that distant rural households are forced to sell at offered price in the market because they are in need of the cash to buy different commodities, cereals foods and other social needs which they can't get once they go back to their village. This entails that these households are located at a remote areas away from market and face difficulties (lack of road, transport and information access) to visit their nearest market places frequently. Consequently, these factors forced the households to lose negotiation skill and market power.

Table 20: Households action when offered low prices

	Proportion of households (percentage)			
	Abayater	Yelen	Jimdere	Total
Take it back home	34(77.3)	8(29.6)	1(4.3)	43(45.7)
Sale at low price	7(15.9)	18(66.7)	20(87.0)	45(47.9)
Take it to other market	1(2.3)	–	–	1(1.1)
Store it in the market place for next market	2(4.5)	1(3.7)	2(8.7)	5(5.3)
Total	**100**	**100**	**100**	**100**

Source: Own household survey, 2009

In contrast to the above two *Kebeles*, majority of sample households in Abayater *Kebele* (above 77%) indicated that they would take back home their products rather than selling with low offered price in the market. The proportion of households who reported that they would take their products to other market is very insignificant and only 15.9% stated that they would sale their products at offered low price (Table 20). The highest proportion of respondents who would take back home their products and the low proportions who would sale at low offered price indicate the negotiation skills and practices of the sample households in the *Kebele*. On the other hand, not taking their products to other markets seem that the Abayater market center offer more opportunities to take different options due to its large number of traders, better organization of the market and low or lack of market asymmetry.

5.2.5. Frequency of Travelling

The great majority (above 92%) of sample household in the study area reported that they came to the nearest rural market once or twice in a week. Sample households in Jimdere *Kebele*, however, informed that although their nearest rural market has two market days per week, only 4% of the sample households reported that they visit the market twice per week and about 22% of them did not visit the market even once in a week (Table 21).

The household survey further indicated that above 60% of sample households either did not visit the town market once in a week or they did not visit it at all. Particularly, the overwhelming great majority (above 91%) of sample households in Jimdere *Kebele* and 61% in Abayater *Kebele* did not visit the town market (Shoa Robit) either once in a week or they did not visit the market at all. In Yelen *Kebele*, about 67% of sample households reported that they visit the town market at least once in a week. Different reasons could be forwarded for the high percentage of town market visitors in the *Kebele*. Among others: the availability of road and transport, nearness of the *Kebele* to town market, high cash crop production of the *Kebele* and the smallness of the rural market found in their *Kebele* could be the main reason for the high percentage of town market visitors.

Table 21: Frequency of Traveling to Rural and Town markets

Frequency of travelling to market per week		Proportion of households in percentage			
		Abayater	Yelen	Jimdere	Total
Twice	Rural market	41(93.2)	-	1(4.3)	42(44.7)
	Town Market	3(6.8)	10(37.0)	-	13(13.8)
Once	Rural market	3(6.8)	25(92.6)	17(73.9)	45(47.9)
	Town Market	14(31.8)	8(29.6)	2(8.7)	24(25.5)
Not at all	Rural market	-	2(7.4)	5(21.7)	7(7.4)
	Town Market	27(61.4)	9(33.3)	21(91.3)	57(60.6)

Source: Own household survey, 2009

According to the household survey conducted in the study area distance to market places and have nothing to sell or buy on regular bases identified as the major problems for not visiting market on a regular bases. Particularly, lack of transaction products to barter on regular bases identified to be the constraints for not visiting market centers frequently. The constraints of rural households for not visiting market places on frequent manner vary among rural areas, although they have some common characteristics. For instance, a study conducted in South Wollo identified the major problems which are affecting households from attending markets were rain, lack of infrastructure, lack of transport and distance to market places are identified as the major ones (Gary, 1999).

5.2.6. Major Constraints of Market Access (Rural and Town)

The type and extent of market access constraints vary from market to market. According to the household survey conducted, the three main problems of market access to the rural households in accordance of the severity of the problems include: market distance (57.4%), information gap (50%) and high cost of transport (42.6%). In addition, lack of communication infrastructures (37.2%), and lack of road/transport (36.2%) are identified as main problems of rural households to access rural and town market in the study *Woreda* (Table 22).

Table 22: Major problems of market access

Major problem of household to access market	Proportion of Households in percentage			
	Abayater	Yelen	Jimdere	Total
Market distance	9(20.5)	22(81.5)	23(100.00)	54(57.4)
Lack of road/transport	8(18.2)	5(18.5)	21(91.3)	34(36.2)
High cost of transport	24(54.5)	8(29.6)	8(34.8)	40(42.6)
Information gap	13(29.5)	22(81.5)	12(52.2)	47(50.0)
Lack of negotiation skill	12(27.3)	10(37.0)	6(26.1)	28(29.8)
Lack of communication	15(34.1)	12(44.4)	8(34.8)	35(37.2)
Poor service in markets	12(27.3)	12(44.4)	3(13.0)	27(28.7)
Lack of security	15(34.1)	8(29.6)	6(26.1)	29(30.9)
Unfair low price of products	9(20.5)	21(77.8)	0.00	30(31.9)
Lack of storage	3(6.8)	13(48.1)	0.00	16(17.0)

Source: Own household survey, 2009

However, the physical constraints of market access to remote rural households is clearly observed in the study *Woreda* when 100 % and over 91% of the sample households in Jimdere *Kebele* reported that their main problem of market access is distance to market places and lack of road respectively. Similarly, the socio-economic baseline survey data of ANRS report stated that farmers' first ranked grain marketing problem is lack of road (Tegegne et al, 2000).

On the other hand, sample households in Yelen *Kebele*, known for its high production of onion, identified that their problem of market access as market distance (81.5%), information gap (81.5%) and unfair, and low price for their products (77.8%). As it is identified in focus group discussion, the *Kebele* and neighboring *Kebeles* main problem of market access identified to be lack of negotiation skill and organization among farmers. In Abayater *Kebele* the problem of market access is not magnificent as Yelen and Jimdere *Kebeles*, as household survey confirmed. High cost of transport (54.5%) to town market identified as their main problem of market access.

Thus, the above data presentation entail that the constraints of market access depend on the availability of infrastructures, location and the type of crop products. For instance, the great majority of sample households in Yelen *Kebele* reported that they get unfair low price for their products because of the cash crop they produce. Remote located rural household main concern is distance and lack of road. On the other hand, physically market accessible households, however, identified lack of communication infrastructures, lack of security in market places and high cost of transport as their major problems in accessing markets.

5.3. Econometric Estimation of Determinants of Market Access

This section presents the major determinants of market access in the study area. Theoretical framework has been developed in section 3.4. In addition, definition of dependent and independent variables developed in this section with expected signs. Factors that are expected to affect market access of rural households were employed in the model. Before the actual commencement of the data analysis in the binary logistic regression model the following diagnosis were taken.

Multicolinearity diagnosis test was taken to clean for independent variables that are dependent to each other. To this end, the presence of co-linearity was checked for categorical variables using contingency coefficient test. Accordingly, multicolinearity has been observed in categorical variables for both rural and town markets factors (Table 23 and 24).

Among independent variables which affect rural markets access; multicolinearity has been observed between distance to market place and road access, availability of information and personal contact with people in market places. As a result, road access and personal contact with people in market places are omitted from the binary logistic regression in determining factors for rural markets (Table 23).

Table 23: Contingency Coefficient test for co-linearity between Categorical independent variables for rural markets.

Variables	DISTANCE	ROADACS	*INFOACS*	*CONTACT*	EDUC_HH	FARMSZ	PRCOFRD
DISTANCE	1	0.697**	0.037	0.042	0.250	0.267	0.325*
ROADACS		1	0.02	0.067	0.257	0.185	0.276
INFOACS			1	0.429**	0.058	0.268	0.037
CONTACT				1	0.073	0.347*	0.185
EDUC_HH					1	0.131	0.120
FARMSZ						1	0.317*
PRCOFRD							1

** High co-linearity between the two variables

Similarly, among the independent variable which affect town market access, multicolinearity has been observed between distance and road access, information access and personal contact, distance and educational status of the household head, farm size and price offered, information access and farm size, and distance and farm size. Therefore, road access, educational status of the household head, farm size, and personal contact with people who are living in market places are omitted from the binary logistic regression model. In addition, availability of public transport was not used in both regressions since it is perfectly correlated with availability of road access for both rural and town markets attainders in the sample *Kebeles* (Table 24).

Table 26: Logit Regression Estimates for Rural Households Town Market Access

Variables	B	S.E.	Wald	Sig.	Exp (B)
DISTANCE	-0.002	0.001	11.557**	0.001**	0.998
INFOACS	0.429	0.515	0.694	0.405	1.536
FMLYSZ	0.072	0.122	0.346	0.556	1.074
PRCOFRD	-0.371	0.413	0.803	0.370	0.690

Results of the determinants of town market access

Dependent variable: Town market access

1= Town market accessible rural households 0= Town market inaccessible households

Note: Exp (B) shows the predicted change in odds for a unit change increase in the predictor.

**= significant at 5%

Distance to market places (DISTANCE): is one of the critical components of determinants of market access in rural areas. The distant/far the rural household from market places is the less access to markets (for both rural and town markets). Distant households may not visit households due to a number of factors, mainly due to lack of road and motorized vehicle. In other words, as the distance rural households travel increase, there will be a negative relation to market access because households face various challenges to visit market places.

The result from the logistic regression, as expected, indicates that distance to market places is negatively and significantly (at 5 % level) related with market access of households in rural areas for both rural and town markets (Table 25 and 26). An increase in market distance by 30 minutes is expected to decrease rural market access by 73% (1- 0.270) and town market access by 0.2% (1-0.998). Here, access to town markets is more determined by the availability of roads/transport than just the distance of households from the market center. Workneh and Roth (2002) in their study of Intensification and Crop Commercialization in Northeastern Ethiopia applied logistic regression. They have found that market distance and market participation is negatively and significantly related. In addition, it was indicated that an increase in market distance by one minute is predicted to decrease market participation by 0.06%. IFAD (2001) also reported that households who are located far from market places are the most disadvantaged

groups to access markets. The problem of distance to market places is amplified, when the village does not have access to road and transport.

Information access (INFOACS): the availability of information plays a pivotal role for market access of rural households. Information accessible households can make an informed decision where, when and at what price to sell their agricultural produce and in which markets to buy consumption goods and agricultural inputs.

The result from the logistic regression indicates that access to information is positively, but insignificantly, related with market accessibility of rural households for both rural and town markets (Table 25 and 26). A study conducted in Bangladesh indicated that use of telephone (mainly for information) increases farm households' market participation by as much as 14% (Chowdhury, 2006). The finding further reported that use of telephone increases factor market participation by at least 8% even when controlling for possible omitted variable bias. Strengthening the importance of information for market access, IFAD (2001) revealed that one reason for lack of market power by the rural household is due to lack of market information.

Family size (FMLYSZ): the availability of sufficient labor plays significant role for market accessibility of a household. Households with abundant labor force would have the option to manage the agricultural activities and to attend market places than households with less labour or family size.

Accordingly the result of the model indicates positive relation, although insignificantly, between family size and market accessibility for both rural and market attenders. The more family size the household has, the better market access that household would have than households with lower family size. In similar notion Fikru (2008) indicated that, households with abundant labour supply are believed more likely to engage in livelihood diversification or have a higher participation in non-agricultural activities.

Educational status of the households head (EDUC_HH): household with skilled and educated heads are believed to participate more in market than illiterate household heads. This may be either through their access to information and opportunities or from understanding the importance of market for their livelihoods.

The result from the model indicates that educational status of the household head is positively although insignificantly related with rural market access of households (Table 25). Educational status of household head affects market access of the household as it is observed form the binary logistic regression. IFAD (2001) clearly indicated that the illiterate or poorly educated groups of peoples are the one who faces market access problem. In addition the report further pointed out that minority ethnic group or those not speaking the official national languages, and women are also included among the group who face problem to access market.

Farm size (FARMSZ): this refers to the total available land that can be cultivated. The higher the farm size the household has, the higher produce expected in the household, which enables the households to visit market places frequently either to sell their agricultural products or to buy other consumption commodities from the market.

As it is expected the result of the binary logistic regression indicates positive relation between farm size and market accessibility of households to rural market centers though it is not significant (Table 25).

Price offered (PRCOFRD): farm households are determined with the available price offered in the market to access that particular market. A household may not visit market places frequently may be due to the unfair price offered for his/her agricultural products.

According to the result of the regression (Table 26), price offered in the market has negative relation with market accessibility of households to town markets. This result entails the low price offered in town market for farm household's products. This means whenever price increases in town markets, it is expected to be more attractive in rural markets. Thus households visit rural market than town markets. According to focus group discussion in Abayater *Kebele*, farmers are offered better price in Abayater rural market center than the Shoa Robit market center. Therefore, farmers, even near to Shoa Robit town prefer to visit the Abayater market to sell their crop products. That is why the result of regression shows a negative relation between town market access of rural farm households and price offered. That is as prices increase in town market, it is expected to be much more attractive in rural market.

Chapter Six

Role of Market in Livelihood Diversification

6.1. Households Livelihood Strategies

All sample households in the three *Kebeles* are engaged in production of food crops. The proportions of households who are engaged in cash crop production in sample *Kebeles* are only 45.7%. The highest proportion of households engaged in production of cash crops recorded in Yelen *Kebele* (88.9%) and the lowest proportion in Abayater *Kebele* (22.7%), while the proportion goes above 39% of sample households in Jimdere *Kebele* (Table 27). The focus group discussion in Abayater *Kebele* pointed out that, the lowest proportion of farm households who are engaged in cash crop production is not due to lack of information or awareness on the importance of cash crops. Rather, the group identified that, lack of resources mainly water and land is the constraints not to engage in cash crop production massively. Particularly, the lack of water in the *Kebele* not only constrains production of cash crops but also hinder the growth of the market center in their Kebele. This is because market participants need sufficient amount of water either for their livestock or for themselves.

In addition to on farm activities, the proportion of households reporting in engaging in different off-farm and non-farm activities in the three study *Kebeles* is found to be 12.8% and 33% respectively. However, there is a significant variation within the study *Kebeles*. The rate of participation in non-farm activities is nearly three times higher in Abayater *Kebele* (52.3%) where large rural market center is available than Yelen *Kebele* (18.5%), where the available rural market is relatively small. Even if these two *Kebeles* have relatively easy market access to Shoa Robit market center, they have difference in the size of available rural market center in their respective *Kebele's* (see section 5.1.1). The lowest rate of participation (13%) is recorded in Jimdere *Kebele* where there is no market in their *Kebele* and households face difficulties in accessing the nearest rural and town market centers, mainly due to distance, lack of road and transport (see Table 17 and 18).

Table 27: Households Participation Rate in off and non-farm Activities

Activities	Proportion of households in percentage			
	Abayater (easy access to market centers)	**Yelen** (medium access to market centers)	**Jimdere** (poor access to market centers)	**Total**
Food crop	100	100	100	100
Cash crop	22.7	88.9	39.1	45.7
Off farm activities	18.2	11.1	4.3	12.8
Non-farm activities	52.3	18.5	13.0	33.0

Source: Own household survey, 2009

On average, only 12.8% of sample households reported that they participated in off-farm activities other than their farming activities. The highest proportion of households who are engaged in off-farm activities are recorded in Abayater *Kebele* (18.2%) where non-farm activities are also the highest, and the lowest proportion is recorded in Jimdere *Kebele* (4.3%) where the proportion of households who are engaged in non-farm activities are the lowest (Table 27).

Both the household survey and the focus group discussions clearly confirmed that households in the study area are not engaged in migration related activities. There were no trends in engaging in migration related activities in the study *Woreda*. In addition it is uncommon to observe individuals or households who are working on other farms. Although there is large labor market (mainly in Abayater and Yelen *Kebeles*), the overwhelming majority of the participants in the labour market are individuals in neighboring *Woredas* and zones.

The household survey report confirmed that, among individual households who are engaged in non-farm and off farm activities, the overwhelming majority of individual households (80%) are engaged in only one non-farm economic activity, while 17.5% of them are engaged in two activities (Table 28). There is divergence among the three study *Kebeles*, just like the participation rate. For instance in Abayater *Kebele* 25% of the proportion of individual

households are engaged in two or three types of non-farm activities, while only 12.5% of the households in Yelen *Kebele* reported to be engaged in two activities. In Jimdere Kebele each individual households are engaged in only one off and nonfarm economic activity. This further entails that availability of market (mainly large market center) and easy market access has significant contribution not only in participation of non-farm activities but also in the extent of diversification in which households are engaged.

Table 28: Number of off and non-farm activities households participating

Number of off/non farm activities	Proportion of households in percentage			
	Abayater (easy access to market centers)	Yelen (medium access to market centers)	Jimdere (poor access to market centers)	Total
One	20(75)	7(87.5)	4(100)	31(80.0)
Two	6(21.4)	1(12.5)	_	7(17.5)
Three	1(3.6)	_	_	1(2.5)
Total	27(100)	8(100)	4(100)	39(100)

Source: Own household survey, 2009

As it is observed from Table 27 and 28, the availability of large rural market center in Abayater *Kebele* helps households to engage widely both on off and nonfarm economic activities. On the other hand, Jimdere *Kebele* is found to be the least beneficiaries from engaging in non-farm activities, mainly due to lack of market in their *Kebele* and difficulty in accessing both rural and town markets. On the other hand, households in Yelen *Kebele*, who are medium access to market diversified better than Jimdere *Kebele*.

6.2. Households Livelihood Activities

According to the household survey, petty trade (30%) and sale of water, fire wood and charcoal (20%) are found to be the most important non-farm economic activities in which households in the sample *Kebeles* are engaged. As we can see from the Table 28, households in Abayater *Kebele's* are engaged in different economic activities than the other two *Kebeles*, Yelen and Jimdere. Sample household in Abayater *Kebele* are engaged in 11 different types of off and non-farm economic activities, mainly in petty trade (32.14%), sale of water, firewood or charcoal (28.6%) and grain trading (21.4%). In addition to the 11 off and non-farm activities, the focus group discussion pointed out the availability of other non-farm activities like sewing, preparing and selling of local drinks, and livestock trading in the *Kebele* in which households are engaged. The focus group discussion and key informant interviews have confirmed the availability of labor market in the *Kebele*. However, according to the focus group discussion, the large majority of individuals who are engaged in such activities are people from neighboring *Woredas* and Zones.

Case 1

Assefa Muluneh, aged 33, has completed 7th grade education and is engaged in grain trading. He started his business before 9 years with the startup capital of 6000 birr. The only and primary source of the capital was sale of crop he produces in that production year. Currently he is living and engaged in grain trading in Abayater *Kebele*, where big rural market exists. Before he engaged in the business, he used to live in neighboring *Kebele* called Sefiberet. But by the time he thought to start grain trade he left his *Kebele* and started to live in Abayater, where large number of supply of grain and other business activities takes place. He leaves his *Kebele* because there are no markets and business activities in the Sefiberet where he lives in. His parent's only source of income was farming.

Currently, Assefa is one of the big grain traders and farmers in the *Kebele*. He has more than 600, 000 birr capital. He sends different agricultural products mainly Teff to big cities mainly Mekele and Addis Ababa. He loads three Isuzu trucks of Teff per week to these cities. In addition to his grain trade, he rents large number of lands and produce more than 120 quintals of Teff annually for the last three consecutive years. He is just one of the many traders who diversified their livelihood activity in Abayater *Kebele*.

Assefa witness the opportunity that the availability of market in the Abayater *Kebele* provides for him. Even the reason he left his birth place is due to the lack of market in the *Kebele* where he used to live in. In addition, he confirmed that there are a lot of other business activities like petty trade, small shops, restaurant, café, carpentry, sale water, fire wood or charcoal in which large number of people are engaged and the potential other people can participate. It is due to the availability of large rural market center that different non-farm activities are available in the *Kebele*.

Sample households in Yelen and Jimdere *Kebeles* reported that they are engaged in only four and three types of activities respectively. None of the respondent in Jimdere *Kebele* reported participating in trade or service related activities, rather they are engaged in off farm activities mainly (Table 29). The main off farm activities in the *Kebele* includes daily labor, selling of crop residue, water or charcoal and renting out oxen or donkey. On the other hand, the big rural market center in Abayater *Kebele* creates different off farm and non-farm economic opportunities for individuals and households residing in the *Kebele* and other households who can access it easily. These activities are more of related with trade and services. These entail in one hand the limited non-farm economic opportunity in the two *Kebeles* and on the other side it shows the significant role of market and market access plays in creating off and non-farm economic activities. Moreover, markets are not only creating non-farm activities but also determine the type of activities in which households are engaged.

Table 29: Households Participation in Off and Non-farm activities

Activities	Proportion of households in percentage			
	Abayater (easy access to market centers	Yelen (medium access to market centers)	Jimdere (poor access to market centers)	Total
Daily Labor	7.14	0	25	7.5
Selling of crop residue	0	37.5	25	10
Sale of water fire wood or charcoal	28.6	0	0	20
Salary employment	3.6	0	0	2.5
Petty Trade	32.14	37.5	0	30
Trading livestock	0	0	0	0
Trading grain	21.4	0	0	15
Running shop	3.6	0	0	2.50
Renting out oxen, donkey	7.14	25	50	15
Restaurants, café, bar	7.14	12.5	0	7.5
Carpentry	7.14	0	0	5
Masonry	7.14	0	0	5
Painter	3.6	0	0	2.5
Total number of activities	11	4	3	

Source: Own household survey, 2009

6.3. Households Income Sources

Table 29 provides information concerning the different types of income activities in which sample households in the study *Woreda* are engaged. The sample household survey shows that on farm activities (food crop, cash crop and livestock rearing) remain the principal sources of income and employment for the rural households in the study *Woreda* which accounts for 70.5% of the total household's income. Food crops accounts for 37.9%, while cash crops and livestock rearing account for 25% and 7.6% respectively. This proportion is similar to the findings of the welfare monitoring survey of Ethiopia (2002) which reported that agriculture accounts for 72% of the total income in rural areas where as the remaining 28% of their total income comes from non-agricultural activities. In addition, Ellis (1999) revealed the contribution of agriculture could range from 50% to 70% in Sub-Saharan African countries by explaining different empirical evidences. But there is great disparity between the study *Kebeles*. For instance, for overwhelming 94% of sample households in Jimdere *Kebele* the principal source of income is farming. But this figures decline to 60.8% and 70.5% for Abayater and Yelen *Kebeles* respectively.

The report of the sample household survey further reported that 29.5% of their income comes from engagement in off farm and non-farm economic activities. An off-farm oriented activity provides only 3.1% of the total income and the rest 26.4% of the households income comes from non-farm economic activities (Table 30).

There is high discrepancy in source of non-farm economic activities between study *Kebeles*. The high proportion of non-farm income source is reported in Abayater and Yelen *Kebeles* which accounts for 39.2% and 27.9% of the total source of households' income respectively. In Jimdere *Kebele* a meager amount of 6% of their source of incomes comes from non-farm sources, which clearly indicate the non-existence of non-farm activities in the *Kebele*. Key informant interview in the *Kebele* has confirmed that there is no or little opportunity of households in the *Kebele* to engage in non-farm activities.

Table 30: Income per capita and Income share from different activities

Income sources	Proportion of households incomes source in percentage			
	Abayater (Market accessible and large market)	Yelen (Market accessible and small market)	Jimdere (Market inaccessible and no market center)	Total
Food Crops	1428.10(54)	1125.30 (29)	1047.2 (50.6)	1247.90 (37.9)
Cash Crops	113.33 (4.3)	1283.10 (33)	299.22 (14.4)	821.60 (25)
Livestock rearing	65.50 (2.47)	330.00 (8.5)	600.00 (29.0)	251.20 (7.6)
On farm income	**1606.93 (60.8)**	**2738.40 (70.5)**	**1946.42 (94)**	**2320.70 (70.5)**
Off farm	121.25 (4.6)	62.50 (1.6)	25.00 (1.2)	101.82 (3.1)
Non-farm	914.91 (34.62)	1083.33 (27.9)	100.00 (4.8)	870.09 (26.4)
Total Non/off farm	**1036.16 (39.2)**	**1145.83 (29.5)**	**125 (6)**	**971.91 (29.5)**
Total household income	**2643.1 (100)**	**3884.23 (100)**	**2071.42(100)**	**3292.61 (100)**

Source: Own household survey, 2009

In this section the importance of market (mainly large market centers) and market access is clearly observed for livelihood diversification of rural farm households. As it is explained above, sample households in Abayater *Kebele* get their 39.2% of their total income from off and non-farm activities, where this proportion decrease to 29.5% in Yelen *Kebele* where there is small rural market center and to 6% in Jimdere Kebele where there is no market center in the Kebele and households face difficulties in accessing both rural and town market centers.

6.4. Analysis of Variance

One way of ANOVA is used to compare whether the mean of one dependent variable differ significantly across the categories of another independent variables. Accordingly, the extent of livelihood diversification is analyzed through one way ANOVA by using rural and town market access as independent variables and amount of income obtained from off and non-farm sources as dependent variable. Within and between groups comparison are made based on Post_Hoc comparison as per of Schefe-test (a commonly used comparison) to identify the significant statistical association.

The result shows that the amount of income obtained from off and non-farm sources differ significantly based on the household's access to rural and town market access (Table 31, and Annex 4). The statistical findings indicate that off and non farm incomes are significantly different (F=8.353, P=0.000) when taking rural market access as independent variable and (F=4.930, P=0.009) when taking town market as independent variable. On the other, word the amount of income households obtained from off and non-farm sources are affected by their access to rural and town market access significantly.

Table 31: Analysis of Rural and Town Market Access through One-Way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Off and Non farm income_ for Rural Market Access	Between Groups	145.102	2	72.551	8.353	.000*
	Within Groups	790.387	91	8.686		
	Total	935.489	93			
Off and non-farm income_ for Town market access	Between Groups	91.457	2	45.728	4.930	.009*
	Within Groups	844.032	91	9.275		
	Total	935.489	93			

* The mean income difference is significant at 0.05 level of confidence

Thus, the above findings entail that both rural and market access significantly affects households income sources from off and non-farm activities. Therefore, market access (both rural and town markets) affects the livelihood diversification of rural farm households significantly.

Chapter seven

Conclusions and Recommendations

Conclusions

The purpose of this study was to examine the relation between markets, market access and livelihood diversification in rural areas. The study looks into the size of markets and market access for livelihood diversification in the study area based on data from household survey, focus group discussion, key informant interviews and case studies. Logit model was used for the regression of the determinants of market access in rural areas for both rural and town markets. To determine market access, frequency of visiting to market places is used as its proxy measure. This is because frequency of visiting to market places integrates a number of variables that can determine market accessibility of rural households. One way ANOVA analysis is used to see whether there is a significant difference between market accessible and inaccessible household's income from off and non-farm sources.

The paper found that rural farm households do not have formal market information about both their crop and livestock products. There are no government offices, marketing cooperatives or associations who are involved in disseminating information for producers. Farm households in the study *Woreda* depend on actual market day information. The overwhelming majority of households (87%) stated that their only sources of information are traders. High inequality of market relations are observed in cash crop producers (mainly onion) and traders in the study area. Producers lack of information, negotiation skill and experiences exposed them to sale their products to a very few (five or six) traders and brokers. These traders and brokers have cartel like cooperative among themselves in the *Kebele* that they determine the price of the onion as they wish.

In addition, the finding further showed that households face different types of constraints to access markets, depending on their location, distance, availability of different infrastructures and types of crop production. For instance for overwhelming majority of sample households in Jimdere *Kebele*, distance and lack of road were the main problems that limit their access to market places. On the other hand, (e.g. Yelen *Kebele* who is known for their cash crop

production) evidenced that information gap (81.5%) and unfair low price offered to be major constraints to access markets.

According to the results of the regression, market access is found to be negatively and significantly influenced by distance. An increase in market distance by 30 minutes is expected to decrease rural market access by 73%. In addition information access, family size, and farm size were found to be positively related to market accessibility of rural farm households. Distance and road/transport are found to be the central problems for rural communities to access markets in the study area. In addition, information gap, lack of communication infrastructures and high costs of transports are mentioned as constraints of access to both rural and town markets.

The results show that availability of market centers and market access determines the livelihood diversification of rural farm households. However, it was observed that it is not only the availability of markets but also size of the rural market that determines the level of livelihood diversification in rural areas. Farm households who live around large rural market centers are able to diversify their sources of incomes than households who live around small rural market centers. Sample households in Abayater *Kebele* (large rural market center available) earn about 40% of their income from non-farm activities, while in Yelen *Kebele* (small rural market center available) earn 30% of their incomes from non-farm activities.

Similarly, the number of non-farm economic activities in which rural households participate depends on access to markets and the size of the markets itself. Thus households who have easy access to large market have higher opportunity of livelihood diversification than households who have easy access to small market and households who face difficulties to access markets. Moreover, the result of one way ANOVA analysis shows that rural households off and non farm income differ significantly based on their access to both rural and town markets.

In general, households in remote areas who lack markets or face serious difficulties in accessing their nearest markets are the least to diversifier both in terms of the proportion of income from non-farm sources and number of livelihood activities in which they are engaged.

Recommendations

As per the findings of the study, the following recommendations are suggested:

- Lack or limited source of information from traders only constrained rural households and consequently make them to lose market power. It is essential to provide timely and formal market information for rural producers. To this end, developing communication infrastructures like mobile and wireless telephones and forming marketing cooperatives would help rural households to access timely and right information for their crop and livestock products.
- Physical constraints of markets (distance to market centers and lack of roads) found to be the central problems of rural households. Therefore, government and other non-governmental organizations need to strengthen the current drive of investing in rural infrastructures mainly roads to alleviate the transportation problems, simultaneously encouraging private business to engage in transportation service.
- Providing and developing social, commercial and financial services facilitate market development creates opportunities to expand non-farm and off farm income generating activities for rural households.
- It is observed that rural households who have easy access to market centers able to diversify their sources of income significantly than households who have limited or face difficulties to access market centers. Therefore, enabling rural households to have easy access to markets would enable to diversify their incomes. To this end developing infrastructures like road, transportations, telecommunications, electrification, and others enable rural households to access market centers and diversify.
- The findings also showed that households residing in big rural market centers able to diversify better than households residing in small rural market centers and households who don't have markets in their *Kebeles*. It is critical to develop and expand the current small market centers and/or to create new ones in appropriate centers.

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Annex

Annex 1: Household Questionnaire

Study Woreda: Kewet

Name of PA/Kebele_____

Name of "Got"_____

A. Identification and Basic Information of Household

1		2	3	4	5	6	7	8	9
ID# 01 for the HH head	Name of the household member	Relationship to household head (write code) (a)	Age	Sex Male=1 Female=2	Religion 1=Orthodox 2=Muslim 3=Protestant 4=other	Labour capacity (write code) (b)	Literate Yes=1 No=2 (skip to Q9)	Grade completed	Attending school now Yes=1 No=2
01									
02									
03									
04									
05									
06									
07									
08									
09									

	(a) **Codes** relation to household head 01= household head 02= wife 03= son 04= daughter 05= son-in-law 06= daughter –in-law 07= brother 08= sister 09= friend 10= other specify_____	**(b). Codes**: labour 1= child (too young to work) 2= working child 3= adult able to do full adult work 4= elderly (not able to do full adult workload) 5= permanently disabled 6= chronically ill (unable to work for the past three months)

10. What is the main roofing material of the house you live in now?

1. Corrugated iron sheet
2. Thatch grass
3. Plastic sheet
4. Cement/concrete
5. Other Specify _____

11. What is the main source of drinking water for the households?

1. Tapped/piped water
2. Protected well or borehole
3. Open well
4. Surface water (spring, river/system, and pond/lake)
5. Other specify _____

12. What is the main sanitation/toilet facility that the household is using?

1. Public or shared latrine
2. Open pit latrine
3. Simple pit latrine
4. Open field
5. Forest field
6. Other specify _____

13. What type of fuel does your household mainly use for cooking?

1. Firewood
2. Charcoal
3. Kerosene
4. Dung
5. Crop residuals
6. Electricity
7. Other specify _____

B. Access to Natural Capital, Land Tenure Situations and Resource Management

1. Do you have your own land? 1. Yes 2. No (Skip to 3)
2. If yes, how large is it in "timad"?

A. 1 Timad
B. 1.01 Timad – 2 Timad
C. 2.01 Timad – 3 Timad
D. 3.01 Timad – 4 Timad
E. > 4Timad

3. How did you get access to land? (Multiple responses are possible)

1. Through land redistribution
2. Shared crop in
3. Rented in
4. Inherited from parents
5. Shared with relatives
6. Other specify _____

4. How many plots of land do you have? _____

5. Approximately, how many minutes/hours does it take you get from your home to your farthest farmland? (Actual number of minutes) _____

6. Would you tell me the general soil fertility status of your farms?

   1. Poor 2. Moderate 3. Fertile

7. Do you want additional land? 1. Yes 2. No

8. What is the reason to have additional land?

   1. My land is too small
   2. To earn more income
   3. To produce enough amount of food for consumption
   3. Other specify _____

9. Did you cultivate your entire farm in the last harvesting period?

   1. Yes 2. No

10. Does the size of your landholdings have _____ over the last ten years?

    1. Increased 3. Stayed the same
    2. Decreased 4. Don't know

11. Do you use improved technologies for production of crops? (If no skip to Q15)

    1. Yes 2. No

12. Which one of the following inputs did you use for crops production in the last farming season?

    1. Fertilizers 4. Pesticides/herbicides
    2. Improved seeds 5. Other specify _____
    3. Improved farm tools

13. Is the amount of these inputs sufficient enough for crop production?

    1. Yes 2. No

14. If the answer for Q 13 is no, what was the reason for not to have sufficient amount of these inputs?

    1. Lack of money to buy 3. Lack of credit service
    2. Shortage of supply 4. Other specify _____
    3. Limited market access

15. If the answer for Q11 is No, why don't you use these farm inputs?

    1. Lack of money 4. Lack of credit service
    2. Shortage of supply 5. Other specify _____

3. Limited market access

16. Do you or your family members currently raise any of the following livestock or poultry?

Type	1. Yes 2. No	Current number
Cattle		
Goats		
Sheep		
Donkeys		
Mules		
Horses		
Camels		
Pigs		
Hen		
Other specify		

C. Household Livelihood activities

1. In the last 12 months in which types of activities the members of your household were engaged in.

1.	2.	3.
Activity	1. Yes 2. No	Amount of income earned per month/year (Birr)
1. On farm Activities		
Food crop		
Cash crop		
Livestock rearing		
2. Off farm Activities		
Daily labour on other farms		
Selling of crop residue		
Sale of water fire wood or charcoal		
3. Non-farm Activities		
Salary employment		
Petty Trade		
Trading livestock		

Trading grain		
Running shop		
Renting out oxen, donkey		
Restaurants, café, bar		
Carpentry		
Masonry		
Painter		
Daily Labor		
4. Migration related activities		
Other specify		

4. Of the above activities which are the first, the second and the third livelihood activities in terms of income?

   1st _____

   2nd _____

   3rd _____

5. Do you think that the income that you and your family earn from your primary livelihood source enough?

   1. Enough 2. Insufficient 3. Moderate

6. What is your estimated annual production and amount of sale for the market of the following cereal Crops?

Cereal crops	**Annual production (Qt)**	**Provide for the market (Qt) (1/4, ½, 3/4 and All) of production**
Teff		
Maize		
Wheat		
Sorghum		
Barely		
Other specify		

7. What is your estimated annual production and amount of sale for the market of the following Crop?

Cash crops	Annual Production	Provide for the market
Lentil		
Fruits and vegetables		
"Noug"		
Bean		
Peas		
Vetch linseed		
Jinger		
Chille Paper		
Sun flower ("suf")		
"Masho"		

8. When did you sell most of your products?
   1. During harvesting period 3. Other Specify _____
   2. Slack period
9. Why did you sell these products? (More than one answer is possible)
   1. To pay credit
   2. To pay government obligations
   3. Due to perishable nature of the products
   4. Due to lack of storage
   5. To buy cereals food
   6. To gain more income
   7. Other specify _____
10. Do you engage in any other activities other than crop production and livestock rearing? If no skip to Q14.
    1. Yes 2. No
11. What is/are the major source of your capital? (More than one answer is possible)
    1. Own 3. Donation (parents, friends)
    2. Borrowed 4. Other specify _____

12. For what purpose(s) do you or others in your households use the earnings obtained from non-farm business activities?

NO	Purposes	1. Yes 2. No	Rank the first three purposes
1	For saving		1st
2	To buy food		2nd
3	To build house		3rd
4	Buy clothes		
5	Pay loan		
6	To purchase modern farm inputs		
7	To pay tax		
8	Other Specify _____		

13. What are the major constraints/obstacles that you face to expand your non-farm employment opportunities to your household?

1. Lack of capital
2. Lack of skill/education
3. Lack of market/demand
4. Lack of time
5. Lack of awareness
6. Other specify _____

14. If non-of your household members engage in non-farm activities what are the reason for not practicing these activities? (Multiple responses are possible)

Lack of market/ demand

1. Lack of skill/education
2. Lack of start up capital
3. Lack of spare time from agriculture
4. Lack of labour
5. Health problem
6. Other specify _____

15. Are there any development projects that are working in your area?

1. Yes
2. No

16. If there are any development projects, do they create employment opportunities for local people?

1. Yes
2. No

D. Market

1. List the name of the nearest market that you are selling your products and buying different commodities?

Markets name	Mode of transport	Distance in (travel hours)				Available service					
		On foot (One way)		By car (One way)		Crop (One way)		Livestock (One way)		Consumer goods (One way)	
		Dry season	Rainy season	Dry season	Rainy season	Sell	Buy	Sell	Buy	Sell	Buy
A.											
B.											
C.											
D.											

2. From the above markets list the name of three markets which you visit frequently for the last 12 months?

   1st _____

   2nd _____

   3rd _____

3. How many market days per week does these markets be functional?

   1. Market A _____days per week

   2. Market B _____ days per week

   3. Market C _____ days per week

4. Are the numbers of market days enough to you?

   A. Yes B. No C. Don't know

5. How many days per week do you visit these markets?

   1. Market A _____ days per week

   2. Market B _____ days per week

   3. Market C _____ days per week

6. If you are not visiting these markets regularly, what is the reason that you are not visiting these markets on regular bases?

   A. Too far D. Have nothing to sell or buy on regular bases

   B. Lack of transportation/road E. Problem of security

   C. High cost of transportation F. Other specify _____

7. Does your village have an access to road to connect to these markets? (If no skip to Q 12)

   Yes=1 No=2

8. Is the road all weather road?

   Yes=1 No=2

9. How many times public transportation visit your village per week? _____

10. To whom do you sell your products?

1.	Trader	4.	Cooperatives
2.	Consumer	5.	Other specify _____
3.	Assembler		

11. What factors determine to whom you sell your products? (Please rank them in order of importance)

1.	Price attraction	4.	Proximity
2.	Intra family linkages	5.	Approach through brokers
3.	Transport availability	6.	Other specify _____
4.	Good will you perceive on the buyer		

12. Do you have adequate information for the products that you are selling in the market?

    1. Yes 2. No 3. Don't know

13. From where did you get the information for the price of crop that you are going to sell?

1.	From traders	4.	From government bodies
2.	From friends/relatives	5.	From Radio/television
3.	From cooperatives	6.	Other Specify _____

14. How is your personal contact with peoples who live in market area?

1.	Strong contact	3.	Weak contact
2.	Medium contact	4.	No contact at all

15. Do you think that the prices offered in the market are sufficient most of the time?

    1. Sufficient enough
    2. Low
    3. Don't know

16. What did you do if you could not get enough prices for your products in the market day?

1. Take it back home
2. Sale at low price
3. Take it to other market
4. Store it in the market place for next market
5. Other specify _____

17. Who determine prices of your product?

1. Myself
2. Market itself
3. Government
4. Traders
5. Unions
6. Other specify _____

18. Is there any storage facility that you can store your product in the market place?

1. Yes
2. No

19. If yes how much did you pay per week? _____ Birr per week.

20. Did all farmers get the same price on the same market day for the same products?

1. Yes
2. No
3. Don't know

21. If there is difference in price offering, what do you think is the reason?

1. Volume of products
2. Negotiation skill
3. Market information gap
4. Proximity to buyers
5. Sale on credit
6. Other specify _____

22. When do you get your money?

1. As soon as sales
2. After some days/weeks
3. Other Specify _____

23. Is there price difference between during harvest time and slack period?

1. Yes
2. No

24. If yes to Q 22 how large is the difference?

1. Double
2. Half
3. One third

25. Do you have adequate information which crop type has better price than others? 1. Yes 2. No

26. Do you have regular customer?

1. Yes
2. No

27. If yes, what advantage did you obtain with having regular customer?

A. Market information
B. Fair price
C. On time payment
D. Prior payment
E. Credit service
F. Other specify _____

28. Which one of the following are the major problems/constraints for you and your household to access market?

Problems/constraints	1. Yes 2. No	Rank
Distance/time it take to market		
Lack of road/transportation		
High cost of transportation		
Information gap		
Lack of negotiation skill		
Poor infrastructure like telephone		
Poor service availability		
Lack of security		
Unfair price offered in markets		
Lack of storage		
Other specify _____		

Annex 2

Checklist for Focus Group Discussions

- Availability of non-farm business activities in the area and who access them?
- Major constraints and challenges of crop (cash and food crop) and livestock rearing in the area?
- Major constraints and challenges of households to engage in non-farm livelihood activities?
- What kind of service and facility are available in the market?
- Which markets people prefer to buy and sell products and why does people prefer these markets?
- How price of different commodities determined in the market?
- Is there anybody (governmental or non-governmental) who provide information about the price of different products to the farmers?
- Do farmers have information on the price of different types of crop before they cultivate their crops?

- Do you think that farmers have adequate information while they are selling their products?
- Who are the main buyers of different crop products and livestock and where do they come from?
- What are the main modes of transport for farmers to access these markets?
- Major problems and constraints of households to access market in the area

Checklist for Key Informant Interview

- Natural resources conditions (water resources, land holdings, systems, Natural resources depletion, soil fertility, forest resources situation, and its utilization)
- Infrastructure situation (road, health, education, telecommunication, electricity, farmers training centres)
- What are the major sources of income of the communities in your area
- What are the main opportunities exist in the area for production of food and cash crops in the area?
- What are mains the constraints of cash crop production and marketing in the woreda?
- Labour markets (off farm activity)
- Does farmers have adequate information for their products in the market days
- What are the main constraints and challenges of communities to access market in the area?
- What are the main non-farm livelihoods activities options in the area?
- What are the main constraints and challenges of communities to engage in non-farm business activities in the area?
- Who are the main buyers of different crop products and livestock and where do they come from?
- Who are the main sellers of different commodities in the area?

Annex 3: Checklist for the available services in market places

A. Infrastructures

Market Center	Electricity	Stand Pipe Water	Piped Water	Telephone	Mobile	cooperatives	Bus Station	Cattle Dip	Slaughter House	Storage	Rural Credit & Savings	
											All weather	Limited road access
Abayater												
Showa Robit												
Yelen												

B. Government Services

Market Centers	Postal Service	Telecommunication	Police station	Health	Education	Agriculture
Abayater						
Shoa Robit						
Yelen						

C. Financial Services

Market Centers	Bank	Rural Credit and saving	Microenterprise Credit
Abayater			
Shoa Robit			
Yelen			

D. Social Services

Market Centers	Training Centers	Senior High school	Junior High school	Primary schools	Health Centers	Clinics	Pharmacies
Abayater							
Shoa Robit							
Yelen							

E. Commercial Services

Market Centers	SSI	WW	MW	BM	BS	GM	HS	PH	Ra/WR	We	Ho	Re/Sn	TR	Ba	Bu	Car	ReS	GT	LT	Bar	WS	WtS	SS	SR
Abayater																								
Shoa Robit																								
Yelen																								

Annex 4: Post-Hoc Comparisons using Scheffe (One-Way ANOVA) for Rural and Town Market Access

Dependent Variable	RMA I-J	RMA I-J	MD (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Off and non-farm income sources_ as rural market access as independent variable	0	1	-.711	1.197	.839	-3.69	2.27
		2	1.857	1.203	.309	-1.14	4.85
	1	0	.711	1.197	.839	-2.27	3.69
		2	2.568(*)	.632	.001	.99	4.14
	2	0	-1.857	1.203	.309	-4.85	1.14
		1	-2.568(*)	.632	.001	-4.14	-.99
Off and non-farm income sources_ as town market access as independent variable	0	1	2.202*	.741	.015	.36	4.05
		2	-.273	.936	.958	-2.60	2.06
	1	0	-2.202*	.741	.015	-4.05	-.36
		2	-2.474	1.049	.067	-5.08	.14
	2	0	.273	.936	.958	-2.06	2.60
		1	2.474	1.049	.067	-.14	5.08

* The mean difference is significant at the .05 level MD=Mean Difference

RMA = Rural Market Access

Annex 5: Availability of Commercial Enterprises

Market Centers	SSI	WW	MW	BM	BS	GM	HS	PH	Ra/WR	We	Ho	Re/Sn	TR	Ba	Bu	Car	ReS	GT	LT	Bar	WS	WtS	SS	SR
Abayater	N	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Shoa Robit	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Yelen	N	N	N	N	Y	Y	N	N	N	N	N	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N

Source: own survey, 2009 Y= yes the service is available

N= No the service is not available

Key

SSI= Small Scale Industries HS=hide and skin Ba= bakery

WW= wood work PH=photography Bu=butchery

MW=metal work Ra/WR= radio and watch repair Car=carpentry

BM=building materials We=welding ReS=retail Shop

BS=black smith Ho=hotel GT=grain Trade

GM=grain mill Re/Sn=restaurant/snack bar LT=livestock trade

TR=Tea Room Bar=barbers SR=shoe repair

WS=wood selling WtS=water selling SS=shoe Shine

Declaration

gned, declare that the thesis is my original work, has not been a degree in any other university and that all sources of material esis have been duly acknowledged.

Elias

Confirmed by:

Worenh Negatu

Advisor