Sustainable Livelihood of Rural Households through Rural-Urban Linkage:

In Case Study of GubaLafito Woreda, South Wollo Zone, Ethiopia

By

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This is to certify that the thesis prepared by *Meron Tilahun, entitled: Sustainable Livelihood of Rural Households through Rural-Urban Linkage: In Case Study of GubaLafito Woreda, South Wollo Zone, Ethiopia* and submitted in partial fulfillment of the requirements for the degree of Master of Science in Economics Policy Analysis complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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_____

Chair of Department or Graduate Program Coordinator

Statement of declaration

I, Meron Tilahun, have carried out independently a research work on “Sustainable Livelihood of Rural Households through Rural-Urban Linkage: In Case Study of GubaLafito Woreda, South Wollo Zone, Ethiopia” in partial fulfillment of the requirement of the M.SC program in Economics Policy Analysis with the guidance and support of the research advisor.

This study is my own work that has not been submitted for any degree or diploma program in this or any other institution, and that all references materials contained therein have been duly acknowledged.

Name Meron Tilahun Advisor’s Name Dr. Girma Estifanos

Signature---------- Signature----------

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ACRONYMS

ACSI	Amhara Credit and Saving Institution
ANRS	Amhara National Regional State
CBHI	Community Based Health Institution
CSA	Central Statistical Authority
DFID	Department for International Development
LM	Livelihood Means
MASL	Meter Above Sea Level
MoFED	Ministry of Finance and Economic Development
RUL	Rural Urban Linkage
SLA	Sustainable Livelihood Approach
UNDP	United Nation Development Program
UNIFEM	United Nation Development Fund for Women

Abstract

This study analyses the sustainable livelihood through rural urban linkage. This study was conducted with the objective of examining and studying sustainable rural livelihood through rural urban linkage in GubaLafito district. In order to achieve this objective, primary data were collected from 164 randomly selected households. For the data analysis, both descriptive and econometrics analysis were used to describe the livelihood resource/asset of the GubaLafito district and the different livelihood strategy options. The result of the study reveals that, through rural households derive a larger proportion of their income from framing, there are also different kinds of strategies they follow to improve their livelihoods, increase credit service and saving of money is important to stimulate the rural non-farm income and strengthen rural urban linkage. Physical infrastructure like road, communication and rural electrification are improves rural productivity and access for market in their village encourage the flow of people from urban to rural areas and increase the degree of rural and urban linkage between rural and urban areas. Finally, in order to strengthen rural urban linkage; agricultural development to generate surplus, strengthen marketing facilities and intensifying the physical connection are some of the critical points which is forwarded by the researcher as a recommendation.

CHAPTER ONE: INTRODUCTION

1.1. Background of the study

International development (DFID, 1997) has promoting ‘sustainable livelihoods’, by stating that, ‘its objective is expected to contribute to the overall goal of development’. The Bruntland Commission on Environment and Development, Agenda 21, the Social Summit, the Beijing Conference, Desertification Convention and UNIFEM have all incorporated and further developed the concept of sustainable livelihood (UNDP, 1997) sited in Tewodaj (2006). Furthermore, Meikle et al., (2001) stated that if livelihood can cope with and recover from stress and shocks maintain and enhance its capabilities and assets and enhance opportunities for the next generation then it is sustainable.

According to Mohammeds (2007), the majority of the rural people depend on a single productive activity, mainly farming. Unlike most developing countries, only 35% of rural respondents in Ethiopia rely on a combination of farming and other income earning activities. Access to land and capital are important in determining which groups are more likely to engage in farming, non-farm activities, migration, or multiple activities. The rich and elderly with access to land involve only in crop production, while the rich and the young landless and young landowners derive their incomes from more than one activity, which producing high returns. Likewise, the poor with land engage in both farming and low return non-farm activities. However, landless poor men and women engage only in less remunerative non-farm activities.

Rural-urban linkages need to be strengthened, to minimize the poverty impacts, and to take full advantage of the synergies. This involves integrating markets, opening up the flows of labor, and access to income-earning opportunities between towns and surrounding rural areas. The specific

instruments to achieve this include improved rural access roads, building up of small rural towns, improved telecommunication access, the continued spread of general education and technical-vocational training in pre-urban areas; development of small-scale credit markets; and the major program of rural electrification (MoFED, 2005). So, strengthen of rural-urban linkage is one of the policy agendas of the government. Therefore, the rural-urban linkage initiative by the global mountain program was timely, helped us to strengthen our thoughts and it is well linked to the strategy of the government.

1.2 Statement of the problem

According to UNDP (2000) more explicit attention given to rural-urban linkage can make several important contributions to development policy. Generally, insights about the nature of and opportunities to build up on rural-urban linkage can assist efforts to spread opportunities for livelihood and wellbeing more evenly over space, create more resilient regional economies and thereby robust and stable national economies so that town and countryside progress in a reciprocal manner. RUL can also help to create a higher level of spatial scanning to mitigate unintended impacts on the environment and a long term sustainability of development in both rural and urban areas.

In Ethiopia, previous development efforts were towards either sectorial or spatial approaches. Sectorial approaches focused on agriculture, with little emphasis on secondary and tertiary activities. Regarding spatial approach, the focus of the government in the past was on rural areas. Moreover, rural and urban developments were treated separately, with planning controlled by different bureaus. However, the acute level of land shortage accompanied by rapid population growth forced rural people to become involved in non-farm activities in their village or in nearby

towns, or to migrate (Mulat and Teferi, 1996). This has had implications for both rural-urban linkages and livelihood strategies.

Livelihood strategies in the rural and urban areas, which straddle the rural-urban divide, are the outcome of the opportunities and constraints arising from wider transformations in the socio-economic context and of specific and local historical, political, socio-cultural and ecological factors (Tacolli, 2002). In line with this, current trends in flows natural resource, people, goods, money and information and patterns of occupational diversification as well as level of poverty and environmental degradation in Ethiopia reflect a dynamic process of ecological, economic, social, and cultural transformation that needs to be better understood and guided towards better direction using the changing situation as an opportunity (UNDP, 2003). Therefore, particularly under the current situation of high population growth and declining returns from agriculture for smaller farmers, food insecurity and serious environmental degradation, as also argued by Tacolli (2002), strengthening rural-urban linkage can play an increasingly significant role in local economies and in the livelihoods of large number of people.

The aim of this paper is thus to identify or assess the varying combination of livelihood strategies of people and the nature of rural urban linkage by taking each livelihood resource/asset. The researcher also assessed extent of linkage for the rural household to the urban center.

1.3 Research objectives

The general objective of the study is to examine and study the impact of sustainable rural livelihood of rural household through rural urban linkage.

Having the aforementioned problem and general objective in mind, the researcher addressed the following specific research objectives:

- Examine the livelihood resources/assets of the Guba Lafito district
- Assess the different livelihood strategy options of the Guba Lafito district.
- Examine the extent of linkages for the rural households to the urban center in the Guba Lafito district.

1.4. Significance of the study

It is obvious that rural-urban linkage plays a crucial role in the overall development of the country. Different studies have been conducted to confirm its significance. These researches on the contribution of rural-urban linkage to rural households are many in number. But these researches, most of the time, focus on either the role of rural-urban linkage under different framing system or role of rural-urban linkage on productivity. Research results on sustainable livelihood through rural urban linkage are scanty. Most research conducted in Ethiopia on sustainable livelihood through rural-urban linkage are one sided, i.e they analyze livelihood strategies of the rural households while others dealt with rural-urban linkage under different farming system. This underestimates the role of livelihood strategies. This paper fills the gap in this area, that is, it analyses sustainable livelihood though rural urban linkage and how it

determines the household means of livelihood. In addition the paper will give policy recommendation based on results of the analysis.

1.5. Scope of the study

The study encompasses the livelihood resource/assets including (human, natural, social, financial and physical capital), the livelihood strategies option including (agricultural intensification, diversification and migration) and the extent of linkage for the rural households to the urban center in the study area. It covers the rural household of Guba Lafito district, Amhara region in which the rural household survey is conducted. The rural household survey data collected from 6 kebeles of the district namely, Hara, Dorogibir, Amayemicha, Wiraf, Gedober, Weyiniye.

1.6. Limitation of the study

The study does not include a livelihood strategy of agricultural extensification. This is due to the study area have fragmented land size. This implies that it is difficult to undertake agricultural extensification in the study area. Moreover, in this study the researcher purposively selected 6 of the 15 kebeles which all together from Guba Lafito district. So, future researchers may include other kebeles to generalize the findings and also to compare the results across the district when it is practical.

1.7 Organization of the study

The rest of the paper is organized as follows. Chapter two presents literature review including theoretical and empirical evidence. Chapter three is devoted to research methodology and econometrics models. Chapter four is concerned with statistical and econometrics analysis. In Chapter five, we present conclusions and policy implication.

CHAPTER TWO: LITRATURE REVIEW

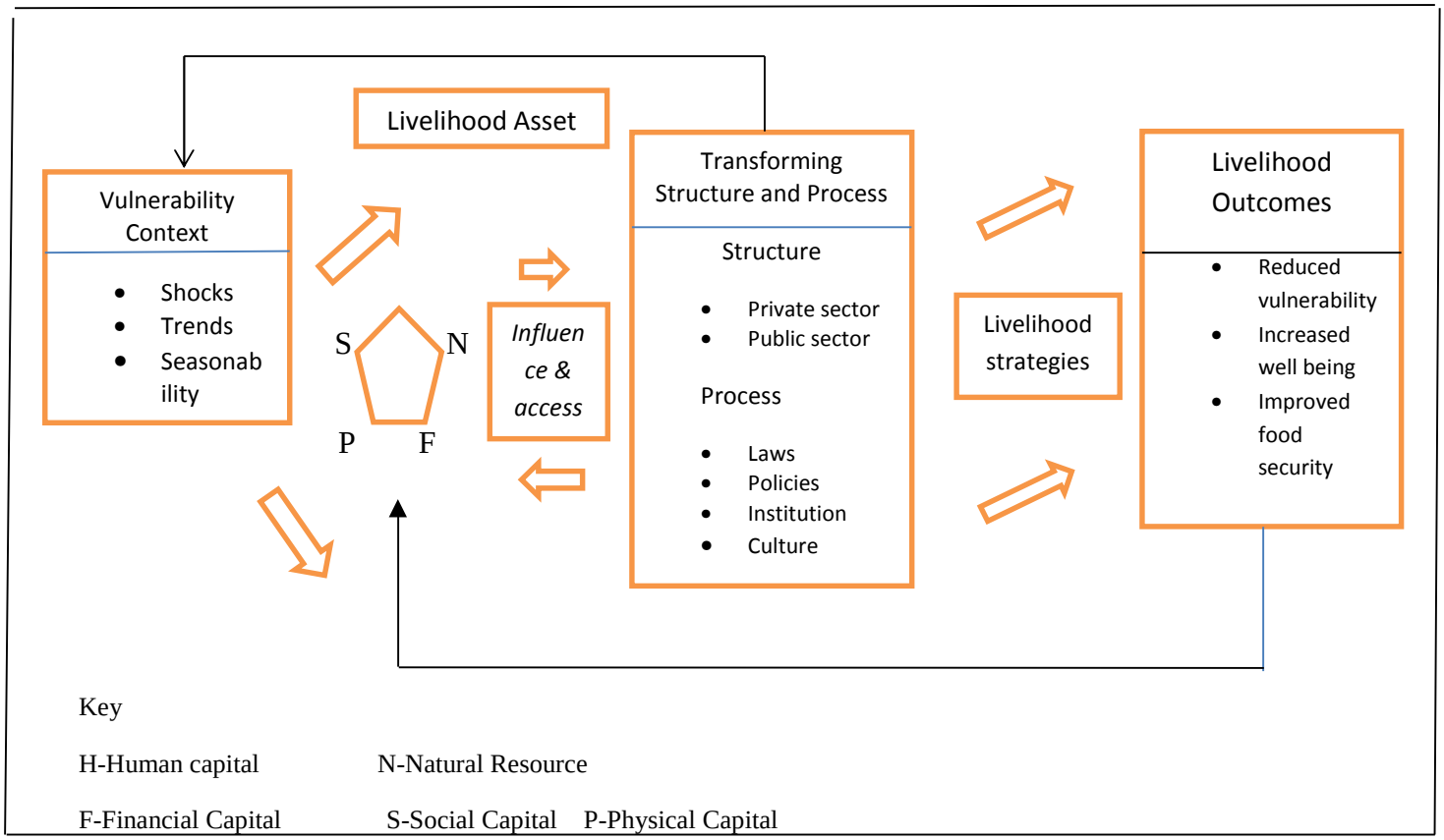
2.1 Theoretical literature review

This section deals about the theoretical framework supported by different authors regarding sustainable livelihood through rural-urban linkage.

2.1.1 Conceptual framework for sustainable livelihood strategy

The livelihoods framework provides a comprehensive and complex, approach to understanding how people make a living. It can be used as a loose guide to a range of issues which are important for livelihoods or it can be rigorously investigated in all its aspects (kanji et al, 2005).

Figure 2.1 Sustainable Livelihood Framework



Source: Adapted from DFID, 2002.

Livelihood approaches emphasizes understanding of the context with in which people live, the assets available for them, livelihood strategies they follow in the face of existing policies and institution, and livelihood outcomes they intend to achieve. The key question to be addressed in any analysis of livelihood is given a particular on text (of policy setting, politics, history, agro ecology and socio-economic conditions), what combination of livelihood strategies (agricultural intensification, livelihood assets and migration) with what outcomes? (Scoones, 1998).

2.1.2 Vulnerability context

The vulnerability context forms the external environment in which people exist and gain importance through direct impacts upon people's asset (Devereux, 2001). It comprises trends within which people pursue their livelihoods includes:

- trends: such as economic trends, resource trends
- shocks: such as conflict, economic shocks, health shocks and natural shocks, such as; earthquakes
- seasonality: seasonal fluctuations in prices, production, health, employment opportunities represents the part of the framework that lies furthest outside stakeholder's control

These factors can have a direct impact on people's assets and the options available to them to pursue beneficial livelihood assets. Shocks can destroy assets directly or force people to abandon or prematurely dispose of them as part of their coping strategies – for example selling off livestock in the face of drought or to pay for medical care. Not all trends and seasonality must be considered are negative; since they can move in favorable directions. For example new technologies, medical advances or positive economic trends can help improve people's

livelihoods. Thus, trends in new technologies or seasonality of prices could be used as opportunities to secure livelihoods.

The vulnerability context of people's livelihoods is usually influenced by external factors outside their direct control and is dependent on wider policies, institutions and processes. To support people to be more resilient to the negative effects of trends, shocks and seasonality, development policy-makers and practitioners can support people's access to assets and help ensure that critical policies, institutions and processes are responsive to the needs of the poor.

2.1.3 Livelihood resources/assets

The livelihood approaches is concerned first and foremost with people. So an accurate and realistic understanding of people's strength (here called "assets" or "capital") is crucial to analyze how they endeavor to convert their assets into positive livelihood outcomes (Bebbington,1999). People require a range of assets to achieve their self-defined goals, whereas no single capital endowment is sufficient to yield the desired outcomes on its own. Since the importance of the single categories varies in association to the local context, the asset pentagon offers a tool to visualize these settings and to demonstrate dynamical changes over time through constantly shifting shapes of the pentagon.

Natural capital

Different scholars define the term natural capital in different ways that suit into their intellectual and conceptual context. Among these scholars, Kollmair and Gamper are the ones with their own definition of the term and their understanding of the term is given as follows;

Natural capital is the term used for the natural resource stocks from which resource and service flow and it is of particular significance for all or part of their livelihoods from natural resource-based activities; for insistence, a good air and water quality correspond to a foundation for good health and other features of a livelihood. (Kollmair and Gamper, 2002)

Financial capital

Kollmair and Gamper (2002) and DFID (1999), argues that financial capital corresponds to the financial resource that people use to accomplish their livelihood objectives and it comprises the important availability of funds or equivalent; and it is a multipurpose as it can be converted in to other types of capital or it can be used for directly accomplishing a livelihood outcomes that allow people to adopt different livelihood strategies.

Two main source of financial capital can be identified:

- Available stocks comprising cash, bank deposits or liquid assets such as livestock and jewelry, not having liabilities attached and usually independent on third parties.
- Regular inflow of money comprising labor income, pension, or other transfers from the state, the remittance, which are mostly dependent on other and need to be reliable.

Among the five categories of assets financial capital is probably the most versatile as it can be converted into other types of capital or it can be used for direct achievement of livelihood outcomes. However, it tends to be the asset the least available for the poor, what makes other capitals important as substitutes.

Physical capital

Physical capital includes the fundamental needed to support livelihood, such as reasonable transport, sheltered and housings, sufficient water supply and sanitation, reasonably priced energy and access to information (DFID, 1999). Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively (DFID, 2000).

Human capital

Ferrington et al. (2002), DFID (1999), and Kollmair and Gamper (2002) argues that human capital refers to the skills, knowledge and ability to work. Human capital is highly dependent on sufficient nutrition, health care, safe environment conditions, and education. Poor people living in urban areas normally have better access to health service than their counterparts in rural areas. Urban areas have advantage in terms of access to education than rural areas and low ratios of primary school enrollment in rural areas and attributed to long distance to walk to school in rural areas.

In line with, Kollmair and Gamper, (2002) affirm that at household level, according to household size, skill levels, leadership potential, and health status, etc., human capital varies and appears to be an important factor in order to make use of any other type of asset.

> *Human capital (knowledge and labor or the ability to command labor) is required in order to make use of any of the four other types of assets. It is therefore necessary,*

though not on its own sufficient, for the achievement of positive livelihood outcomes DFID (1999).

Human capital appears in the generic framework as a livelihood asset, that is, as a building block or means of achieving livelihood outcomes. Its accumulation can also be an end in itself. Many people regard ill-health or lack of education as core dimensions of poverty and thus overcoming these conditions may be one of their primary livelihood objectives. Human capital (knowledge and labor or the ability to commanded labor) is required in order to make use of any of the four other type of assets. It is therefore necessary, though not on its own sufficient, for the achievement of positive livelihood outcomes, DFID (1999).

Social capital

Braun (2007), explain that, social capital is used in a community that brings people together for common purpose and associated with many desirable outcome such as faster social and economic development, greater helpfulness of political system, and better health. Besides, Kollimair and Gamper (2002) assert that in the context of the SLA it is the social resource upon which people draw in search of their livelihood outcomes such as network that adds to peoples trust and ability to cooperate or participate in membership of more formalized groups and their arrangements of rules, norms and sanctions.

Social capital includes the features of social organization, such as trust, social norms and networks that can improve the efficiency of society by facilitating coordinated action. Cooperation is often required between workers and managers, among political parties, between the government and private groups, between firms and voluntary organizations (Putnam, 1993).

Tewodaj (2006) asserts that, in most rural areas, social networks play a highly important role in mitigating the risks that agricultural households face, because formal insurance and credit market either absent or inaccessible to poor rural agents, the ties of common experience among members of a kinship group, ethnic group, or village enable household to transcend some of the information problems barring the development of impersonal market.

2.1.4. Transforming structure and processes

Transforming structure and processes represent the institutions, organization, policies and legislation that shape livelihoods. They are of central importance as they operate at all level and effectively determine access, terms of exchange between different types of capital, and returns to any given livelihood strategy Sheng , (nd). Structure can be described as the hardware (private and public organizations) "that set and implement policy and legislation, deliver service, purchase, trade and perform all manner of other functions that affect livelihoods" (DFID, 2000).

An absence of well working structures often constitutes an obstacle to sustainable development and makes simple asset creation difficult in case of adverse structure impending access to apply a certain livelihood strategy. In contrast to other approaches, where scarcity and underdevelopment was thought to be a problem of people not having enough due to lacking capital endowments, the SLA analyses it as a problem of access and the possibility to control the available resources that are often sufficiently at access and the possibility to control the available resources that are often sufficiently at disposition (Sen, 1981).

Complementary to structure, processes constitute the software determining the way in which structure and individuals operate and interact. There are many types of overlapping and conflicting processes operating at a variety of levels and like software, they are crucial and

complex. Important processes for livelihoods are for instance policies, legislation and institutions, but also culture and power relation. They may serve as incentives for people to make choices, they may be responsible for access to assets or they may enable stakeholders to transform and substitute one type of asset through another.

Transforming structure and processes occupy a central position in the framework and directly feedback to the vulnerability context, while influencing and determining ecological or economic trends through political structure, while mitigating or enforcing effects of shocks or keeping seasonably under control through working market structure; or they can restrict people's choice of livelihood strategies (e.g. caste system) and may thus be a direct impact on livelihood outcomes.

2.1.5. Livelihood strategies

Livelihood strategies comprise the range and combination of activities and choices that people undertake in order to achieve their livelihood goals. Within the sustainable livelihood framework, three broad groups of livelihood strategies are well- known. These are agricultural intensification (more output per unit area through capital investment or increase in labor input) or diversification i.e., it may involve developing a wide income earning portfolio to cover all types of shocks or stress jointly or the strategy may involve focusing on developing responses to handle a particular type of common shocks or stress though well- developed coping mechanisms, or move away and seek a livelihood, either for the time being or permanently) and migration (move away and seek a livelihood, either for the time being or forever), elsewhere or more commonly, follow a combination of strategies together or in sequence (Scoones, 1998).

According to DFID (2000), different livelihood activities have different requirements, but the general principle is that those who are amply endowed with assets are more likely to be able to make positive livelihood choices. That is, they will be choosing from a range of options in order to maximize their achievement of positive livelihood outcomes, rather than being forced into any given strategy because it is their only option.

2.1.6. Livelihood outcomes

Livelihood outcomes are the achievement of livelihood strategies, such as more income (e.g. cash), increased well-being (e.g. non material goods, like self-esteem, health status, accuses to service, sense of inclusion), reduced vulnerability (e.g. better resilience though increase in asset status), improved food security (e.g. increase in financial capital in order to buy food) and a more sustainable use of natural resource (e.g. appropriate property right). Outcomes help us to understand the output of the current configuration of factors within the livelihood framework; they demonstrate what motivates stakeholder to act as they do and what their priorities are (Scoones, 1998).

2.1.7 Options and Opportunities of Livelihood Strategies

According to Scoones (1998) and De Haan (1997), within the sustainable livelihoods framework, there broad groups of livelihood strategies are well-known: these are to cover variety of options open to rural people, either they gain more of livelihood from agriculture (including livestock background, aquaculture, forestry etc.) throughout the processes of agriculture intensification (more output per unit area through capital investment or increase in labor inputs), livelihood diversification (may involve developing a wide income earning portfolio to cover all types of shocks jointly or the strategy may involve focusing on developing responses to handle a

particular type of common shocks through well-developed coping mechanisms) and migration (move away and seek a livelihood, either for the time being or forever, elsewhere, or more commonly, follow a combination of strategies together or in sequence.

Farringto et.al, (2002) states that livelihood strategies are planed range of activities that designed to build asset bases and access to goods and services for expenditure like coping strategies designed to respond to shocks in the short period of time and adaptive strategies designed to improve circumstances in the long term. Besides, Ruijsink (2004) defines livelihood strategies as they are determined by the assets and opportunities available to communities as well as by the choices and preferences of men and women.

Agriculture Intensification

Agricultural intensification has been defined as 'increased average inputs of labor or capital on a smallholding, either cultivated land alone, or on cultivated and grazing land, for the purpose of increasing the value of output per hectare' (Tiffen et al. 1994) Agricultural intensification may occur as a result of; an increase in the gross output in fixed proportions due to inputs expanding proportionately without technological changes, a shift towards more valuable outputs or technical progress that raises land productivity. In practice the intensification process may occur as a combination of these, but the relative feasibility of the three components is likely to vary greatly in different areas.

For intensification to occur an increased demand for output is usually necessary. Alternatively a fall in the availability of a key factor such as land, water or labor may also necessitate intensification even if demand does not rise. (However, Pingali and Binswanger (1988) argue that there is a remarkable degree of substitutability of capital and labor) Increased demand may

be through population growth, in-migration or increased market demand in a country or region, or demand for higher value added output (such as fruit, vegetables etc.) when income per head grows. Agricultural intensification requires labor or capital to enable the increased inputs necessary to raise the value of output per hectare.

Livelihood diversification

The rural economy is not based solely on agriculture but rather on a diverse array of activities and enterprises. Much recent thinking on this subject is based on the concept of livelihood diversification as a survival strategy of rural households in developing countries (Ellis, 1999). Ellis (1999) defines livelihood diversification as the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living.

According to Mohammed (2007), the diversification of income source is increasingly essential in reducing the vulnerability of rural households and in many areas, that of urban household too. Three factors are important in facilitating income diversification. First, education is crucial to enter non-farm labor markets even basic literacy levels are necessary to achieve some success. Second, in many cases income diversification involves some mobility, most often circular migration. Some security of access to land in home areas is essential to ensure that people do not lose the farming component of their livelihood if they move away temporarily. Third, non-farm natural resources such as land and water that were previously used for farming.

Farming remains important but rural people are looking for diverse opportunities to increase and stabilize their incomes. The notion of livelihood diversity is based on framework that considers the activities of the rural poor as being determined by their portfolio of assets, including social,

human, financial, natural and physical capital (Carney, 1998). Activities and livelihood strategies therefore reflect farmers' assets and further influenced by the institutions that they interact with and broader economic trends such as market prices and shocks such as drought. Rising farm productivity is a driver of the rural non-farm economy, with linkage both farm production (processing and agro-industries) and consumption (increased demand for manufactured products and inputs) (Chapman and Tripp, 2004).

Similarly research on livelihood diversification to date has tended to be preoccupied with four main aspects. One is the determinants of diversification i.e. the factors that cause families to adopt more diverse livelihood strategies, rather than switching between full-time specialized occupations (Ellis, 1999). A second is the asset basis of livelihood that permits this diversification to be more or less easily accomplished (Dercon & Krishnan, 1996). A third is the income distribution effects of different patterns of diversification and the potential to identify different income sources as having equalizing or disequalizing effects on rural income. The fourth is weather diversification has beneficial or detrimental effects on farm output and productivity (Scoones 1998).

Adams (1995) asserts that, diversification can certainly improve food security in the face of high risks of drought or other climatic disturbances. The capability to diversify is enhanced by human capital in the form of higher education level. Education level is a critical determinant of the type of labor markets in which diversification takes place. Those with more education can gain jobs in skilled and salaried labor markets, while those with less education must often make do with casual, unskilled and part-time work in low wage labor markets. Whether participation in non-farm labor markets equalizes or disequalizes rural incomes depends on both assets and activity consideration.

Migration

Migration is defined within a defined time period. A movement from one administrative area to another is defined as migration only if it occurs within a certain time frame, say three, six months, a year etc. or if it is determined that the move (mobility) is made with the intention of changing place of residence even if it is less than the established time frame. It is, therefore, vital to define between different migration causes (e.g voluntary and involuntary movement), effects (such as reinvestment in agriculture, enterprises or consumption at the home or migration site) and movement patterns (Scoones, 1998).

2.1.8. Rural livelihood and rural urban linkages

According to Mohammdes (2007), the majority of the rural people depend on a single productive activity, mainly farming. Unlike most developing countries, only 35% of rural respondents in Ethiopia rely on a combination of farming and other income earning activities. Access to land and capital are important in determining which groups are more likely to engage in farming, non-farm activities, migration, or multiple activities. The rich and elderly with access to land involve only in crop production, while the rich and the young landless and young landowners derive their income from more than one activity, which producing high returns. Likewise, the poor with land engage in both farming and low-return activities. However, landless poor men and women engage only in less remunerative non-farm activities. In general, two types of flows can be distinguished. The first type is special, which includes flows of people, goods, money, technology, knowledge, information, and waste. In biophysical perspectives, flows of water, biomass products and nutrients are relevant. The second type is sectorial, which includes flows

of agricultural products going to urban and peri-urban areas, and goods from the urban manufacturing areas going to more rural areas (Tacoli,1998)

Through goods and factors can move from one area to the other, such movement involve costs. Such costs may be information costs, transport costs, or policy-induced costs. Such costs may be the result of non-economic or historical factors, and as these costs are reduced, spatial integration will increase, resulting in increasing trade between rural and urban areas and subsequently, an increased level of rural urban linkage (Carney 2002).

2.1.9 Theories related to sustainable livelihood

Modernization Theory

According to modernization theory change from traditional to modernization was to occur through the definition of capital, technology, values, institutional arrangements and political beliefs. From this point of view, the industrialization in the West was believed to be model that should emulate. The notation of rural-urban areas duality was derived from conformity literature of urban developments that consider urban areas as the centers of urbanization and development and consider rural areas as zone of economic backwardness and cultural tradition (Slater, 1986) sited in Tegegne (1999).

On the other side the theory put emphasis on access to basic needs and provision of universal coverage of primary school. This indicates that the need of rural poor people should be meet and its implication are agricultural growth is the engine for growth. This growth is not only providing food but also stimulate demand for industrial growth and urban development. So that the augment based on modernization theory that could imply urban centers brought about the growth of rural development. This is the process that brings about the growth of urban and rural linkage

concept as one strategy to realize economic and social development. In the late 1950s and early 1960s export oriented industries in large cities as the engine of growth and trickle down effects expected to stimulate agricultural production. But the result is not as expected. Therefore during the late of 1960s and early 1970s agriculture was the driving force for development for poor rural economies (Tegegne, 2005).

Central Place Theory

Walter Christaller (1972) achieved the central place theory to explain how urban settlements are formed and spaced out relatively to each other. The main premises of Christaller's theory was that if centralization of the mass around the nucleus is an elementary forms of order of each other than the same centralized principle can be equated in urban settlements. The size of the center is determined by the types of goods and services it produced, where by the large settlements (few in numbers) produces goods and services of 'higher order' (which require large market both in income and population therefore the manner of specialization) and smaller settlement produces goods and services of 'lower order'

Prominent Theory

Davis (2004) identified the debt of the nature of the urban and rural relation was hold on the prominent theory and plan since 1950s. According to this study, two reason for the renewed interests shown by policy makers. The increasing priorities in the market based strategy which place their emphasis on export oriented agricultural production and rely on efficient economic linkage connecting producers with external markets relation between urban and rural areas.

2.2. Empirical literature review

This section deals with the empirical framework supported by different researchers regarding sustainable livelihood through rural-urban linkage. Soumyendra et al (2010) examine the impact of livelihood of diversification on occupation of the household in India. The analysis shows that impact of different livelihood diversification on the occupation of the household is positive and significant but the impact differs between the type of occupation. Relatively individual working mainly on forming activity y would earn less income than other. The paper also analyses the relationship between livelihood diversification and impact of occupation of the household on income the impact of occupation of the household is dominate on income.

Wintes et al (2005) examine the determinations of on-form diversity level of agriculture in Peru with a specific focus the household decision to diversity agricultural income sources, they measure diversity using the variety Count and Shonnon indices and empirically test diversity outcomes on human capital variable of the household and rural development variable includes saving, wealth index, non-form income share, access to credit and goods markets Wealth index, access to credit and saving are found to be positive associated with diversity. Agricultural production and off-form income both negatively affect diversity outcome

Stephon (1990) based on study livelihood strategy and rural-urban linkage in Nigeria. The researcher used 810 sample household based on livelihood strategy. Multinomial logit model used to determine the factor affecting livelihood and rural-urban linkage. The model tries to explain the dependent variable livelihood strategy which are regressed on independent variable; the level of education of the household; value of physical asset and income. The researcher found that there is a positive relationship between the level of education of the house hold and

the dependent variable. Mutenje (2010) conducted a research in Zimbabwe. The study is interested in rural urban linkage to manage sustainable livelihood. The researcher used 200 household sample household based on sustainable livelihood. The logit model used shows that the level educations of the household head and value of physical assets are the main determination of sustainable livelihood.

Dilruba (2000) based on study Rural livelihood diversification in west Bengal. The researcher used 100 household based on livelihood diversification. Multiple regression model is used to determine the factor effecting livelihood diversification. The model tries to explain dependent variable, livelihood diversification which are regressed on independent variable; age, education level, social status, asset position, access to credit, and rural infrastructure. Education, family size, access to credit is significant at 5%. The relationship found that there is a positive relationship between education, family size, access to credit service and livelihood diversification.

Stifle (2010) analyze livelihood strategies, non-form economy and welfare of manages car using 2005 nationally representation integrated household survey data. The research paper on household livelihood strategies, suggest household with less diversity agricultural activity will remain on the form on the other hand those with more with the household livelihood choice models, diversification is associated with higher probability of agricultural diversification has positive relationship with livelihood strategies. The paper finally conclude that agricultural diversification is an important factor associated on only farm employment opportunities for the rural population in Madagascar. But also with higher earning for those employed in the form sector individuals and household with little or no agricultural diversification face barriers not

only to minimize livelihood improvements but also to reaping the full benefits of the potentially high livelihood improvements.

Tegene (2005) examine the nature and magnitude of rural-urban linkage in Ethiopia. The study found out that the farm sector in the study areas shows consumption linkages in forms of expenditure on urban goods and selected social service. In addition, the limited nature of finance to rural areas from commercial and development banks reduce the development of rural areas and hence limit the linkage of urban areas with the rural areas

Solomon (2003) conducted a research on livelihood strategies of the rural and urban people in Ethiopia. The paper examine the ways in which different household rely on verity combination of activities, the factors affecting each strategy and their implication for the rural urban linkage. The finding indicates that though rural and urban households derive a larger proportion of their income their livelihood form different sources. It was also found that rural-urban linkage would be enhanced by improvement in the livelihood strategy of the people. through supporting urban-rural non-form activates and informal activites in small towns, input marketing and distribution, supporting agricultural intensification, strengthening physical and market infrastructure, improving the financial sector and supporting the development of agro processing industries.

Gebremedhin et al (2005) empherically test household characteristics, market access, modern verity crop adaption and village and regional factors on inter and intra-specific crop diversity in Ethiopia. The results showed cultivation of modern verities of crops has statically significant impact on diversity level of crops grown at household level. Mohamed (2007) analyze livelihood strategies and its implication for rural-urban linkage in Ethiopia. The study used cross-sectional data from household survey conducted in Ethiopia in 2009. A logit model was used in

order to see the livelihood strategies and its implication for rural-urban linkage. The researcher found that there is a positive relationship between livelihood strategies and access to credit service.

Livingston (1997) examine the impact of agriculture agro-industries in Ethiopia with a specific focus on types of agriculture and the degree of intensification. The researcher found that agro-industries are the main types of industries with which agriculture have significant forward linkage .One of the reasons for such weak agriculture and industry linkage in terms of processing agriculture raw material is the subsistence nature of agriculture, which is not capable of producing surplus output to be used as industrial raw material. In addition to this, Moges and Gebeyehu (2006) found that the subsistence nature of agriculture in Ethiopia not only limits the flow of goods from rural areas to urban areas but also has evolved into a constraint of the flow of goods from urban areas to rural areas. Subsistence agriculture creates poor markets for urban products and services. Purchase of manufacturing outputs and use of urban services are very limited in rural areas because people have very little to sell to generate money to pay for urban products and services. In addition to this, subsistence agriculture creates poor markets for urban products and service. The use of manufacturing farm implements and inputs by the agricultural sector is another form of linkage that can exist between industry and agriculture. In Ethiopia, however, this type of linkage is low. In addition to the snowballing impact of the subsistence nature of production, the fragile nature the market, lack of efficient domestic transport, and absence of competitive wholesale and retail agricultural inputs also impacts the flow of goods and service.

Wolday (2002) assess the financial flow between rural and urban areas in Ethiopia. The finding shows that financial intermediaries are important agents in streaming the flow of finance

particularly from urban and rural. In this regard, the role of formal banks is limited since banks by nature will not be interested to finance rural people because they are believed to have high risks and transaction costs. This is also compounded by supervisory and capital adequacy requirements that penalize banks for lending to enterprises that lack traditional collateral.

Tacoli (2002) found that Remittance from urban migrants is another form of rural-urban finance linkage. Restore flows between urban and rural present is significant form of linkage in Ethiopia. The researcher also found that Agro-industries are the main types of industries with which agriculture will have significant forward linkage. One of the reasons for such weak agriculture and industry linkage in terms of processing agriculture raw material is the subsistence nature of agriculture, which is not capable of producing surplus output to be used as industrial raw material. The other reason for the subsistence nature of agriculture is that agriculture in Ethiopia is rain-fed, subsistence and employs traditional tools and implements. The tools used by farmers are mostly homemade except the tip of the plough, which might be done by a blacksmith. There is no use of wheel driven transportation system that might require some transportation facilities. Agriculture depends on rainfall and there is negligible irrigation that might demand pumps and pump related equipment's.

CHAPTER THREE: DATA AND METHODOLOGY

3.1. Description of the study area

Ethiopia is divided in to nine regional states which are further structured into zone and districts. The districts are further classified into kebeles. The study is conducted in Guba Lafito district, South Wollo Zone of the Amhara National Regional State (ANRS) which is located in the northern east part of Ethiopia. It is one of the 22 Administrative districts of the South Wollo administrative zone of the Amhara National Regional State (ANRS).

Guba Lafito district is 28,931 hectars wide. The topography of the district can be described as rugged and broken. Elevation ranges from 1400 m.a.s.l up to 2928 m.a.s.l. The average annual precipitation and the average monthly temperature were estimated to be 1030 mm and 21 degree Celsius respectively. The land use features that cover the area are forest and bush land, built up area, barren land, agricultural land and water covered land. The land use feature that take up the largest part of the study area are agricultural land with a total area of 18,676 hectare and a share of 64% out of the total area. The second major land use is forest and bush land as it accounts for 17.9 % of the total area. In the district there are water resources available which cover about 2100 hectare or 7.2%. Built up area and barren land cover 1805 hectare and 1150 hectare respectively.

The total population of Guba Lafito district was about 108,806. About 51.37% of this population was male while the remaining 48.63% is female. The rural community makes up 86.3% of the population while the urban population makes up only 13.7% of the district population. Out of the total rural population 51.7% are male and 48.3% are female. According to the same source, the

population is young, as children less than five years of age constitute 37.4% and 21.3% of the urban and the rural population respectively. (CSA, 2009)

The district is divided into three Agro-ecological zones, namely Dega (highland), Woinadega (medium land), and Kolla (lowland). As the largest portion of the district is rural, most of the population relies on agricultural activities. 92.1% of the total population of the district relies on agricultural activities. The second major income source is nonfarm employment. Different non-farm activities are engaged in the district; such as, daily labor, petty trade, weaving and the like. Tuesday market of Woldia town is a big market with very distinct section for cereals (like sorghum, teff and maize), fruits, vegetables, coffee, electronic equipment, textiles, hand tools, wood and etc. The village markets are usually short duration and are located in very remote areas of the district.

3.2. Data type and sources

Here in the study quantitative as well as qualitative research methodology is employed and a cross sectional research design is applied. Data is collected at one point in time from a sample selected to describe some larger population. The data is collected from primary and secondary sources. Primary data is collected by administrating structured and unstructured questioners. Secondary sources include published and unpublished material about livelihood strategies and livelihood resources. These materials is collected from the district level office of agriculture and rural development, the zone level department of agriculture and rural development, the district micro finance institution and the kebele level office of administration. The unit of analysis is household heads of the selected kebeles.

3.3. Sampling and Survey design

3.3.1 Population and sample

In this study, regarding the population and sampling techniques, the study is focused on Guba Lafito district which comprises 15 kebeles which are (Hara, Lasitegerado, Dorogibir, Dihawedih, Amayemicha, Jarissa, Gedober, Weyiniye, Wiraf, Debot, Geshober, Zewergotera, Keyamba, Lidetakereye, Widimen). Among these, the researcher is purposively selects 6 of them namely Hara, Dorogibir, Amayemicha, Wiraf, Gedober and Weyiniye. This is because first, these kebeles has better flow of capital and goods which are important for rural urban linkage as compared to other kebele's. The second reason is their convenience for the researcher in reaching the kebeles and their closeness to the main urban city i.e. Woldia. Within these 6 selected kebeles the researcher applied simple random sampling method in order to select the respondents who are the household in these kebeles.

There are several methods for determine the sample size of respondents from the finite population. The sample size of the study is determined based on Kothari formula of (2004) as follows:

$$n= \frac{z^2.p.q.N}{e^2\,(N-1)+z^2.p.q}$$

Where, N= total size of household population

n= the sample size for finite population

p= sample proportion of successes (frequency estimated for a sample of size n), where p is 0.5 which is taken for all developing country.

q= 1-p

z= the value of the standard derivate at 93% confidence level

e= acceptable error

Thus, N= 8182 p= 0.5 q= 0.5 z=1.81 e=0.07

Therefore, $n= \frac{1.81^2.(0.5).(0.5).8182}{0.07^2.(8182-1)+1.81^2(0.5).(0.5)}$

n= 164

The sample size allotted to the 6 kebeles is based on proportionate sampling method. Through this method each kebeles is fairly represented. Proportional allocation of the sample is made on the basis of size of households. The required sample households are selected randomly within each kebele, because every member of the population has an equal chance of inclusion in the sample.

Table 3.1 Sample distribution and population of the study area

Kebele	Total households of kebele	Household sample size	Type of sampling
Hara	1,348	27	Proportionate sampling method
Doro Gibir	1,016	20	Proportionate sampling method
Wiraf	1,193	24	Proportionate sampling method
Gedo Ber	1,755	35	Proportionate sampling method
Amayemicha	1,351	27	Proportionate sampling method
Weyiniye	1,519	31	Proportionate sampling method
Total	8,182	164	

3.3.2. Survey design

Both qualitative and quantitative methods were used to collect data. The qualitative method includes interviews with farmers. The quantitative method includes 164 rural household surveys using questionnaires. The dataset contains detailed information collected using questionnaire about the household head individual characteristics (age, gender, marital status, education), household characteristics, (family size), household access to capital (livestock, credit), household occupation (agriculture, non-agriculture) and local condition (access to market, infrastructure). The qualitative data includes information about farmer's satisfaction level (marketing, credit system). The qualitative information was gathered through review of government policy documents, related information available in the study area and previous studies.

To improve the quality of the survey three enumerators were trained. Despite this careful data collection it is reasonable to expect some underestimation of the actual income and asset; this is due to the sensitive nature of the information on income and assets. These are however, natural shortcomings and the data will give a reasonable picture of the research

3.4. Data collection procedure

Respondents in the study area are homogenous in terms of their direct involvement in rural-urban linkage and their livelihood strategies. Furthermore the households that have lived in the district manifest similar production activity. Based on these reasons the respondents are selected by using simple random sampling method and three enumerators are involved in the questionnaire administration process and the role of the researcher is supervising them

3.4.1 Data collection tools

Data is collected from the sample group through questionnaire and it is accomplished by household in the 6 kebeles and is evaluated the livelihood resources, the option and opportunities of household livelihood strategies, the extent of linkages for the rural households to the urban. Questionnaire is the main source of information to collect data from the rural household of the kebele. Totally questionnaires are administered to 164 households of the selected kebele residents.

3.5. Methods of data analysis

Qualitative descriptions as well as quantitative analysis techniques were employed to analyze the data collected. That means it is a confluence of both empirical and qualitative methods. The study used descriptive statistical tools as well as econometric model for data analysis.

3.5.1. Descriptive Statistics

Descriptive statistics are expressed in terms of percentages, ratio, and average (mean) as measures of central tendencies. Results are also presented in the form of tables.

3.5.2. Econometrics model

Among the different econometric model estimation techniques, logit model is the most commonly preferred and used in examining the livelihood of households. In Gujarati (2003), logit or probit models are widely applied to analysis of determinants of participation in any program where the dependent variable is limited dependent variable. The logit model for this particular study was selected for the following reasons. First, Green (2003) and Alderic and Nelson (1984) argues that although both models results with similar outputs, the logit model is easier in estimation and simple to comprehend. Second, the data is dichotomous and therefore,

Logit is the best to use. Third, several studies (Beyene, 2008; David, 2010) have used this model while dealing with similar topics. Hence, the dependent variable of the interest (means of livelihood of households) takes 1 if households' means of livelihood is on farm and 0 otherwise, binary logit model is employed in the study.

3.5.3. Model Specification

An appropriate measure of the impact of rural urban linkage on the livelihood of rural households is captured through dichotomous dependent variable named means of livelihoods (it takes 1 if it is livelihood of the household is based on farm activities and 0 otherwise). The functional relationship between the probability of improvement in livelihood and explanatory variables is specified as;

$$LH = f(Age, Sex, MS, HHS, E, O, C, Y, S, I) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where, LH= Means of livelihoods of the household head

Age= Age of the household head

Sex = Sex of the household head

C = Access to Credit

Y= Annual gross income

S = Saving

MS= Martial Status of household head

HHS= Household Size

E = Education Status of the household

O = Occupation of the household head

I= Inputs used by the rural household head

The explanatory variables that affect the livelihood status of the household are expressed both qualitatively and quantitatively. Where the dependent variable is dichotomous, many studies show that Logit model is appropriate as we stated above. Therefore, following Green (2003), Wooldridge, (1999) and Long (1997), the logit model for examining the livelihood of rural households can be specified as:

$$P(Y_i = 1) = \frac{1}{1+e^{-(\beta X_i)}} \text{----------} \textbf{(2)}$$

$$P(Y_i = 1) = \frac{1}{1+e^{-LM_i}} = \frac{e^{LM_i}}{1+e^{LM_i}} \text{----------} \textbf{(3)}$$

LM_i=

$$\beta_0 + \beta_1 Age_{1i} + \beta_2 Sex_{2i} + \beta_3 MS_{3i} + \beta_4 HHS_{4i} + \beta_5 E_{5i} + \beta_6 O_{6i} + \beta_7 C_{7i} + \beta_8 Y_{8i} + \beta_9 S_{9i} + \beta_{10} I_{10i}$$

$$= \beta X_i \text{----------} \textbf{(4)}$$

Where $P(Y_i = 1)$ is the probability that the means of livelihood is farm activity, LM_i= the function of a vector of n explanatory variables, e = represents the base of natural logarithms and β's = Parameters

Equation (3) is the (cumulative) logistic distribution function. If $P(Y_i = 1)$ is the probability that the means of livelihood is farm activity, then $1 - P(Y_i = 1)$ represents the probability that the means of livelihood is non-farm activity and is expressed as:

$$P(Y_i = 0) = 1 - P(Y_i = 1) = 1 - \frac{1}{1+e^{-LM_i}} = \frac{1}{1+e^{LM_i}} \text{----------} \textbf{(5)}$$

$$\frac{P(Y_i=1)}{1-P(Y_i=1)} = \frac{e^{LM_i}}{1+e^{LM_i}} = e^{LM_i} \text{----------} \textbf{(6)}$$

Equation (6) simply is the odds ratio: the ratio of the probability that the means of livelihood of the household will be farm activity to the probability that it will be non-farm activity. Taking the natural log of equation(6), we obtain:

$L_i = ln\left(\frac{P(Y_i=1)}{1-P(Y_i=1)}\right)=$

$$LM_i = \beta_0 + \beta_1 Age_{1i} + \beta_2 Sex_{2i} + \beta_3 MS_{3i} + \beta_4 HHS_{4i} + \beta_5 E_{5i} + \beta_6 O_{6i} + \beta_7 C_{7i} + \beta_8 Y_{8i} + \beta_9 S_{9i} + \beta_{10} I_{10i}$$

---------- **(7)**

Where: L_i is the log of the odds ratio which is not only linear in the explanatory variables but in the parameters also. Thus introducing the stochastic error term (u_i), the logit model can be written as

$$LM_i = \beta_0 + \beta_1 Age_{1i} + \beta_2 Sex_{2i} + \beta_3 MS_{3i} + \beta_4 HHS_{4i} + \beta_5 E_{5i} + \beta_6 O_{6i} + \beta_7 C_{7i} + \beta_8 Y_{8i} + \beta_9 S_{9i} + \beta_{10} I_{10i} + u_i$$

---------- **(8)**

Where, β_0 is the constant term and β_i's are coefficients to be estimated.

u_i= Error/Stochastic term

i = Individuals/Respondents in the study in which i =1, 2, 3, . . ., n =164

Finally, logistic regression model as an approach to prediction, like Ordinary Least Squares (OLS) regression, is employed in predicting a dichotomous outcome. Because the dependent variable is not a continuous one, the goal of logistic regression is a bit different, because we are predicting the likelihood that the dependent variable is equal to 1 (rather than 0) given certain values of the explanatory variables. That is, if the explanatory and the dependent variable have a positive linear relationship, the probability that means of likelihood for the households equal to one will increase as values of the explanatory variables increase. From equation (8), it is possible

to predict a probability that the household's means of livelihood is farm activity and estimates that means of livelihood function.

$$P(Y_i = 1) = \emptyset(X_i\beta) = \emptyset(LM_i)$$

$$\frac{e^{LM_i}}{1+e^{LM_i}} \text{----------(9)}$$

Thus, the probability that the means of household head in relation with the explanatory variables is explained based on the sign of the coefficients. The parameter tells how the means of livelihood of the household changes as explanatory variables changes. Therefore, descriptive analysis and Logistic regression model have been made in this regard to the means of livelihood of household head due to changes in the explanatory variables in the model. The analysis of the assessment is based on the following variables of interest.

3.6. Description of Variable

The following variables are specified for the above Econometric (Logit) model. The variables can be specified as follows:

- ***Means of Livelihood of the household head (LM):*** is a dependent variable (variable of interest) of the study. It is a dummy variable which takes value 1 for those households whose means of livelihood is farm activity and 0 otherwise.

The explanatory variables are specified as follows:

1) Age of the household head (Age): is a variable which is expected to have a negative relationship to the variable of interest.

2) Sex of the household head (Sex): is dummy variable which takes value 1 if the household head is male, 0 otherwise. Being male is expected to improve means of livelihood of the rural household.

3) Family size of the household (HH size): is the total size of the family. The researchers expect a negative sign if a household has larger family size.

4) Saving (S): is also a dummy variable which takes 1 if the household head saves and 0 otherwise. Saving habit is considered as one of the way to improve the livelihoods of the rural households. Since, saving is assumed as future transferred consumption, what is saved today have benefit to improve the livelihoods of the households by being invested in income generating activities.

5) Annual gross income (Y): is the total income of the household gained from all family members and from different income sources per year. It is expected that increase in the annual income of the household improves the livelihoods of the household.

6) Access to Credit (C): the livelihood of the household head is also expected to depend of the availability of the credit. It is another dummy variable with value 1 if the household has access to the credit and 0 otherwise. Credit is often viewed as an entry point for initiating development activities among the poor. Credit delivers a range of particular benefits when targeted to low-income household. It is agreeable that credit represents a form of economic empowerment that can enhance household's self–confidence and status within the family and provider of a valuable cash resource to the household economy.

7) Occupational type (O): is a type of job the household had. It may be either agriculture or non- agriculture.

8) Marital status of the household head (MS): is a dummy variable which may be married, single, widowed and divorced.

9) Educational level of the household head (E): is a dummy variable which ranges from illiterate to Degree holders.

10) Inputs used by the household head (I): It is the type of input that the household head used. There may be more than one type of inputs used by household. These can be fertilizers, improved seeds, pesticides, herbicides and the combination of them.

CHAPTER FOUR: RESULT AND DISCUSSION

This chapter deals with the analysis of the survey data and interpretation of the results of the analysis. Specifically, sustainable rural livelihoods through rural urban linkage of the sample household are analyzed and discussed using descriptive and econometrics analysis.

4.1. Descriptive Analysis

4.1.1. Demographic Characteristics of the households

Demographic characteristics of the household are basic determinants for means of livelihood. Some of the household characteristics included in this study are age of household head, household size and marital status of the household head.

Table 4.1. Age, Gender and Marital Status of Household Head Cross Tabulation.

Age	Sex		Marital Status of household Head				Total
	Male	Female	Single	Married	Divorced	Window	
18-30	Male Female		2 0	14 1	1 0		17 1
31-45	Male Female			74 2	2 7	2 5	78 14
46-60	Male Female			47 0		1 3	48 3
≥61	Male Female			3 0			3
	Total		2	141	10	11	164

Source: Own computation based on the survey data

Age of the household Head

The age structure is an important demographic characteristic of the sample household which has a significant implication on the economic activities of the household. Table 4.1 illustrates that,

about 11% of the respondents were in the age group of 16-30, about 56.1% of the respondents were in the age group of 31-45 this age group is productive and it have a positive implication on the development of the country, about 31.1% of the respondent were in the age group of 46-60, the rest (1.8%) of the respondent were in the age group of ≥61. There is a single person who is a household head at the age of 18 and a single person who is a household head at the age of 76. The average age of the household heads is 42.5

Sex of the household head

The gender structure of the sample households is that about 89.1% of the respondents were male rural household heads and 10.9% of the respondents were female rural household heads.

Marital status of the household head

The sample of the household head shows that 85.9% of the respondents are married and the rest are categorized in to single (1.2%), divorced (6.1%) and window (6.7%).

Household size

The household size accounts for the number of individuals in the house. From large family size there is a chance to have a better means of livelihood. The average household size of the sample households is 5.5. The minimum and maximum household size is one and eleven respectively. Majority of the sample respondents were within the family size of 1-5, which accounts 67.5%. This shows that in the area, 5 people live per household on average.

4.1.2. Education of the household

The rural households of Ethiopia have access to both formal and non-formal educational in their surroundings. From the total of 164 household heads, 38 household heads (23.2%) did not have any formal or non-formal education. The remaining 76.8% have either formal or non-forma education.

Table 4.2. Education level of the hou sehold head

Education Level	Number of household heads	Percent
Not educated	38	23.2
Grade 1-3	24	14.6
Grade 4-8	75	45.7
Grade 9-12	16	9.8
Above secondary education	4	2.4
Some church/mosque school	7	4.3
Total	164	100

Source: Own computation based on the survey data

Table 4.2 depicts that 23.2% of the household heads do not have any education. Even those who have education are concentrated around grade 1-3 and grade 4-8. The numbers of household heads who have the next higher education reduce as the education level increases. These show that most of the rural households of Ethiopia are not educated. If they are, it is mostly adult and primary education. Only few household heads have secondary and above secondary education. School is one of the institutions which give social services for both rural and urban peoples.

Educational attainments have positive implication on the rural urban linkages in particular and on economic and social development in general. Educated people are mostly engaged in non-agricultural activities. The capability to diversify is enhanced by human capital in the form of higher education level (Dercon & Krishnan, 1996).

Education level is a critical determinant of the type of labor markets, while those with less education most often do with causal, unskilled and part-time work in low wage labor markets. Involvement in self-employment is usually most likely for those with some basic education, but is lower for both the illiterate and those with high levels of education (Lanjouw, 2007)

4.1.3 Occupation of Rural Households

Most of the households in Guba Lafito district are subsistence-oriented, with labor markets almost absent. The majority of households depend on self-employment on their farm using own labor resources. The agricultural productivity of the area is low in such a way that most of the production is used for consumption

Table 4.3. Structure of primary and secondary occupation of rural households

	Agriculture				Non-Agriculture								Total			
	Farming		Livestock		Daily Labour		Petty Trade		Pottery		Other		Agriculture		Non-Agriculture	
	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%
Primary Occupation	153	93.3	-	-	2	1.2	5	3	-	-	4	2.4	153	93.3	11	6.7
Secondary Occupation	87	53	21	12.9	11	6.7	18	11	8	4.9	19	11.6	108	65.9	56	34.1

Source: Own computation based on the survey data

The primary occupation of the households is agriculture; farming is the main productive activity for 93.3% of the people in the study area. Non-agricultural activity accounts 6.7% of the respondents.

Regarding secondary occupation 65.9% of the population is engaged in agricultural activities in livestock, dairy production and production of fruit and vegetable activities. The rest 34.1% are engaged in petty trade, daily laborer, weaving and others activities.

Trade in the study area is not only bound within the district locality but also in other places out of the study area. Traded items such as cereals, fruit, vegetable and livestock are bought on a market day and are sold on the same or another market day or at another place.

Trading activities are an important source of income for framers in the study area. Group discussion revealed that there were several part-time trading farmers who buy various consumer items such as salt, pepper, spices, and clothes from distant areas and sell them to the local community.

Table 4.4. Descriptive statistics of demographic characteristics

Variable	Description	Mean	Min	Max
HHage	Age of the household head	42.317	18	76
HHsex	Sex of the household head, 1= male or otherwise	0.8902	0	1
Mhhead	Marital status of household head, 1= married or otherwise	0.8597	0	1
HHsize	Number of individual in the house	5.1097	1	10
HHoccp	Types of occupation the household had	1.5914	0	1

Dgrade1-3	=1 if household head has adult litracy program	0.1463	0	1
Dgrade 4-8	=1 if household head has primary education	0.4573	0	1
Dgrade9-10	=1 if household head has secondary education	0.0975	0	1
Dabsecondedu	=1 if household head has above secondary education	0.0243	0	1
Dcedu	=1 if household head has church/mosque school	0.0427	0	1

Source: Own computation based on the survey data

4.1.4. Livelihood Assets

4.1.4.1. Access to credit service and source of credit institution

The nature of rural-urban linkage depends on the size of credit, the place where credit is available, the structure of social capital to undertake agriculture and non-farm activities and migration. The survey result shows that from the sample respondents 57.3% were access to credit service. 42.7% of the sample respondents have no access to credit service. There major reason were there having no intention to take the credit and afraid of the interest rate.

The respondents indicate that household with access to credit service have follow alternative livelihood strategies and engaged in diversified activities this reduce the dependence of people on natural resource and increase the capacity of the use of different agricultural inputs. So, using different agricultural inputs increase the amount of productivity and producers surplus to market more than they used for consumption.

Most of the resent credit emphasis has been on small-scale group lending schemes to enable the households to widen their income earning options. There are now many different models and

experiments in micro credit provision from which to adopt and to choose appropriate elements for local solutions. Credit policy is not only about micro credit schemes, many of which depend heavily for their sustainability on the continued involvement of NGOs. There is also a need to facilitate the spread of rural financial institution that are self-sustaining on the basis of saving and loans organized according to conventional banking criteria (Ellis,1999). This requires more effort from central government to put in place the appropriate regulatory and guarantee provisions that would encourage the formation of such institutions and ensure confidence in them in the long term.

Poor access to credit is another constraint to farming and non-farming activities in rural areas as well as urban areas. The respondents who have access to credit service, the major sources of the credit institution is Amhara Credit and Saving Institution (ACSI) which accounts 34.1%, about 23.2% of the respondents were getting credit service from Cooperatives and 42.7% of the respondents were missing the credit institution. The households who borrow the money have used it for different purposes like petty trade, buying livestock, purchase of agricultural inputs and others.(Own survey, 2014)

4.1.4.2 Saving of Money and amount of money saved

Currently the direction of the government gives due emphasis on the saving culture of the people. The district cooperative office has a plan for the coming five years in the growth and transformation period the coverage of people who are members of saving and credit cooperatives to be raised to 95%. As stated before many studies reveal that availability of finance play important role, such as engagement of people in diversified activities and in facilitating rural-urban linkage. Among the sample respondents 56.1% of them were saving money. The survey

result also shows that from the total respondents who have saving of money 37.8% were categorized within 1-8000. This implies that more than half of the respondents have the habit of saving of money.

4.1.4.3. Annual Household Gross Income

The survey result shows that from the total rural households with annual gross income categorized within 8,001-12,000 are 22% which are large as compared to other scores. Many studies revealed that people who have engaged in diversified activities become better income as compared to people who have not engaged in diversified activities the same is true for this analysis. The respondents with annual household gross income categorize within 21,001 are 11.5% which are lower as compared to other scores.

Table 4.5. Descriptive statistics

Variable	Description	Mean	Min	Max
Acredit	=1 if households has Access to credit servce	0.5670	0	1
Savm	Saving of money	2154.27	0	13,000
Anuinco	Annual gross income of the household	2,450.34	0	27,000

Source: Own computation based on the survey data

4.1.4.4. Physical Capital

Rural-urban linkages are highly influenced by the availability of different types of infrastructure in a given area. Physical, social and economic infrastructure plays an important role in improving rural productivity and access to market. The availability and affordability of physical infrastructure is an important in connecting producers to local urban center. (Megersa, 2007).

Therefore rural producer's physical access to market and the extent of this urban centers connection to wider networks of Regional, National and International urban centers are dependent up on the availability of infrastructure.

Physical Infrastructure

Road is one type of physical capital which plays an important role in rural-urban linkage. Rural household needs road infrastructure for marketing agricultural output and to get service from the urban center. The returns to road investments vary by region; this means regions with better road networks benefiting most. In the study area all the kebeles have access to road service. The kind of road network that connects rural kebels to the town is asphalt and gravel. The type of transportation they use to go to town is by bus and on foot.

Physical linkage between Guba Lafito district and its rural area is better. About 78.1% of the rural household reported that they used bus and 21.9% of the sample respondents used on foot. The natures of the road networks surrounding rural areas of Guba Lafito district encourage the free movement of goods and service. Rural household easily transport perishable vegetable from rural areas selling to town.

Other Infrastructure

Marketing is an important livelihood strategy of the rural people. It allows farmers to sell their agricultural product and to purchase goods for consumption and production. Market is the most important physical infrastructure that are useful for rural-urban linkage. The sample 6 kebeles within Guba Lafito district use the Tuesday market in order to strengthen rural urban linkage.

Communication infrastructure like telephone and postal service are important for social and economic activities of the communities. Telephone is one of the most important means of communication used by the rural people to obtain recent information they need thus it have an impact on the rural urban linkage. In terms of telephone, the mobile phone service is accessible throughout the kebeles. The Guba Lafito district has a postal service but there is no any postal service in rural kebeles.

Electricity is an essential ingredient of the rural transformation agenda to provide the basis for business and production in small to medium sized towns, and as an important into agriculture, for irrigation pumping, commercial agricultural production and processing. Only 25% of the households have access to electricity service from the sample respondents. In the study area they have access to water service; from the sample respondents 69% have shared type water supply and the rest have privately owned water supply.

Other infrastructure like bank and microfinance service play important role in facilitating rural-urban linkage. However, in Guba Lafito district there is a bank and Amhara credit and saving institution service like microfinance.

4.1.4.5. Human Capital

Health

Health institutions play an important role in having healthy citizen capable of producing, which in turn contributes to economic development of the country. The rural people have an access for health service; there is one health center in each kebele and one health extension experts. Almost all of the sample respondents reported that the service provided by the health service is not adequate.

The type of health institution they get treatment when their family affected by any diseases, 73.8% of the sample respondents use community based health insurance and others gets services from health center.

4.1.4.6. Social Capital

Farmers in the group discussion agreed that mutual trust and reciprocity lower the costs of working together. This means that social capital has a direct impact upon other types of capital. By improving the efficiency of economic relations, social capital can help increase people's incomes and rates of saving (financial capital). Social capital can help to reduce the 'free-rider' problems associated with public goods. This means that it can be effective in improving the management of common resources (natural capital) and the maintenance of shared infrastructure (physical capital).

In the area all the sample respondents reported that they have strong social ties with each other. The type of institutions they are participating. Iddir (social gathering), senbete and mahaber (religious association), and small number of respondents participating in iqqub.

Moreover, social networks facilitate innovation, the development of knowledge and sharing of that knowledge. There is, therefore, a close relationship between social and human capital. Social capital, like other types of capital, can also be valued as a good in itself. It can make a particularly important contribution to people's sense of well-being (through identify, honor and belonging).

4.1.5. Livelihood strategies

Livelihood strategies comprise the range and combination of activities and choices that people undertake in order to achieve livelihood goals. Three broad groups of livelihood strategies are well-known. These are: agricultural intensification (more output per unit area through capital investment or increases in labor inputs), developing a wide income earning portfolio to cover all types of shocks or stress jointly or the strategy may involve focusing on developing responses to handle a particular type of common shocks or stress through well-developed coping mechanisms, and move away and seek a livelihood either for the time being or permanently (Scoones, 1998)

Table 4.6. Kinds of livelihood strategies

Kind of livelihood strategies	Frequency	%	Valid %
Agriculture intensification	42	25.7	25.7
Sending some family members to other town	53	32.3	32.3
Developing a wide income portfolio	65	39.6	39.6
Others	4	2.4	2.4
Total	164	100.0	100.0

Source: Own computation based on the survey data

The survey result shows that there are different kinds of livelihood strategies rural household follow to improve their livelihood. Household heads that uses developing a wide income earning portfolio to cover all types of shocks as a livelihood strategies score 39.6% of the sample respondents. Next to this sending some family members to others town or migration takes 32.3% from the total sample respondents, in the area there is strong flow of people to outside of Ethiopia

In the district both annual and perennial crops are grown on all altitudinal variations. The diverse altitudinal variation and socio-economic condition have allowed the production of different

cereals, pulses, fruit and oil crops. Agriculture intensification by producing high value products also takes 25.7% share from the sample respondents. Households that agricultural intensification as the main livelihood strategy of their livelihood strategy uses fertilizer, high yielding seed, local selected breeds and fruit seed/seedling as an input which gives a higher productivity.

4.1.6. Livelihood Diversification

In Guba Lafito District the rural household diversifies their income through on-farm and non-farm activities. The rural household engaged in on- farm activities accounts 58.9% which is largest as compared to households engaged in non-farm activities. Agricultural growth will lead to strong expansion in high-value agricultural output especially livestock and horticultural products. In the area because of the diverse altitudinal variation and socio-economic conditions have allowed the production of different cereals, pulses, fruit and oil crops.

Another means of livelihood diversification which are engaged in the rural household are non-farm activity. Nonfarm activities have an important role in household economy. Under credit constraint and risky environment, nonfarm income can increase household's farm productivity by mitigating risk and promoting farm investment and finance consumption.

Nonfarm income provides farm households with insurance against the risk of farming and thereby enabling them to adopt new technologies. More importantly, nonfarm activities offer cyclical and seasonal employment to supplement major farm income in money drought prone areas of Africa. Households that are engaged in non-farm activities gain income from various sources such as, petty trade, daily laborer, hand crafting and making local drink and food (own survey, 2014).

4.1.7. Forms of rural-urban linkage

Rural-urban linkages have different forms and dimensions. However, this study focused on rural-urban linkage and give due attention on spatial linkage such as production and consumption linkage (crop production, livestock production, use of agricultural inputs), marketing linkage (flow of production, livestock and industrial goods and service), flows of people (migration and visiting pattern) and service delivery linkages (education).

Land holding

Land is one of the scarce factors of production whose supply id considered fixed. Land is the most important resources for agricultural activity particularly when it is traditional and subsistent. Adding to this the land tenure system can be constraint to agricultural productivity. Expansion of farmlands and irrigation possibilities are limited because of the rugged topography of the study area. Not only the small size of the land challenges in the farming community but also the fragmentation of the farm plots makes the farming life difficult. The average land holding size of the sample household is about 0.50 hectare per household. As to classification of the land by fertility, majorities of sample households classified their lands as semi-fertile and other fertile and some said unfertile

Due to the above mentioned reasons, majority of the respondents answer the farm land they own is not enough for their family. So, these households follow different options to overcome the problem. The different alternative that the rural household they follow are by engaging in non-agricultural activities, engaging in agricultural activities like production of fruit and vegetable, diary production and by renting additional plot of land (own survey, 2014).

Production Linkage

Production linkages are manifested in the form of backward production linkage. Backward linkage results when rural farmers use agricultural inputs such as improved seeds and fertilizer. While forward production linkage involves processing and distribution of agricultural outputs of rural hinterlands household by firm at nearby town.

Agricultural inputs help in increasing productivity in nourishing crop with minerals that are necessary for production. Therefore, small towns are expected to improve farmers' access to agricultural inputs. An extent to which local farmers utilize agricultural inputs and extension service and whether small towns are the sources of these services to local farmer will reveal the impacts of small town on the hinterlands. Survey of rural household reveals that about 73.5% of rural household uses fertilizer last production year and get inputs from multi-purpose cooperatives.

Table.4.7. Agricultural Inputs Used by Rural Household in 2012/2013

Agricultural Inputs	Frequency	%	Valid %
Fertilizer	147	73.5	73.5
Improved seeds	133	66.5	66.5
Herbicides	122	61	61
Pesticides	119	59.5	59.5

Source: Own computation based on the survey data

Table 4.7 shows that the predominant type of input used by rural household in Guba Lafito district was fertilizer. Majority of the rural households used fertilizer last year. This better amount of utilization of fertilizer will increase the amount of crop production which in turn strengthens rural-urban linkage in terms of crop production and supply to the market. It is about

61% and 59.5% of the respondents reported that they used herbicides and pesticides respectively. About 66.5% of the respondents have used improved seeds on last year production period.

Crop Production

The farming system of the district is predominantly mixed farming, consisting of both crop production and livestock rearing. The district is part a teff-sorghum production belt area. Based on the discussion with farmers the productivity of the crops is low and most farmers had the experience of failure of crop production. The primary cause for the failure of crop production is environmental problem, while crop diseases and pest have also a significant share for the loss of production and productivity.

The first and most serious problem is unexpected drought that affects the area frequently. Of the sample rural households 67% of the respondents reported that shortage of rain is the reason for not producing surplus to sell. Of the rural sample households 28.1% of the respondents reported that shortage of farm land is the second reason for not producing surplus to sell. The last reasons for not producing surplus to sell and low production of agricultural productivity are unfertile soil which accounts 4.9% of the rural sample households.

Livestock

In the study area livestock are used for different purposes which include draught power (cultivation, transport, and packing) milk and meat production, for hides and skin, for fuel, manure, e.t.c. Pack animals such as donkeys, horses, and mules are used for transporting loads and human beings. Small ruminants are needed to meet immediate cash demand of the household and also for meat production for the household consumption. Poultry are kept for egg and meat production both for cash and home consumption.

The survey data shows that from the total sample respondents 36.6% of the rural household is participated in animal rearing activities.

4.1.8 Rural Household Visit to Guba Lafito District

Towns provide various services to the hinterland people to provide several services such as market for agricultural products, source of urban goods and services and the center for off-farm employment.

Table 4.8. Frequency and reason of visiting Guba Lafito district

Frequency of visiting town	Frequency	%	Reason to go to town	Frequency	%
Once a week	126	76.8	Market	134	81.7
Twice a week	13	8	Medical treatment	10	6.1
Three times week	6	3.6	Recreation	3	1.8
Four times a week	11	6.7	Administration	1	0.6
Other	8	4.9	Other	16	9.8
Total	164	100	Total	164	100

Source: Own computation based on the survey data

Table 4.8 shows that the frequency and reason of rural people visiting Guba Lafito district. The pattern of visiting the town ranges from once a week to throughout the week. The majority of rural households reported that they go to once in a week. 76.8% rural households visit Guba Lafito district once in a week. This is because there are one market days in a week. The Tuesday market of the district is a big market with very distinct section for cereals, fruits, vegetables, coffee, cattle, clothes, electronic equipment, wood, etc. About 4.9% of the respondents did not visit the town in week.

Table 4.8 Indicates that about 81.7% of rural households of Guba Lafito district reported that they visited town for buying and selling goods. The survey result found out that the frequency of visit is mostly affected by the distance of rural areas from town and the availability and affordability of physical infrastructure. That is the shortest the distance of rural areas from the town, the more the visit and vice versa and accessibility of road service also increases the frequency of visiting town. This implies that because of the shortest distance or nearness to Guba Lafito district and access to road and transport service majority of the rural people visit the town frequently. This shows that there is a better flow of people (migration and visiting pattern) and strong linkage between rural and urban areas.

4.2. Econometrics Estimation and Discussion

4.2.1. Impact of Livelihoods of the Households through Rural-Urban Linkage

The impact of rural urban linkage on the livelihoods of household are analyzed from Binary Logit model. Accordingly, the results for livelihoods means of the household testify that whether age of the household, sex of the household, saving habit of household, access to credit, annual income of the household, occupation type, input typed used by the rural household, marital status and educational status can affect the livelihoods means of the household or not. The dependent variable (livelihood means) is whether it is on farm or non-farm activity:

$$Means\ of\ livelihoods_i \begin{cases} = 0, if\ i^{th}\ Respondent means\ of\ livelihood\ is\ non-farm\ activity \\ 1, if\ i^{th}\ Respondenteans\ of\ livelihood\ is\ farm\ activity \end{cases}$$

In the limited dependent model where the dependent variables are binary (like Probit and Logit Models); the effect of a change in any of the explanatory variables depends on the values of all explanatory variables because they are non-linear models. It is not as such easy in interpreting

the output estimates of the non-linear models as OLS. It is good to interpret its signs to show the directions of estimates according to their significance level as well as the odds ratio to show the impact of each explanatory variable on the probability of dependent variable. It is also possible to express the estimation output in terms of marginal effects but still this is confusing because it only holds if the other explanatory variables are at their average value which is not necessary true(Woldridge, 1999).

Table 4.9: Categorical explanatory variables coding with two categories

Variable	Category	Parameter Coding [1]
Occupation (Job) Type	Yes No	1 0
Saving Habit	Yes No	1 0
Sex of the household	Male Female	1 0
Access to Credit	Yes No	1 0

Source: Field Survey, 2014

Table 4.10: Categorical explanatory variables coding with more than two categories

Variable	Category	Parameter Coding							
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Marital Status	Married	1	0	0	0				
	Divorced	0	1	0	0				
	Windowed	0	0	1	0				
	Single	0	0	0	0				
Educational Status	Secondary	1	0	0					
	Elementary	0	1	0					
	Illiterate	0	0	0					
Input Types	Improved seeds	1	0	0	0	0	0	0	0
	Fertilizer and improved seeds	0	1	0	0	0	0	0	0
	Fertilizer and Pesticides	0	0	1	0	0	0	0	0
	Fertilizer and Herbicides	0	0	0	1	0	0	0	0
	Fertilizers, improved seeds &pesticides	0	0	0	0	1	0	0	0
	Fertilizers, improved seed & herbicides	0	0	0	0	0	1	0	0
	Fertilizer Pesticides and Herbicides	0	0	0	0	0	0	1	0
	Fertilizers	0	0	0	0	0	0	0	0

Source: Field Survey, 2014

The categories for which the value zero is assigned is called reference category. So, all comparisons are made with each reference belonging to the category. Since the dependent variable is dichotomous in nature for this study the response probability $P_i = Prob(livelihood\ means_i = 1|X_i)$ refers to the probability of a household's livelihood status is farm activity given the value of the explanatory variables, X_i. If the odds ratio Exp(â) is less than one, then this means that the odds or the likelihood that the household's livelihood is farm activity is higher for the reference category. On the other, if Exp(â) is greater than one, then the odds are higher for a particular category as compared to the reference category.

Accordingly, to examine the livelihood means of the household, the study incorporated the above stated explanatory variables. The results from the binary logit regression model can interpreted as follows. Age of the household head as a determinant factor for examining the livelihood means of the rural household is statistically significant at5 percent level of significance. As age of household`s increases, the probability that the livelihood means of household is farm activity also increases. This can be interpreted; as age increases, income decreases and the probability of diversifying livelihood means also decreases and hence the probability of improving the likelihood of the household decreases. The odds ratio for age is 1.001 which is greater than one. This also tells us that as the age of the household increase, the likelihood of depending on farm activity as a means of livelihood also increases.

Table 4.11: Logit Models Output

Livemeans	Coef. (B)	Std.error	Z	P>|Z|	EXP(B)
Age	-0.106269	0.04135	-2.57	0.010	0.899
Agesq	0.0011111	0.00046	2.39	0.017	1.001
Sex	0.0504787	0.20365	0.25	0.804	1.051
Marital Status					
Married	0.4071975	0.18208	2.24	0.025	1.502
Divorced	0.5040918	0.25573	1.97	0.049	1.655
Windowed	0.4800285	0.3007	1.6	0.109	1.616
HHsize	-0.01591	0.03575	-0.45	0.656	0.984
Education					
Elementary	0.0391117	0.11768	0.33	0.740	1.039
Secondary	-0.060187	0.17127	-0.35	0.725	0.941
Occupation	-0.27011	0.16835	-1.6	0.109	0.763
Access to Credit	-0.083926	0.01104	-7.6	0.040	0.919
Saving	-0.067745	0.01106	-6.12	0.080	0.934
Inputs					
Improved seeds	0.2479478	0.1313	-1.89	0.059	1.281
Fertilizer and improved seeds	0.3673892	0.08095	-4.54	0.000	1.443
Fertilizer and Pesticides	0.4065422	0.05531	-7.35	0.000	1.501
Fertilizer and Herbicides	0.3696546	0.07696	-4.8	0.000	1.447
Fertilizers, improved seeds & pesticides	0.2932206	0.13496	-2.17	0.030	1.340
Fertilizers, improved seed & herbicides	0.0743204	0.33788	0.22	0.826	1.077
Fertilizer Pesticides and Herbicides	0.3563555	0.09654	-3.69	0.000	1.428
Income of household	-0.0085	0.001	-8.50	0.090	0.992

Number of obs = 164
LR chi2 (20) = 72.17
Prob> chi2 = 0.0005
Pseudo R2 = 0. 2417
Log likelihood = -195.384918

NB: "*", "**" and "***" indicates the variable is significant at 10, 5 and 1 percent significance level respectively.

Source: Survey result, 2014

Average annual income of a household affects the probability of livelihood means of the household positively and significantly at 10 percent level of significance. This implies that when average income of a household increases the probability of diversifying the livelihood means of the household also increases. The odds ratio for the annual income is 0.991. Since this odds ratio is less than one, it implies that the odd of household with high income is less than the odds of household with low income. The inverse of odds ratio is 1.01, which means that the households with low annual income are 1.01 times more likely to base their means of livelihood on farm activity as compared to the household with high annual income.

Access to credit is statistically significant (affect the probability of livelihood means of household positively). This implies that with access to credit, the income of the household increases and hence livelihood means of household during the sample study under consideration. More specifically, with access to credit, the probability that the rural household depends on only farm activity decreases and the probability of diversifying the livelihood means increases. Similar considerations holds for saving habit of household, keeping other thing remain constant. The odds ratio for access to credit (1) and saving (1) are 0.919 and 0.934 which are less than one respectively. Since the coding access to credit(1) refers to household with access to credit and the reference category is household with no access to credit, the odds of household with access to credit is smaller than that of household with no access to credit.

The inverse of access to credit's odds ratio is 1.087, which means households with no access to credit are 1.087 times more likely to base the livelihood means on farm activity than diversifying the livelihood means as compared to the households with access to credit. Similarly, the inverse

of odds ratio for saving habit of household is 1.070. As the coding saving(1) refers to household who saves and the reference category is household who do not save, this means that households who do not save are 1.070 times more likely to depend on farm activity than diversifying their means of livelihoods as compared to those households who saves.

The marital status of the household head such as married and divorced are statistically significant at 5 percent level of significance except windowed which is marginally insignificant and affect the probability of livelihood means positively relative to the single household. Moreover, the odds ratios for statistically significant marital status of the household are greater than one (1.502 and 1.655). This can be interpreted as the odds of married and divorced households are 1.502 and 1.655 times more likely to base their livelihood means on farm activity as compared to the single household.

Another explanatory variable included in the logit model is the type of inputs used by the rural household. Accordingly, the logit regression result implies that except Fertilizer, Pesticides and Herbicides, all inputs types are statistically significant at 1 percent, 5 percent and 10 percent level of significance. The sign of logistic regression result also implies that this input types are positively related with the farm activity as livelihood means. The odds ratios are also greater than 1 for all types of inputs used by the households under consideration. This implies that those household using this input types are more likely to depend on farm activity as their livelihood means.

CHAPTER FIVE: CONCLUSION AND RECOMENDATION

5.1. Conclusion

This study focused on sustainable rural livelihood through rural- urban linkages. With the specific objectives of assessing the nature of rural urban linkages by taking each livelihood resources/assets, the varying combination of livelihood strategies options of the rural households. Regarding the linkage these paper addressed the specific objectives of the extent of linkage for the rural households to the urban center by giving due attention on spatial linkages such as production and consumption linkages (crop production, livestock production, use of agricultural inputs), marketing linkages (flow of production, livestock), flows of people (migration and visiting pattern), services delivery linkages (education, health).

The primary occupation of the population is agriculture, which accounts 93.3% of the total respondents. Availability of finance play important role in facilitating rural urban linkage. The nature of rural- urban linkages depends on the size of credit, 57.3% of the sample respondents have access to credit service. Households with access to credit service have follow alternative livelihood strategies and engaged in diversified activities, reduce the influence of people on natural resource base and increase the capacity of the use of different agricultural inputs.

Rural- urban linkages are highly influenced by the availability of different types of infrastructures in a given area. In the study area all kebeles has access to road service. Only one third of the households have access to electricity service and 69% of the rural households have access to water service. Marketing is an important livelihood strategy of the rural people. Communication infrastructures like telephone and postal services are important for social and economic activities of the communities. Other infrastructure like bank and microfinance services

also play important role in facilitating rural and urban linkages. Each Kebele has access to elementary school for their children and the time taken to reach their school is less than one hour. The rural people have an access for health service; there is one health center in each Kebele and one health extension experts. Respondents reported that they have strong social ties with each other.

In Guba Lafito district there are different kinds of livelihood strategies the rural households follow to improve their livelihood. Household heads that uses developing a wide income earning portfolio to cover all types of shocks as a livelihood strategies scores 39.6% of the sample respondents. Migration or sending some family members to other town takes the second rank(32.3%) . Agriculture intensification by producing high value products also takes 25.7% shares from the sample respondents.

The average land holding size of the sample household is about 0.50 hectare per household. Production linkages are manifested in the forms of backward and forward production linkages and 73.5% of rural households uses fertilizer last production year and get inputs from multipurpose cooperative.

Average annual income of a household affects the probability of livelihood means of the household positively. This implies that when average income of a household increase the probability of diversifying the livelihood means of the household also increase. In addition to income other variables, which affect the livelihood means of the household are also analyzed. These are, household characteristics, access to credit service, saving and input use. Most of the variables have resulted the expected sign. Access to credit service and saving affects the livelihood means of household positively. Input uses are also affects the livelihood means of household positively except fertilizer, pesticide and herbicides.

5.2. Recommendations

Based on the analysis to achieve sustainable rural livelihood as a result of the rural urban linkage in Guba lafito district the following recommendation were forwarded by the researcher.

- Increase credit facilities and the amount of money they saved, as tried to mention in the findings, almost half of the respondents have better access for credit service and saving of money. Since financial capital is important for to stimulate the rural nonfarm economy, reduce the influence of people on natural resource base, increase the capacity of the use of different agricultural inputs and it strengthen rural urban linkage, it should be work intensively in access to credit service and increase the amount of money saved.
- Effective and efficient rural and urban linkage is important for precondition of enhancing and increasing production of rural households and also access agricultural output in both spatial areas. There should be infrastructural development that involves rural and town communities. The greater access to better road and education are among the other things need to be enhanced the linkages between rural and urban areas. As tried to mention in the findings, the physical linkage (infrastructural development) between two areas is better. Therefore the infrastructure development between two areas facilitates the other dimension of rural and urban linkages like economic and service delivery linkages. Thus intensive investment should be given to road as it helps to take resource from rural areas and to strengthen the interaction of rural and urban areas.
- To interlink both rural and urban areas, there is a need to established market institution to coordinate rural and urban areas. Again market allows farmers to sell their agricultural produce and to purchase goods for consumption and production. Therefore, access for

market in their village encourage the flows of people from urban to rural areas and increase the degree of rural and urban linkage between rural and urban areas.

- Agriculture faces problems such as unexpected drought, shortages of farm land and unfertile soil. These have implications for rural- urban linkages by reducing the amount of surplus to be marketed and lowering agricultural produce flow from rural to urban areas. This is also due to the subsistence nature of agriculture and other related problem. So to overcome this problem, there is a need of appropriate strategy that yield to increase agricultural productivities of rural farming system. The farmers should be trained in the rural areas how to increase their production in the farmers training centers. The core roles of the farmers training center is to provide service through training and demonstrations agricultural productivity should be enhanced by adopting agricultural infrastructure through small scale irrigation system and utilizing unused land. Improving the production capacity of rural population by introducing different mechanism that increases soil fertility such as compost.

Reference

Adams, JR. (1995). 'Non Farm Income and Inequality in Rural Pakistan: A Decomposition Analysis: The journal of Development studies, Frank class, London Vol31, No. 1.

Aldreric, H and Nelson, D. (1984). Linear probability, Logit and Probit models

Beyene, A. (2008). Determinants of off-farm participation decision of farm households in Ethiopia, Agerekon, Vol 47, No1.

Bebbinhton, A. (1999). Capitals and capabilities: A framework for analyzing peasant viability, rural livelihood and poverty.

Branun, J (2007). Rural-Urban linkage for growth, employment, and poverty reduction. International food policy research institute Washington, D.C., USA.

Carney, D. (1998). Sustainable rural livelihoods: what contribution can we make? London:DFID.

Carney, D. (2002). Sustainable livelihood approach: progress and possibilities for change. London: DFID.

Chapman, H & Tripp, M. (2004). 'Non-agricultural diversification of farm household and corporate farms in central Europe, University of London.

CSA, (2009), Summary and statistical report of the 2007 population and housing census. Addis Ababa: Central Statistical Authority.

David, S. (2003). The rural non- farm economy, Livelihood strategies and household welfare: Afjare, Vol 4, No 1.

Davis, P (2004). The impact of specific-sector changes in employment on economic growth, Labor market performance and migration.

De Hann, A. et al. (1997). Migration and Livelihoods: Case Studies in Bangladish, Ethiopia & Mali. IDS Reserch Report 46. IDS. Bringhton.

Dercon, S & Krishnan, P. (1996). " Income portfolio in rural Ethiopia and Tanzania: choices and constraints", Journal of Development Studies, Vol 32, No 6, Frank Class, London.

DFID, (1997). Realizing human rights for poor people: Strategies for achieving the International Development targets, Department for International Development, London.

DFID, (1999). "Eliminating World poverty: A challenge for the 21st century" White paper on international development.

DFID, (2000). Sustainable Livelihoods Guidunce Sheet, Department for International Development, London.

Devereux, S. (2001). Evaluating of the Social cash transfer pilot program in Ethiopia.

Drilruba, C.R. (2000). Understanding Farm level Technology Adoption: Lesson Learned from CIMMYT's Micro Survey in West Bengal. CYMMYT Economics Working Paper.

Ellis, F. (1999). Rural livelihood and diversity in developing countries, Oxford: Oxford University Press.

Ferrington, J. et.al. 2002. Sustainable livelihood approach in urban areas: general lessons, with illustration from indian examples. ODI working paper, 162. London: ODI.

Gebremedhin, B., M. Smale, and J. Pender (2005). Determinants of Cereal Diversity in Villages of Northern Ethiopia. In M. Smale (ed), Valuing Crop Diversity: On-Farm Genetic Resources and Economic Change. Wallingford: CABI Publishing (2006).

Green, W (2003). Econometric analysis, 5th edn. Prentie Hall International Inc, USA.

Gujarati, D (2003). Basic Econometrics, 3rd edn. Mc Graw Hill International Inc, New Jerssy.

Kanji et al. (2005). Global biodiversity assessment. Cambridge, USA: Cambridge University press.

Kollmair & Gamper. (2002). Input Paper for the integrated Training Course of NCCR North-South Aeschiried, Switzerland.

Kothari, R (2004). Research Methodology methods and techniques, 2nd edn, new age international press, India.

Lanjouw, P (2007). Opportunities and treats in the developing world, International food policy research institute, Johns Hopkins University Press, USA.

Livingstone, G. (1997). Agricultural Intensification and Rural Sustainable livelihood: A Think Piece. IDS Working Paper 64. IDS, Brighton.

Long, S (1997). Regression models for categorical and limited dependent variable, Sage publication Inc, USA.

Megersa, A (2007). Agricultural wage employment and Rural non-farm employment in Ethiopia: Survey Results, Addis Ababa.

Mekile, S et al (2001). Sustainable urban livelihood: concepts and implications for policy. Working Paper No. 112.

Mohammed, S. (2007). Livelihood strategies and it's implication for rural-urban linkage: The case of Wolenkomi town and the surroundinf rural kebeles. Working paper on population and land use change in central Ethiopia. Addis Ababa University.

MoFED, (2005). Ethiopia: building on progress: A plan for accelerated and sustained development to end poverty (PASDEP).

Moges, D & Gebeyehu, A. (2006). Seed Systems and Small Scale Farmers: A case study of Ethiopia. University of free state press, South Africa.

Mulat, D. & Teferi, R. (1996). Non-farm activities in Ethiopia: The case of North Shewa, Proceeding of the 5th Annual Conference of Ethiopian.

Mutenje , D. (2010). Incentives measures to enhance the sustainable use and conservation of agro biodiversity: Experience and lesson from Zimbabwe. Almekinders, C.J.M. (Ed.) Proceedings of a workshop, Lusaka, Zambia, 11-14 September, 2010.

Pingali, M.R. and Binswanger, H. (1988). Wealth, Weather risk and the Composition and Profitibility of Agricultural Investment", Economic Journal 103.

Puntnam, R. (1993). Making democrasazation work, Princeton: Princeton University Press.

Ruijsink, T. (2004). "Asset, Activity and Income Diversification AmongAfrican Agriculturalist: Some Practical Insure," Project report to USAID Basis CRSP.

Scoones, I. (1998). Sustainable Rural Livelihoods: Aframework for Analysis, IDS Working Paper 72.

Sen, A. (1981). “Poverty and Famines: An easy on entitlement and deprivation”, Clarendon Press, Oxford.

Sheng,Y. K. (nd). Poverty Alleviation through Rural-Urban Linkage: Policy Implications, economic and social commtion for Asia and the Pacific. Bangkok.

Soumyendra et al. (2010). Sustainable Livelihood: a case study of the evolution of DFID policy. London: ODI.

Solomon, A. (2003). Land policy, rural-urban interaction and land administration differentiation in Ethiopia. Paper presented at 2nd FIG regional conference, December 2-5, 2003, Marakech, Morocco.

Stefile, M. (2010). The methodology of village studies in less developed countries. Brigton: IDS, University of Sussex.

Stephon, R. (1990). Impediments to technological Progress on Small versus Large Farms. American Journal of Agricultural Economics.

Tacoli, C. (1998). Rural-urban linkage and sustainable rural livelihoods. London: DFID Natural Resources Department.

Tacoli, C. (2002). Changing Rural-Uraban International in Sub-Saharan Africa and Their Impact on Livelihoods: A Summary, working paper series on rural-urban interactions and livelihood strategies No. 7.IIED, London.

Tegegne, G. (1999). Rural-Urban Linkage under Deferent Farming Systems: The cases of coffee and non-coffee growing regions in Ethiopia.

Tegegne, G. (2005). Rural-Urban linkage in Ethiopia: The need to bridge the gap. Issues and Challengs in Local and Regional Development.

Tewodaj, G. (2006). Shocks, livestock asset dynamics and social capital in Ethiopia: DSGD discussion paper 38, International food policy research institute (IFPRI).

Tiffen et al. (1994). "Consumption Insurance: An Evaluation of Risk-Bearing Systems in Low Income Economics", Journal of Economic Perspectives, Vol.9, No. 3.

UNDP, (2000). “Productive Employment and Poverty Eradication. How can livelihoods be more sustainable” UNDP.

UNDP, (2003). Human Development Report, Oxford University Press, Oxford.

Walter, C. (1972). A report about the origin of central places, Oxford University press: Oxford.

Wintes et al (2005). Rural Development and the diversity of potatoes on Farms in Cajamarea, Peru. In M.Smale (ed) Valuing Crop Diversity on farm Genetic resources and Economic Change. Wallingford: CABI Publishing.

Wolday, A. (2000). The Development of the Micro finance industry in Ethiopia: Performance, problems and prospects in Gebrehiwot Ageba,

Woldridge, J (1999). Introductory Econometrics: A Modern Approach, South-Westen press, USA.

Appendix-A: Questionnaire

Addis Ababa University

College of Business and Economics

Department of Economics

Questionnaires to be filled by sample household heads

Dear participants this questioner is intended to conduct a research on the **"Sustainable livelihood of rural households through rural-urban linkage "** for the partial fulfillment of MSc. degree in Economics in Addis Ababa University. Firstly, I want to assure you the information you will provide in this questioner will not be utilized for any other purpose and its confidentiality will be maintained surly so, keep in mind this and feel free in reflecting on the issues raised.

Enumerator's name----------

Interview date----------

Instruction: Please circle the appropriate answer to all alternative under each question below. Your genuine response is critically invaluable for the better result of the study. Please read all the question properly and provide your response.

Thank You in advance!!!

Meron Tilahun

Section A: Demographic characteristics

1. General information on respondents

1.1. Age of household head---------- (years)

1.2. Sex of household head: A. Male ☐ B. Female ☐

1.3. Marital status:

A. Single ☐ B. Married ☐ C. Divorced ☐

D. Window ☐ F. Separated ☐

1.4. Size of household: ---------- (number)

1.5. Educational status

A. Illiterate ☐ B. Grade 1-3 ☐ C. Grade 4-8 ☐

D. Grade 9-10 ☐ E. Above grade 10 ☐

F. Church/mosque school ☐

1.6. Primary occupation of the household

A. Agriculture ☐ B. Non agriculture ☐

1.7. If your answer for question number 1.6 is agriculture, which one of the following is the activity of the household?

A. Farming/ crop production ☐ B. Livestock ☐ C. Poultry ☐

D. Beekeeping ☐ E. Other, specify----------

1.8. If your answer for question number 1.6 is non-agriculture, which one of the following is the occupation of the household?

A. Petty trade ☐ B. Daily labor ☐ C. Pottery ☐

D. Weaving ☐ D. Other, specify----------

1.9. Secondary occupation of the household:

A. Agriculture ☐ B. Non-agriculture ☐

1.10. If your answer for question number 1.9 is agriculture, which one of the following is the activity of the household?

A. Farming/ crop production ☐ B. Livestock ☐ C. Poultry ☐

D. Weaving ☐ E. Other, specify----------

1.11. If your answer for question number 1.9 is non-agriculture, which one of the following is the activity of the household?

A. Petty trade ☐ B. Daily labor ☐ C. Pottery ☐

D. Weaving ☐ E. Other, specify----------

Section B: The livelihood resource of the household

2. Do u have an access to credit service? A. Yes ☐ B. No ☐

3. If your answer for question number 2 is yes, which are the sources of credit institutions?

A. Microfinance institution ☐ E. Community based institution ☐

B. Cooperative ☐ F. Traditional lenders ☐

C. Relatives ☐ G. Banks ☐

D. NGOs ☐ H. Other ☐

4. Do you save money? A. Yes ☐ B. No ☐

5. If your answer for question number 4 is yes, how much money have you saved so far?

A. Not willing to tell ☐ B. 1,000-4,000 ☐ C. 4,001-7000 ☐

D. 7,001-10,000 ☐ E. Above 10,000 ☐

6. How much is your annual household gross income now approximately? ----------birr

7. Do you have an access for market in your village? A. Yes ☐ B. No ☐

8. If your answer for question number 7 is yes, how far is the market center from the village?

A.1-5 km ☐ B. 6-10km ☐ C. 11-20km ☐

D. 21-40km ☐ E. more than 41km ☐

9. In which of the social capital and social institution do you participate or not participate?

Types of institution	Participate	Not participate
9.1 Iddir (Social gathering)		
9.2 Senbete (Religious association)		
9.3 Mahiber (Religious association)		
9.4 Other, specify----------		

Section C: Options and opportunities of household livelihood strategies

10. What kind of livelihood strategies do you use to improve your livelihood?

A. Sending some family members to other town ☐

B. Agriculture intensification by producing high value products ☐

C. Developing a wide income earning portfolio to cover all types of shocks ☐

D. Other, specify----------

11. Did you use fertilizer last production year? A. Yes ☐ B. No ☐

12. If you did not use fertilizer last production year, what were the reasons for not using?

A. Lack of money ☐ B. Lack of access to fertilizer ☐

C. High cost ☐ D. Other, specify----------

13. Have you used improved seeds last year? A. Yes ☐ B. No ☐

14. If you have not used, what is the reason for not using?

A. Lack of money ☐ B. Lack of access to improved seeds ☐

C. High cost ☐ D. Seed not available ☐

E. Other, specify----------

15. have you used herbicides last year? A. Yes ☐ B. No ☐

16. Have you used pesticides last year? A. Yes ☐ B. No ☐

17. If you have not used pesticides and/or herbicides what is the reason for not using?

A. Lack of money ☐ B. Not available ☐ C. High cost ☐

D. Other specify----------

18. If non-farm activities are one of your livelihood diversification strategies, what are the specific sources? Multiple answers are possible.

A. Petty trade ☐ D. Hand crafting ☐

B. Daily labor ☐ E. Pottery ☐

C. Weaving ☐ F. Other, specify----------

19. If farming activities are one of your livelihood diversification strategies, what are the specific source? (multiple answer is possible)

A. Crop production ☐ B. Livestock rearing ☐

C. Fruit production ☐ D. Other, specify----------

Section C: Extent of linkage for the rural household to the urban center

20. How was the fertility of your plot?

A. Fertile ☐ B. Semi-fertile ☐ C. Infertile ☐

21. Is farm land you own is enough for your family? A. Yes ☐ B. No ☐

22. If your answer for question number 21 is NO, how do you overcome the problem?

A. By engaging in non-agricultural activities ☐

B. By renting additional plot of land ☐

C. Other, specify----------

23. The major crop you produce?

A. Wheat ☐ B. Barley ☐ C. Maize ☐

D. Teff ☐ E. Sorghum ☐ F. Other, specify----------

24. Have you produced any surplus to sell? A. Yes ☐ B. No ☐

25. If your answer for question number 24 above is No, what is your reason for not producing?

A. Shortage of farm land ☐ B. Unfertile soil ☐

C. Unexpected drought ☐ D. Other specify----------

26. Do you visit town frequently? A. Yes ☐ B. No ☐

27. How often did you visit the town?

A. Once a week ☐ B. Four times a week ☐ Twice a week ☐

D. Three times a week ☐ E. Others specify----------

28. Why you go to the town?

A. Administration ☐ B. Education ☐ C. Recreation ☐

D. Religious ☐ E. Medical treatment ☐ F. Other, specify----------

29. Is there any road that connects your kebeles to the town? A. Yes ☐ B. No ☐

30. What are the type of transportation you use to go to town?

A. Animal ☐ B. On foot ☐ C. Bus ☐ D. Other specify,----------

31. Do u have access to electricity service? A. Yes ☐ B. No ☐

32. If your answer for question number 31 is Yes what type of electricity service do you have?

A. Privately owned ☐ B. Shared ☐ C. Absent ☐

33. Do you have access to water supply? A. Yes ☐ B. No ☐

34. If your answer for question number 33 is Yes what type of water supply do you have?

A. Private owned ☐ B. Shared ☐ C. Absent ☐

35. Do you have access for telephone services? A. Yes ☐ B. No ☐

36. Do you have an access to school for your children? A. Yes ☐ B. No ☐