ADDIS ABABA UNIVERSITY
COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR REGIONAL AND LOCAL DEVELOPMENT

The Effect of Land Access on Livelihood Strategies Choice and its Implication toward Household Wellbeing in Land Scarce Rural Area of Soddo Zuria Woreda, Wolayita Zone, SNNPR, Ethiopia

By: Tkue Hayate Sied

June, 2018

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A Thesis Submitted to:

The School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirement for the Degree of Master of Art in Regional and Local Development Studies

By

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Advisor

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June, 2018

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This is to certify that the thesis entitled "*The Effect of Land Access on Livelihood Strategies choice and its Implication Toward Household Wellbeing in Land Scarce Rural Area of Soddo Zuria Woreda, Wolayita Zone, SNNPR, Ethiopia*" submitted in partial fulfillment of the requirement for the degree of Master of Art in Regional and Local Development Studies from Addis Ababa University, and is a record of original research carried out by Tkue Hayate (Id. Nº. GSR/6401/09, under my supervision, and no part of the thesis has been submitted for any other Degree or Diploma. The assistance and help received during the courses of this thesis, the material used in this paper have been duly acknowledged and cited. Therefore, I recommended that it be accepted as fulfilling the thesis requirement.

Major Advisor Name: Andualem Goshu (Ph.D.) Signature _____ Date _____

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This is to certify that the thesis prepared by Tkue Hayate Sied entitled: *The Effect of Land Access on Livelihood Strategies Choice and its Implication Toward Household Wellbeing in Land Scarce Rural Area of Soddo Zuria Woreda, Wolayita Zone, SNNPR, Ethiopia* submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Regional and Local Development Studies Development complies with the regulations of the University and meets the accepted standards with respect to its originality and quality.

Signed by the examining committee:

External Examiner: _____ Signature _____ Date _____

Internal Examiner: _____Signature _____ Date _____

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_____

Chair of Department or Graduate Program Coordinator

Abstract

The main purpose of this study is to examine the effect of land access on livelihood strategies choice and its implication toward household wellbeing in land scarce area of soddo zuria woreda, wolayita zone. The study has adopted a mixed research method. A multi-stage stratified random sampling was employed to selected 203 sample household from sample kebeles. Cross-sectional survey design was employed in order to collect primary and secondary data. Data obtained from primary and secondary sources were analyzed using descriptive statistics and regression analysis. Descriptive statistics were used to describe the different household socio-economic, demographic and educational characteristics as well as it also showed the relationship between dependent and independent variables using simple statistical tests such as chi-square. Participatory wealth ranking and Alkire-Foster methods were used to categorize households in to three wellbeing status. Accordingly 52 (25.6%), 105 (51.7%) and 46 (22.7%) of the households were found to be categorized as well off, moderately well and not well category of wellbeing status respectively. While the regression analysis includes ordinary least square model, multinomial logistic regression and order logistic model that were used to examine determinants of land access, household choice of livelihood strategies and to examine the effect of land access, livelihood strategies and other household characteristics on wellbeing status of the household respectively. The result of OLS model indicated that out of the total ten explanatory variable, age of the household, native, distance to city, cooperative participation (membership) and wellbeing status of the household were found to be significant and had positively affect household access to land. Result from multinomial logistics regression showed that age of the household head, total livestock endowment and land access was found to be significant and negatively affect household diversification of livelihood strategies among other things. Educational status, income of the household and family size were found significant and positively affect livelihood diversification. Order logistics model result also indicated that variables such as livelihood diversification, land access, education status of the household head, credit receive and income of the household found to have positive influence on the household wellbeing status, holding other things constant. The study revealed that attainment of household wellbeing is not easy and determined by different variables. Therefore, intervention and different livelihood diversification activities should be done by the government and concerned body with special target to vulnerable and low income groups such as female headed, wage workers and youth.

Key word- Land Access, Livelihood strategies, Wellbeing

Acknowledgments

First and foremost I would like to express my endless love and say glory to almighty God for providing me the opportunity and strength to pursue my graduate study at center for Regional and Local Development studies, Addis Ababa University. Thank You Allah (S.W.)

Second I owe the deepest gratitude and respect for my advisor Dr. Andualem Goshu for his invaluable guidance, suggestion and constructive comments without which this thesis would have not been in this form. I would also like to thank Dr. Kumela Gudeta for his advice and constructive suggestions. My examiners both Dr. Worku Tuffa and Dr. Aklilu Amsalu also deserve gratitude for their constructive comments in finalizing this thesis.

My special thanks also goes to my close friends Miniyamir (Professor), Mubarak (Mubing), Abdu for their advices and support in the whole process of the study. As well my bro Remex and friends also deserve gratitude for their being in my side during defense.

Indeed, I am grateful for my families, friends and classmates for their unreserved support and encouragement throughout the whole study.

Acronyms

ADLI- Agricultural Development Led Industrialization
BoFED- Bureau of Finance and Economic Development
CSA- Central Statistical Agency of Ethiopia
DARD- Department of Agriculture and Rural Development
FAO- Food and Agricultural Organization
DFID- Department for International Development
ETB- Ethiopian Birr
FDRE- Federal Democratic Republic of Ethiopia
FGD- Focus Group Discussion
GDP- Gross Domestic Product
GNP- Gross National Product
IMF- International Monetary Fund
MDGs- Millennium Development Goals
MoA- Ministry of Agriculture
MoARD- Ministry of Agriculture and Rural Development
MoFED- Ministry of Finance and Economic Development
NGOs- Non Governmental Organizations
OECD- Organization for Economic Cooperation and Development
OLS- Ordinary Least Square
SNNPR- Southern Nation, nationalities and Peoples Region
SPSS- Statistical Packages for Social Science
SLA- Sustainable Livelihood Approach
SLF- Sustainable Livelihood Framework
UN- United Nations
WADU- Wolayita Agricultural Development Unit
WARDO- Woreda Agricultural and Rural Development Office
WB- World Bank

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

An improvement in the well-being of people and households is the most important objective of every human being and government activities. OECD (2011)in its report paper ("Measuring well being," n.d.) argued that development involves more than simple improvement in incomes or other material conditions. In its broadest terms, development can be thought of as a sustainable improvement in the well-being of a country's citizens. However, bringing sustainable improvement in household is not an easy and one time task. Wellbeing has different dimension and closely related with concepts like welfare, progress, improvement, as a result its attainment will also be affected by different things such as access to capital, access to land, livelihood strategy choice. Although there is no universally accepted definition of wellbeing, it is known that it encompasses more than income and consumption. In order to achieve wellbeing, different livelihood strategies will be employed by households. Livelihood strategies are the means of attaining household wellbeing. However, these livelihood strategies will affected by access to land.

Majority of people in the world are highly depends on natural resource for their survival. Among the different types of natural resources, land is highly connected to the lives of the rural people. It is recognized by developed and developing countries that land is the utmost important for socio-economic development. The dependency rate on land is greater in developing countries. This is because the source of livelihood for the people of developing countries especially for the rural poor is agriculture which the exercise of agriculture is also highly depending on land. The UN HABITAT (2012) as cited in (Elias, 2014) has made statement on land as everyone has relationship to land. Land is the main source of livelihood for extensive portion of population around the world. In recognition to this importance of land, access to it is crucial especially for rural people.

Development scholars like Boserup and Malthus had tried to link the issue of population with land use and food production. Among these Boserup and Malthus linear view is stated that there is direct and linear relationship between population and land use. This implies that population

growth have direct impact on the land use. The impact of population growth has clearly manifested on land use. In recognition to this different bodies have recognized such linkage.

As land is recognized as an important source of livelihood across the globe, it is also important and plays major role as livelihood asset in eradicating poverty across the globe. In recognition to this, sustainable development goals have acknowledged that there should be to ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance. Sustainable Development Goals has also put an indicator to this goal as Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure(Group et al., 2016). Therefore, land especially equal access to land among the rural poor is recognized as important livelihood assets that derive improved livelihood outcome in the form of better wellbeing and reduce poverty through choosing appropriate livelihood strategies.

Approximately 90% of rural households in developing countries are involving in farming activities (Davis et al. 2010a, b). Land is very important asset in Africa given that 75% of the population in Africa lives and is depend on land and agriculture, including access to natural resource for their livelihood, their environmental security has to be sought in land (ECA, 2004). However, the ratio of land under crop cultivation to agricultural population (a rough proxy for farm size per capita) has been shrinking gradually but consistently in Africa (Jayne, 2002). Consequently, both shortage and unequal distribution of land is seen as limitation for socio-economic development in Africa. Scholars have recommended that 'realistic discussions of poverty alleviation strategies in Africa need to be addressed in the context of pattern of land distribution and trends (Yamano *et al*, 2003). These scholars add that, 'poverty reduction in countries where 70-80 % of the rural population draws their income from agriculture will depend on the distribution of assets 'in particular land (Elias, 2014).

More than 70% of the population in Eastern Africa is rural depending mostly on subsistence agriculture (Desalegn, 2007). This implies that more than half of the population in eastern Africa extremely depends on land for their survival and livelihood. Agriculture is the main source of livelihood for the majority of rural people in Eastern Africa.

The total population of Ethiopia is more than 100 million as of 2017 estimation report by UN. From the total, 80.3% of the people lived in rural area who used agriculture as their source of livelihood and considered as agrarian. The agricultural sector plays an important and vital role in different aspect of the country's socio-economic development of its people. Agriculture which is also considered as the backbone of the country's economy constitutes a share of 37.23% of GDP (CIA Factsheet, 2016). Agriculture is the means of survival and livelihood for the majority of the people in Ethiopia. Given this fact in to account, land is the most important resource and asset for the people of Ethiopia which considered agriculture as their source of livelihood. Apart from the economic value, Land in rural areas of Ethiopia fulfills a number of social functions. It is a bearer of social and cultural values since it's used as settlement and symbolic and ritual use, such as burial sites(Berger, 2014).

Like most areas of Ethiopia, Wolayita's people are highly depending on land for their survival and improvement of the quality of their life. This is because it is the source of livelihood and means to achieve their wellbeing. However, land in nature is fixed supply given the increasing population size of the area. High population growth in Wolayita zone and land shortage leads the household to find another means of livelihood strategies. As far as strategies are concerned, agricultural intensification, livelihood diversification and migration are the three core livelihood strategies (Scoones, 1998 and Ellis, 2000). As a result, rural people of Wolayita engaged in a number of strategies, including agricultural intensification through the use of irrigation, migration and livelihood diversification, which enable them to attain a sustainable livelihood. In addition to this, in the study area agricultural practices faces problems such as shortages of land for allocation, landlessness, small farm size, and unequal distribution of land. This will therefore increase the role played by access to land in defining household choice of livelihood strategies and bringing household well As a result access to land will have great effect on the choice of livelihood strategies of the people in the area. By doing this it will also help to bring secured household wellbeing by identifying appropriate livelihood strategies.

Therefore, this study will intended to examine the nexus that exist among land access, livelihood strategies choice and household wellbeing in Soddo Zuria Woreda[1] of Wolayita zone by using mixed research approach.

1.2. Statement of the Problem

In rural development, addressing the socio-economic problem of rural poor is given prominent attention. Multifaceted efforts have been made by international and regional organizations, governments and non-governmental organizations in order to solve the problem of food insecurity, poverty and income inequality and ensuring better household wellbeing among the rural poor emphasizing in ensuring food security, reduce shock, vulnerability and empowerment of rural poor. Poverty is prevalent in the developing world. GDP per capita, life expectancy, educational enrolment and other indicators of well-being are extremely low. Various development policies and strategies were formulated in order to pull rural poor of developing countries out of poverty and to bring well-being. The ultimate goals of such macro and micro policies enacted across the continent are to improve the wellbeing of the society. In order to realize such goals, government and different organization intervention tried to understand reality with rural poor livelihood strategies. Agriculture is a dominate means of livelihood in third world countries. However, it is highly vulnerable and risky business due to frequent occurrence of drought, high level of land fragmentation, and traditional way of farming and low technological orientation (Todaro, 2003).

Improving and bringing secured wellbeing of the people especially household wellbeing is not an easy task. Household wellbeing in developing countries is highly threatened and deteriorated by shock of natural, human made disaster and loss of means of livelihood including poverty and food insecurity (Shumete, 2009). In Sub-Saharan Africa average multidimensional poverty is 27.6% and also the food insecurity level is also high than other regions (Alkire and Santos, 2010). Indeed, this situation grow worse if rural peoples are not capable to develop their way of coping mechanism and give response to such shocks and stresses.

[1] Woreda-the fourth tier of elected government in the administrative structure of the Federal Democratic Republic of Ethiopia (FDRE)

Jonathan (2010) explained food insecurity as one of the urgent and emerging development challenges of the 21st century especially for developing countries. In addition eradication of poverty is also the other challenge most developing countries face today. These issues will become serious and deep rooted challenges when we come to the rural part. Although there are reductions of people of the world who live under poverty, there are still significant proportion of people mostly rural people who live under extreme poverty and food insecurity. The UN report indicated that there showed a reduction of people of developing countries who lived in extreme poverty from 28% in 1990 to 19% in 2002 (UN, 2007). However, significant proportions of people from developing countries mostly rural people are still suffered from poverty and food insecurity. In general poverty, food insecurity and under development are major problems of developing countries which results in low living standard, short life expectancy, poor infrastructure and inadequate public service delivery. The severity of poverty and underdevelopment is more clearly perceptible on remote poor local community and when household denied agricultural land. Hence, rural poverty is strongly associated with poor access to land, either in the form of landlessness or because of insecure and contested land rights (Cotula, Toulmin, & Quan, n.d.). This was also highly undermining their effort to improve and bring secured wellbeing in its entire dimension.

For survival and bringing household wellbeing, rural household employs different livelihood strategies such as on-farm, off-farm and non-farm activities in rural areas in which their selection depend on the availability of natural and human factors. Moreover, household design livelihood strategies that include intensification of farming through increase production per existing unit of land (National Research Council, 1993) and through migration to the more productive areas. By far rural areas livelihood strategies are highly influenced by form and type of land access exist among the household since land is a crucial asset for the people of developing countries. This is due to the fact that majority of the people in developing countries lives in rural and depends on agriculture for their livelihood. As a result, secured access to land is the most important. However, world population is increasing ahead and hence, makes difficulty to grant agricultural land enough for household to produce foods for household consumption. Such thing demands responsible bodies to generate means of livelihood beyond agriculture (Anseeuw et al. 2012; White et al. 2012; Cotula 2012; Deininger et al. 2011, Cotula et al. 2009; Grain, 2008).

Therefore, accessing household to agricultural land has more likely effect on livelihood strategies choice and household wellbeing.

Agricultural land is the most determinates of rural people's livelihood strategies choice. In spite of this fact, Ethiopia's government granted individual right access to land through the constitution. However, the country faces land scarcity in most highland Ethiopia especially in southern part of the country where the majority of household landholding size is less than the national average land size of 0.5 ha. For this witness, 67% of Wolayita zone of southern nation, nationality and people region land size is less than 0.5 ha (CSA, 2007). As a result rural residence especially youth and children segment of population migrates to urban areas for searching of job thereby exposed to multifaceted social problem (Sosina and Holden, 2013).

Moreover, the multi-dimensional poverty index of the SNNPR is 0.574 which is above the national rate which is 0.564 (OPHI, 2017). In addition to this, the percentage of poor people in SNNPR of Ethiopia in general and Wolayita zone in particular is 89.7 % which is above the country average 87.3 %. Besides, inequality among the poor is 0.279 which is almost equal to the national average (ib id). Cognizant of this fact, the importance and value of land as source of survival and livelihood is highly recognized in the area as compared to other part of Ethiopia because of this household wellbeing is deteriorating. In the area, many poor rural households are unable to gain sufficient (or any) access to land when this could be their best option out of Poverty. Desalegn (2007) stated that non-agricultural activities as livelihood diversification is needed as a result of increasing population size, micro-holding and increasing landlessness in wolayita. Therefore, securing sustainable livelihood strategies through scientific based research is essential. However, there is limited evidence on the determinants of livelihood strategies and the association between livelihood strategies and household wellbeing in sever land scarce areas of Ethiopia. Besides, it is possible to argue that limited attention was given in these areas.

Few studies have been conducted on livelihood strategies. So far, most of the studies were conducted on determinates of factors of livelihood and minimum attention was given to the effect of land access on livelihood choice and association between livelihood strategies and household wellbeing.

The majorities of research conducted so far were focused on the determinant of livelihood strategies choice in different countries of the world in general and part of Ethiopia in particular. A research was conducted on determinates of livelihood ((Eneyew & Bekele, 2012), (Kassie, Kim, & Fellizarjr, 2017), (Kassie, 2017), (Fellizeretal, 2017), (Gecho, Ayele, Lemma, & Alemu, 2014), (State, 2017) (Yishak & Gezahegn, 2014), (Zerihun, 2012), (Dereje, 2016), (Ellis, 1998), (Sebele, 2014), (Seraje, 2007) . However, these studies did not show the linkage between land access with household wellbeing and land access with livelihood strategies choice. Other studies conducted in Tanzania by (Lyatuu & Urassa, 2014) and (Mwesiga, & Kalisti, 2016) were tried to show the influence of land access, and livelihood strategies on household wellbeing. However, this study did not focus on household without land holding right and means of land access, did not focus on land scarce areas, did not show the determinates of livelihood strategies and more focus on quantitative study approach as well as focus on narrow spectrum of wellbeing. Another study by Dereje, 2016 tried to link livelihood strategies with food security using qualitative studies. This study also tried to cover determinant of livelihood strategies. However, the result was narrow since from its beginning the study has thematic gap as it focused only on livelihood strategies and food security. This is because food security is not the only dimension of household wellbeing and household who are food secured may not achieve wellbeing in its different form. Another study Sintayehu et al (2017) focused on rural livelihood diversification strategies in Sodo zuria woreda using mixed research method. The finding of this research comes up with land size and other factors as determinant for household to pursue different livelihood strategies. However, this study did not cover the nexus exist among land access, livelihood strategies and household well-being. It merely focused on rural livelihood diversification strategies taking different factor in to account.

Therefore this study attempted to fill knowledge gap by looking the effect of land access on rural livelihood strategies choice and the nexus that exist between livelihood strategies with household wellbeing in land scarce rural area of Soddo Zuria district, Wolayita zone using qualitative and quantitative approach.

1.3. Objective of the Research

1.3.1. General Objective

The general objective of the study was to examine the effect of land access on rural livelihood strategies choice and its implication toward household well-being in Soddo Zuria woreda, Wolayita zone.

1.3.2. Specific Objectives

In order to address the general objective, the following specific objectives were answered by the study:

- To identify the source of land for the household in the study area.
- To identify the types of livelihood strategies exist among household in the study area.
- To assess the socio-demographic and institutional factors that influence land access.
- To examine the effect of land access and other household characteristics toward the choice of livelihood strategy by the household.
- To examine the effect of land access, livelihood strategies and other socio-economic, demographic factors on household well-being.

1.4. Research Questions

The research questions that were tried to be answered by this research includes:

- How do household socio-demographic characteristics influence access to land?
- How land access and other factors determine livelihood strategies choice?
- What nexus does exist among land access, livelihood strategies and household well-being?

1.5. Scope of the Study

This study was delimited within the following four scopes. The subject scope of this study was covered to the effect of land access on livelihood strategies choice and the nexus that exist among livelihood strategies and household wellbeing. Methodologically, the study will confine to mixed research approach by employing both quantitative and qualitative research methods. Regarding time scope, the study was carried out from January, 2018 - June 2018. Geographic scope of the study has covered to Sodo zuria wereda of wolayita zone, SNNPR, Ethiopia.

1.6. Limitation of the Study

Due to wide scope and problems of managing all factors which can determine household livelihood and wellbeing status, the study was particularly targeted on land access-livelihood strategies and wellbeing status nexus. Hence; this had affected the flexibility of data especially in assessing details of livelihood assets which could determine household livelihood strategies choice and wellbeing status. In addition to this, during data collection moreover the lack of literatures or studies which are carried out particularly on land access-livelihood strategies and wellbeing status nexus in Ethiopia were also the drawbacks which have challenged this study. Indeed, Lack of finding up date and timely secondary data from the concerned body were also the bottleneck of this study.

1.7. Significance of the Study

Attaining household wellbeing is the most important objective of every government and non-governmental activities. However, such objective could not be attained easily and demands investigation and assessment of factors that determine household wellbeing. Among these factors access to land and the consequent livelihood strategies or activities choice that household pursues are the most dominant one. Therefore, this study will have significance to show the nexus that exist among land access, livelihood strategies and household wellbeing. This will enable to woreda level and kebele's administrator to incorporate the issue in to their economic intervention activities so as to enhance household wellbeing.

The finding of this research could also be indispensable for the policy makers at micro level to address the issue of land access very carefully by equipping them with the knowledge and information about the role of land access in deciding household to choose the different livelihood strategies at hand and finally in bringing household wellbeing. More over this study will be used as a source for further studies of those interested body to undertake a research on the related topic in the area or in different area of the country.

1.8. Operational Definition

- Land access- In this research land access is defined as ability and means by which an individual or household is able to access and benefit from land (Ribot & Peluso, 2003). The right dimension of land access is not the focus of this study.

- Household: Constitutes a person or group of persons, irrespective of whether related or not, who normally live together in the same housing unit or group of housing units who have common cooking arrangements.
- Livelihood- the capabilities, assets and activities requires for a means of living (Scoones 1998).
- Livelihood assets- human and non-human resources up on which livelihoods are built and to which people need access.
- Livelihood strategy- the range and combination of activities and choices that people make and undertake in order to achieve their livelihood goals (DFID, 1999). It also refers to a set of economic actions used by household and its members to meet household outcome
- Livelihood outcome- is the achievement or output of livelihood strategies. Livelihood outcome may be expressed in terms of increased income, improved wellbeing, reduced vulnerability or improved food security.
- Diversification- the process of broadening income and livelihood strategies away from purely from farm activities toward non-farm and off-farm or combination of activities in order to generate more income and secured household wellbeing. Household diversification can also defined as the process by which household construct a diverse portfolio of activities and assets in order to survive and improve their standard of living (Ellis, 2000).
- Woreda- The fourth tier of elected government in the administrative structure of the Federal Democratic Republic of Ethiopia (FDRE)

1.9. Organization of the Thesis

The rest part of the thesis is organized as follow: Chapter two presents literature review including theoretical and empirical evidence as well as the major conceptual framework. Chapter three will discuss about research methodology including econometrics models specification and determination. Chapter four will discuss and present about result and major finding drawn based on the collected data. And finally the final chapter will goes with conclusion and draw recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1. Definition of Concepts and Terms

Concepts are terms used as analytical categories in research and help to have clear understanding about the study topic in hand. A clear understanding and definition of different concepts used in this research is very important to keep the consistency throughout the whole research. This is done through reviewing different related literatures and materials that are appropriate to the subject area of this study. Accordingly this chapter will discuss the main concepts that will be used as a pillar for this research, and their theoretical stand and also review related empirical studies.

2.1.1. The Concept of Land Access

For countries where majority of the people live on rural areas and depend on agriculture for survival, land is the most vital resources used as a source of every livelihood outcomes. Land is considered as the backbone for rural live and rural economy in many developing countries. A plot of land can provide a household with physical, financial and nutritional security and also provide labor with source of wage which could also enable to gain additional income (Hanstad et al, 2004). The World Bank (2006) considered land as an integrating component of all livelihoods which depend on farm, rangeland, forest and water. Land is one of the livelihood assets whereby the overwhelming majority of rural people drive their livelihood. According to Afro-Asian Rural Development Organization (AARDO), (2006) as cited in Bereket (2010) land apart from source of generating livelihood is the main vehicle for investing, accumulation of wealth and transferring such wealth between generations.

Land as one livelihood asset is used by household to produce a variety of tangible and intangible output which is considered as livelihood outcome. Augmenting capital stock and producing a variety of satisfaction as a result of livelihood outcome are the main objective of household wellbeing.

European Environment Information and Observation Network define land access as the permission or freedom of somebody either individually or in group to use, enter, approach or pass to and from a tract of land (www.eionet.europa.eu/gemet/en). Land access can also be defined as the process by which people either individually or collectively, gain right and opportunities to occupy and use land for productive or economic and social purpose either on permanent or temporary term. It is about all possible means by which an individual or household is able to benefit from things (Ribot & Peluso, 2003 as cited in Lyatuu & Urassa, 2014)). There are different ways in which land can be accessed in rural areas. Land can be allocated among households through different means as in the form of gift, market transaction or combination of the two. Market transaction may include land sales, rentals, and sharecropping whereas land gift may include inheritance, transfer at marriage (Egyir, 1998). Therefore land can be accessed in rural area either in the form of gift given to the household head or through the means of getting in to market transaction process. These are the most notable source of land for the household in rural areas. Therefore in this thesis land access can be used to mean the means and ability of gaining access and benefit from the land through different sources.

In most developing countries land is the most vital livelihood assets used by the household to produce a variety of products used for household consumption as well as for the attainment of wellbeing. In general it is a means of survival and the World Bank stated that Land is most important assets of the poor. But the poor need secure access to turn this asset into economic opportunities (World Bank, 2017). Access to land is an important issue for the majority of Ethiopian people who, in one way or the other, depend on agricultural production for their income and subsistence (Mezgebu, 2014). Sustainable poverty reduction and means of earning livelihood goals required access to basic natural resource such as land, forest, water, fisheries etc. by the rural poor. Without access to these basic natural resources, the livelihood of rural people would become vulnerable. This is because it would become difficult to obtain food and augment other assets (LSP, 2004). Like in many developing countries, in Ethiopia small holder agriculture occupies 95% of the available arable land (Subramanian, 1996). Cognizant of the importance of land for the people, the main objective of Ethiopia's land policy is equity in land holding size.

Byers (2010) argued that access to land through its linkage of access to capital is the most vital source of livelihood outcome and is also an important determinant of household choice of

livelihood strategies. However, some scholars such as Riggs, Kraus man et al (2001), Bebington (1999), who advocate urbanization and industrialization criticized the point raised by Byers on the importance of land access as source of household livelihood strategies and household wellbeing. They argued that the nature and direction of growth has progressively decrease the role of land played in rural livelihood and consequently rural livelihood had become diversified rapidly (Layuuti and Justin, 2016). This idea is also highly supported by Boserup in that the increase in non-farm activities deteriorates the importance of land access to rural livelihood in particular and rural development.

2.1.2. Livelihood Strategies

A livelihood strategy is a combination of two words that needs to define separately to have more comprehensive meaning of the term. Livelihood which is very common in many literatures during recent decade has been given different definition by different writers and scholars. The most popular and notable definition is the definition given by Chamber & Conway. They defined livelihood strategies as:

> *A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recovers from stress and shocks, maintain or enhance its capabilities and assets, and provides sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (*Chambers & Conway (1992).

Livelihood is comprehensive concept that involve among other things access to resources and activities that households undertake in order to secure their means of living and strategies that they pursue under both normal or abnormal/crisis situations (Scoones 1998). Ellis (2004) also defined livelihood as it includes the different form of assets, activities and access to these assets as mediated by different institutions that together determined the living gained by individuals or households. In general livelihood is a means of making living, the various activities and resource that allow people to live. Strategies on the other hand can be defined as the activities pursued by the household. Strategy more often connotes a continuum of adjustment made by household in response to internal and external factors, to survive at the same level or to attain upward mobility. Therefore, Livelihood Strategies as defined by DFID, (1999) is the range and

combination of activities choices that people make in order to achieve livelihood goals including productive activities, investment strategies, reproductive choices etc. Livelihood strategies consists all activities that generate the means of household survival and are performed according to plan by men and women to build their livelihood (Ellis, 2000). Livelihood strategies are the combination of activities that people choose to undertake in order to meet their livelihood goals and outcomes (UNCDF, 2005).

Scoones (1998) identified three categories of livelihood strategies. They are Agricultural intensification/ extensification, livelihood diversification and migration. Agricultural intensification means an increase the production per existing unit of land through the use of different technologies or whereas Agricultural extensification is the practice of farming which is previously unused land (National Research Council, 1993). Under both agricultural intensification and extensification, the focus is increasing reliance on agriculture as a strategy, either by intensifying resource use in combination with a given land area, or by bringing new land in to cultivation or grazing (Babsa, 2015). Livelihood diversification involves engaging in diverse and multiplicity of activities. It involves a shift from traditional sector such as agriculture to non-traditional activities in rural or urban space, leading to an occupational and geographical shift (Start & Jhonson, 2004). Livelihood diversification involves the process of broadening livelihood outcome through engaging not only in farm but also in non-farm and off-farm activities (Hussein & Nelson, 1998). Migration is also other form of livelihood strategies in which household pursued to meet their household goals or to overcome shock and vulnerability arise out of household failure to secure wellbeing.

Table1: Definitions of Typical Livelihood Strategies

1. Agricultural/ Farm activities: Is an activity where household gained their household outcome from agricultural activity mostly farming activities.
2. Off-Farm Activities: is the practice of engaging as wage labor in other farm with in agriculture (Ellis, 2005). It may include agricultural wage, land rent, environmental gathering, charcoal made and firewood collection.
3. Non-Farm Activities: is an activities of non- agricultural and non-farm which may include the practice of small businesses like hand crafts, trades etc (Ellis, 2005). It is non-agricultural livelihood strategies like wage employment outside agriculture, self-employment and property income. Craig (2001) defines non-farm activities as activities that are outside agriculture, fisheries or forestry.
4. Agriculture + Off-farm Activities- the combination Agricultural activities with that of Off-farm activities.
5. Agriculture + Non-farm Activities- the combination Agricultural activities with that of Off-farm activities.
6. Agriculture+ Non-farm+ Off-farm Activities- Livelihood activities which involve the combination of the three form of activities of Agriculture, off-farm and non-farm practices
7. Migration- the practice of migrating from one place to another in search of better job and income for livelihood. Scoones, (1998) define migration as it is the movement from one to another due to different migration cause (e.g voluntary and involuntary movement), effects (such as reinvestment in agriculture, enterprises or consumption at the home or migration site) and movement patterns.

2.1.3.The Concept of Wellbeing

The concept of wellbeing has been remained the topic of debate by different discipline of social science. Economist focused with material wellbeing manifested itself in the form of GDP, GNP or national income. As opposed to this disciplines such as sociologist, social psychologist and political scientist strives to create social indicator of wellbeing. As a result of this, having common understanding meaning of wellbeing is very crucial to avoid ambiguity throughout the research. In general the overall wellbeing of household as a dimension of welfare and security

are the most important indicator of social development. Given the broad nature of the concept of wellbeing, it is difficult to have agreed definition of wellbeing. There is no accepted definition of wellbeing (Hird, 2003). The broad concept of well-being, which includes freedom, health status, life expectancy, education and which all could also be related with income and consumption make to have one universally accepted definition of wellbeing difficult (Deaton, 2003; and Pedro and Romina, n.d as cited in Surafel, 2017).

There are two strand of measuring wellbeing namely objective which account income, expenditure and consumption in to account and subjective which focus non-material indicators of wellbeing like education, life expectancy, freedom.

Therefor for the purpose of this research wellbeing indices to categorized household wellbeing in to three categories namely well-off, moderately well-off and not well will be constructed using data obtained from interview and FGD.

2.2. Theoretical Review

Every research may aim either to deductively test or confirm empirical finding or inductively build theory. To do so performing theoretical review is very crucial. Therefore, the researcher undertakes theoretical review and decides on the following two theories to base the research. These are access theory and sustainable livelihood approach. These theories are the base for the research.in nutshell.

2.2.1. Access Theory

Access is defined as the ability and opportunity to benefit from things. It is about all possible means by which an individual or household is able to benefit from things (Ribot & Peluso, 2003). Access theory gives priority to the ability and possibility of individual or household to get benefit from something either it could be resource, asset, capital etc. This focus on ability is beyond the notion of right as described by the right theory. According to this theory as point out by Blaikie et al. (1994) Household with better access to different form of asset and resource are less vulnerable to hazards, and may be in a position to avoid disaster and may be in a better position to improve their wellbeing. As described by Lyatuu & Urassa (2014), in access theory there are three main mechanism of access:

- Right based access- this include legal access (when the ability to benefit from something derived from right attributed by law, custom or convention) and
- Illegal or right-denied access (when violence and theft is applied). This is mostly happened through illegally accessing different resources
- Structural and relational based mechanism of access which refers to opportunities and constraints that mediate the ability to benefit from resources. There are different socio-demographic and institutional mediating factors that may enhance or hindered accessing livelihood resources and assets.

Therefore, access to resource can be influenced either by right based access, illegal access or structural and relational mechanism. Literatures by Bebbington (1999), Barret et al (2001), Brown et al (2006) and Guardiola et al (2013) as cited in Lyatuu & Urassa (2014) indicated that there are socio-economic characteristics of household that affect access. These characteristics include Age, Educational attainment, Sex and Marital status and Period of residency. As far as sex is concerned in most African countries women are deprived from resource access and control. As a result of this female headed household suffered from being poor because of the denial of resource to be accessed by them. In terms of marital status married women have more probability to access resource through their husband than those who are widowed or divorced. Urassa (2010) argued that household head with high educational level have the opportunity to get well paid job and economic knowledge and this will give them with the opportunity to access resource through purchase. Along stay in locality also increase the probability that an individual or household may acquire resource through inheritance and common regime (ib id).

Literature by Allian & Ellis (2000) indicated that in rural area most livelihood assets especially land which is the most important one can be accessed through different means such as intra-family transfer, community membership in the case of common property, and through sales and rental. Apart from these land can also accessed and gained through government land distribution and redistribution. The following are some of the source of land for the household as described by Allian & Ellis (200):

- Intra-family transfer of land and other livelihood asset and resource- It is the most important and fundamental source of land and other resource for the individual and household. As indicated by Dejanvyr and Sandoulet (2000) in such means of transfer,

there is no complicated form of large scale land and resource redistributive rather it is simply the transfer of land which was obtained from different source among the member of household. There are two common form of intra-family transfer of land. These are transfer of land and other resource through gift when member of the household get married and access to land through inheritance. However, sex of member of the household as a mediating factor play an important role in enabling or hindering to access to land in such type of transfer. The issue of women in land access through intra-family transfer is very debatable. This is because most household use land in collective and household jointly cultivate family plots under the authority of men. During transfer in most case when the married one is women it is less probability of accessing family land since it is expected that she will accessed land through her husband that will be gained from his family.

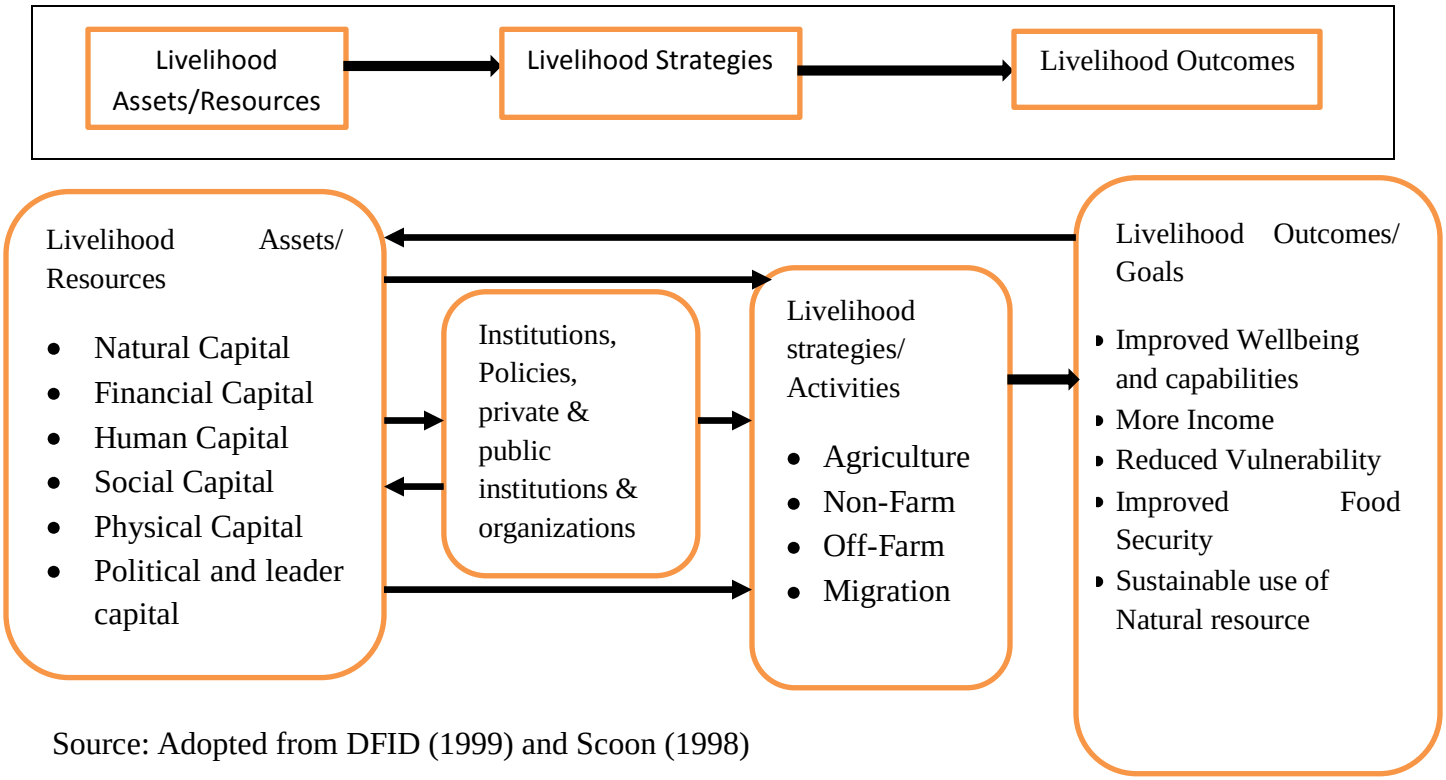
- Access to land through community membership- is another source of land and other resource to the household. This may take the form of access to land in common property such as common grazing land. In this case land can be accessed through becoming community membership and is allocated to individual through community governance structure (Wolf, 1996).
- Accesses to land via sales and rental market- This constitute the third form of gaining land by the household. Such means of land access especially by sales market is very debatable. This is because the established property right is not perfect and is restricted by government. In addition to this, market is not perfectly operates especially in developing countries and such imperfection needs government intervention. Unlike to land sales, land rental market remained the most important and widely practiced source of land for the land less household. This form of land access has dual advantage to the owner of the land and to the one who rented the land. One common evident is old aged land owner usually rented their land to the one in need. This type of land access may take the form of sharecropped in or sharecropped out.
- Access to land through government distribution and redistribution- as a source of land for the household, this may occur when the government distribute or redistribute land among household due to different reasons.

2.2.2. Sustainable Livelihood Approach (SLA)

The most popular approach that gives comprehensive and holistic way about the relation between peoples live and their livelihood is Sustainable livelihood approach developed by DFID. It enables to have clear understanding of the context of people's lives, the livelihood asset they have and the livelihood strategies they follow to meet their livelihood outcome. SLA is the means of understanding the complexity of people's livelihood especially the livelihood of the poor (Ellis, 2000). At the heart of the SLA are the livelihood asset-livelihood strategies–livelihood outcome nexus. In other word it give stress on the relation among asset, livelihood strategies take different institution and policies that affect livelihood in to account and livelihood goals in which people undertake to maximize their wellbeing and reduce poverty sustainably.

According to DFID, (1999) analyzing rural livelihood needs examining livelihood strategies which compose activities that provide household with a means of survival and also involve planned activities that men and women perform to build their livelihood. It also needs an examining livelihood outcome which is considered as the ultimate goal of livelihood strategies. Accordingly, these livelihood outcomes may include more income, increased wellbeing and reduced vulnerability, improved food security and more sustainable management and use of natural resource (ib id). The nexus exist among asset-strategies and outcome as described by DFID, (1999) and Scoone (1998) can be shown in the following figure.

Figure 1: Sustainable Livelihood Framework



Source: Adopted from DFID (1999) and Scoon (1998)

SLA as an approach to development started from 1990's onwards. Following this period, different authors tried to advocate SLA as development approach in their literature. Among these Chamber and Conway (1992), later Scoones (1998), Asheley and Carney (1999) Carney (2002), were notable. At the heart of all these authors advocacy of SLA is it should be people centered development approach. Development agencies like DFID (1999), FAO (2000), EU, () stressed on the important of SLA as development Approach and started to advocate livelihood approach as central to their programming and development intervention.

As a holistic and comprehensive method of addressing development priorities and issues, SLA primary focus is on people's livelihood (DFID, 2001). There are six core objectives of SLA as far as increasing sustainability of rural poor people live and livelihood is concerned as indicated in DFID, (2001). These are:

- More secure access to and better management of natural resources
- More secure access to financial resources

- A policy and institutional environment that are conducive for the emergency of multiple livelihood strategies and promote equitable access to competitive market.
- A more supportive and cohesive social environment
- Better nutrition and health, improved access to high quality education information, technologies and training.
- Better access to basic and facilitating infrastructure.

To synthesis the above objective sought by SLA, the first two objective focuses on the importance of livelihood assets, the third and fourth indicates the importance of better institution, policies and other supportive environment for the emergence and engagement of multiple livelihood strategies and the last two focus on the livelihood outcome.

2.2.3. Synthesis on Land Access-Livelihood Strategies and Household Wellbeing Nexus

Land access which is an integral part of any rural household livelihood and economy is important livelihood resource most of rural people depend on to bring their wellbeing. A livelihood strategy on the other hand represents the composition of activities engaged in by members of the households resulting in outcomes that provide well-being. Household well-being is directly related to livelihood selections. For example, households might engage in agricultural production, non-farm activities or off-farm activities or migration to other area as a livelihood strategy. The decision of the household to engage in one or combination of the above strategies also depends on the available livelihood assets on the hand of the household. And such action of engaging in livelihood strategies may achieve higher or smaller level of well-being. According to (Santiago et al, 2008) household asset base is important in deciding household to choose one or combination of livelihood strategies. Therefore, in this case land as one livelihood asset is strongly associated with the livelihood strategy choice of the household. Choosing best livelihood strategies may yield better household wellbeing. According to the above authors, improving asset access by the household is crucial because it will help to choose better livelihood strategies that provide higher level of well-being and sustainable development for households by reducing their risk exposure.

2.3. Empirical Review

The importance of employing different livelihood strategies by the household and its determinant factor was remained the focus of my study throughout the world in general and in developing countries in particular. Study by Ellis (2005) showed the importance share of non-farm livelihood strategies in Sub-sahran African countries. The share of income gained from non-farm activities account from about 30%-50% in Sub-sahran countries where as in South Africa it accounts for about 80% (ib id). Similarly, the World Bank (2009) also indicated that about 25 percent of rural households in Ethiopia earn some income from non-farm enterprises.

Here are the review of empirical studies conducted in the area of land access, livelihood strategies and household wellbeing.

A study was conducted aimed at examined the link between access to land, livelihood strategies and household wellbeing in rural land scarce areas of Tanzania using binary and multinomial logit regression by Lyatuu & Urassa, (2014). However, this study did not show broad spectrum of household wellbeing as well as the research was more focus on Tanzania socio economic context. Study conducted on the determinates of livelihood diversification evidence from Gozamin woreda of Eastern Gojjam using binary logit regression model result revealed that educational level, location, age, cooperative membership and institutional factors related to land insecurity are a determinant factors of livelihood diversification (Kassie, 2017). Furthermore, this study illustrated that household as becomes being members of cooperative and land secured increase household probability to engage in diversified livelihood activities; as household location near to rural town, their probability to engage in nonfarm activities (especially in trading) is increased; educational level of the farm household head had a negative impact on the livelihood diversification decisions of farm households and hence, farm households who attended secondary and higher had shown a lower probability of diversifying in livelihood activities compared to whom who do not have any formal educational background and home-distance of farm households from the nearest market place found to have the greatest influence on the diversification and hence, A one percent increase in the distance of farm households to the proxy market place the margin could lead to a decline in the probability of engaging in non-agricultural livelihood diversification activities by more than 3% units (Kassie, 2017). However, this study did not shown the link between land access, livelihood strategies and household

wellbeing as well as this study more focus on quantitative research approach. Hence, has thematic and methodological limitation. A study conducted on household livelihood choice factors at highland forest dependency areas of Tigray, Ethiopia using multinomial logit model and quantitative approach result revealed that educated and male-headed households are less likely to pursue forest-dominated activities (Babulo et al., 2008). However, this study did not focus on household who resides in land scarce areas, did not show the effect of livelihood strategies on household wellbeing and more focus on quantitative study approach.

Moreover, empirical analysis conducted in Kenya on land Access, land Rental and food security result reveals that land access has strong linkage with household food security. In this regard, the find further indicates households with small farms are not able to procure sufficient food through non-farm jobs to achieve comparable levels of food consumption per capita as their relatively land-abundant neighbors (Muraoka, Jin, Jayne, & Circle, 2014). Land rental markets are the most important means available to land-constrained rural households to access additional land for cultivation. However, this study did not shown wider issue of livelihood outcomes as well as more focus on quantitative approach. Hence, it has thematic and methodological as well as geographical limitation. Analysis conducted on poverty, food insecurity and livelihood strategies in rural Gedeo population growth and urban expansion was a major contributor for land shortage, landlessness and out migration and hence, limited Income opportunities including access to credit, poor agricultural practices; limited access to modern technological and agricultural inputs; illiteracy and lack of market information, etc affect food security status of household. On the other hand, the empirical analysis result illustrated that household livelihood strategies were environmentally unsound and legally unacceptable say massive firewood gathering and theft (Shumete, 2009). In fact, this analysis of study had not shown the practical link between land access, livelihood choice and household wellbeing.

Empirical study on the determinant of livelihood strategies choice was also conducted in Assossa, western Ethiopia using multinomial logistic model by Seid (2016). This study was focus to identify the factors that determine rural household livelihood strategies choice in the study area of Assossa district. Accordingly, the descriptive statistics result of the study revealed that 66.7% of the rural households combine farm with non-farm and/or off-farm activities to get their means of livelihood and the remaining 33.3% rely on farm activity only. The multinomial

logistic model analysis of the study also confirmed that age of household head, settlement, family size, frequency of extension contact, livestock holding, access to credit, training and fertilizer, membership in cooperative had significant impact on the choice of household livelihood strategies. However, this study employed only interview and focus group discussion as tools of primary data collection and forgets to include the primary tools of data collection for quantitative research i.e. questionnaire. The result of the study also revealed that farm size had less significant effect on livelihood strategies choice given the very nature of rural economy depend on land.

Study on rural livelihood diversification strategies in Sodo Zuria by using econometric analysis was conducted by Sintayehu et al (2017). The study indicated that sex of household head, family size, education level of household, dependency ratio and operational land size etc were found significant among the sample households who pursue different livelihood strategies. The study also found that choice of agriculture + Non-Farm + Non-Farm livelihood strategy was influenced by agro-ecology, land size, credit access, dependency ratio and training achieved (Sinatyehu et al, 2017). The result of this study was also confirmed by previous study done by (Eneyew & Bekele, 2015) in the same zone of Boloso sore woreda. According to this study in addition to the above variables, frequency of extension contact, distance of house of household to farm area, access to credit and distance of market were among the determinant of livelihood strategies in Boloso sore woreda.

Study by Bereket R. (2010) conducted in Wolayita zone, the case of Damot Gale woreda about rural livelihood diversification and its contribution toward household food security revealed that lack (insufficient) endowment of household with the major livelihood assets mainly land has affect household to produce sufficient food and to generate better income for their household requirements. As a result household diversification which includes engaging in off-farm and non-farm activities is the main livelihood strategy followed by household in the study. However, the study identified lack of startup capital, lack or poor access to credit service, lack of sufficient employment opportunities in the urban center with regard to migration as livelihood strategy, poor market condition and lack of knowledge and skill to undertake well-paid livelihood strategies as the main challenges for livelihood diversification.

Based on the theoretical and empirical review conducted so far, the following synthesis, determinant factors for land access, livelihood strategies and household wellbeing will be discussed.

2.4. Determinant of Land Access

Land access which is an important component of rural economy can be determined by different factors. These factors could be either socio-demographic factors or institutional in nature. Among other things, the following are the most important determinant of land access as confirmed by different literatures.

- **Sex of household head**- Sex which is the biological and physiological differences between male and female is one determinant factor that affect to access land in society. Due to cultural and tradition defined role, social mobility limitation there will be unequal and differential access to asset and resource. Many literatures like Boserup (1970), Gkadwin and Mcmillan (1989), Von Braun and Webb (1989) reported that women lack access to basic assets such as land, credit and farm input in many developing countries. Fafchamps (1998) stated that women unequal access to land is source of not only inequality but also inefficiency in the activities they engage. This could be the bedrock for poor countries to develop. This would become serious challenge of development when access to land is denied by female headed household. This is because they will have many household members and the head of the household should manage the main livelihood activities that enable to feed the family. Therefore, in this research the concept of sex and gender can be used interchangeably as a determinant of land access.
- **Age of the household head**- Many studies conducted so far on the effect of age on land access confirmed that age has significantly determined to get access to land. Study by (Eneyew & Bekele, 2015) stated that young household head cannot get enough land. This is due to either land scarcity or lack of assets and resource to purchase land for their survival in land market transaction. As compared to young, older household head had the opportunity of accessing land through different means.
- **Marital Status of the household head**- married and other marital status did not have the same opportunities to access land this is mainly married one can access land that will be gained from inheritance, gift and transfer at marriage. The same is true for married women.

They can get access to land from their husband. Therefore, marital status is an important determinant of land access.

- **Education level of Household head**- As education level of the household increase, the probability to engage in highly paid wage labor or non-farm activities also increase. This will give the household head to obtain more income that will enable to get access to land through market transaction like buying and renting of land used as a field of farm activities.
- **Family size**- As family increase, the land accessed by the household also getting diminish. This is especially true when the member of the family is men and got married. In many rural areas as men got married, land is given in the form of gift. Therefore, this will have effect on the remained member of household.
- **Distance to city**- As a result of expansion of urbanization, rural land became gets scarce and the opportunity to get land became difficult. Therefore, rural areas who are near to city suffered from the process of urbanization and industrialization.
- **Period of residency (year of continuous stay) in the village** - this denotes the length of residence in the area that were used to live. As described by Lyatuu & Urassa, 2014 , when the period of residence in the village is high, there is likelihood of accessing land through government and other distribution is high.
- **Total livestock endowment**- total livestock endowed by the household may affect the size of land household can have through the fact that livestock rearing is one form of agricultural practice that need land to operate it. In addition to this, through the income it generates it will also affect household land size positively.
- **Credit Receive**- Credit is source of financial income for the household in most rural area with poor resource and income base. Household use credit receive from different source for a variety of purposes including land rent, sharecropping in and purchase of different agricultural inputs and technologies.
- **Cooperative membership**- household can access land especially common land through being virtue of member to different formal cooperative. These cooperative agencies have common land used for the benefit of their members to engage in different income generating activities. Therefore, some household can become benefited from these forms of cooperatives in different area.

- **Well Being Status of the household**- wellbeing status of the household in the study area also has influence land size through different way. If household was under category of well off, this indicated the household had more income and sustainable livelihood strategy to follow. Therefore, through the income they had, they will access land either from renting, share cropped in or any other form of land source like being member to cooperative etc.

2.5. Factors that affect Livelihood Strategies Choice

Livelihood strategies to be followed by the household will be determined by different factors. These factors could be either socio-demographic characteristics or economic and institutional in their nature. The following are some of the determinants of livelihood strategies choice that was confirmed by many studies.

- **Sex of household**- As described in the above due to different and unequal access to natural resource especially land by male and female, household livelihood strategies (activities) will also be different. Ellis (2000) stated that men and women have different access to resource and opportunities that enable them to pursue their livelihood strategies. As explained by (Eneyew & Bekele, 2015) since most female headed household invest their time on unpaid domestic activities like children keeping, water fetching etc, they have less opportunity to engage in off-farm or non-farm activities as compared to men. The effect of sex on household livelihood strategies choice was also confirmed by Galab et al, (2002), Berhanu (2007) and Adugna & Wegayehu (2012).
- **Age of household**- As confirmed by Eneyew (2015) empirical studies, young household cannot get enough land to engage in agricultural activities and support their livelihood. As a result they could be pushed to engage in non-farm and off-farm activities. In contrast to this older household head which are less active are more likely to depend their source of livelihood on farm than off-farm or non-farm activities (Reardon et al ., 1992: Adugna, 2007) This idea was also supported by studies conducted by Barret et al (2001), Destaw (2003), Rao et al (2004), Mulat et al (2006) and Khan (2007).
- **Marital Status of the household**- It is difficult for widow or divorce women to have access land as compared to married women. Married women can access resources through their husband. Therefore marital status through the opportunity they get to access resource may influence household choice of livelihood strategies.

- **Educational level of Household head**- Study by Barret et al (2001) confirmed that education determined household choice of livelihood strategies and give the opportunity to engage in non-farm activities especially to the one which will be highly paid. Ellis and Freeman (2005) argued that as the household head has a relatively high level of education, non-farm livelihood strategies were more likely to happen in households. In general, education which helps the household to acquire with better knowledge of choosing better livelihood strategies is important determinant of household livelihood diversification. This idea was confirmed by the finding of Galabat (2002), Berhanu (2007) and Khan (2007).
- **Livestock Holding in TLU**- since Agricultural activities includes the rearing and breeding of livestock and also since agricultural activities in most developing countries assist by animal especially oxen, livestock holding have influence on the household choice to engage in agricultural activities or other non-farm/off-farm activities. If household did not possess livestock, they most probably forced to engage in non-farm, off-farm activities or prefer migration to get income and source of living for their livelihood. The effect of livestock holding on household choice of livelihood activities was confirmed by studied conducted by Adugna and Wegayehu, (2012) Tesfaye (2003), Berhanu (2007) and Khan (2007).
- **Family Size**- As family size increase, the demand for food to sustain the family members also increases. And there will be surplus labor beyond the farm activities capacity to absorb. This surplus labor of family members may engage in non-farm, off-farm activities or may migrate to other place to get extra income and food for their livelihood. Therefore family size have an effect on the household to choose diversified livelihood strategies in order to sustain the demand for food and income for the member of the household. This idea was in line with the finding conducted by Bozermer and Lerman (2003) and Khan (2007) which stated that the larger the family sizes, the higher the probability to participate in varied income sources.
- **Dependency ratio**- The proportion of the population not in the work force who are 'dependent' on those of working-age is called dependency ratio. A study conducted by Khan (2007) revealed that with increase in dependency ratio of the household, the ability to meet subsistence needs declines and the dependency problems make it necessary in the household to diversify their income source. When the dependency ratio of the household is

high, the household follows diverse livelihood strategies because the ability of the farm activity to meet food and income to the household decrease.

- **Land Access (land Size)** - Land is the backbone for rural economy especially for agricultural activities. Study conducted by Adugna & Wgayehu (2012) found that rural household with access to land especially more land size tends to follow Agricultural extensification which meant by the practice of farming which is previously unused land rather than diversifying from Agriculture. This is because they draw incentives of land productivities. As contrast to this idea, small landholdings in many countries limit the availability of agriculture as a livelihood strategy, forcing many smallholders to diversify in to other livelihood options (Ellis and Freeman, 2005).
- **Frequency of Extension contact**- Since the objective of extension is to assist farmers to change their outlook toward the difficulty they got on agriculture and help them to adapt better solution to their livelihood As described by Samuel (2001), knowledge and practice of household about diversification of activities may enhanced as they got more information, skill and decision making capabilities from extension works. This was also confirmed by finding of Adugna & Wgayehu (2012).
- **Access to Credit**- Credit may enable the household to get additional source of capital that will either be used in farm activities or in other non-farm activities like conducting small businesses. Therefore access to credit may influence household livelihood diversification.
- **Distance to city**- As distance to nearby city became small, this gives the household to migrate in to cities and look other available livelihood strategies to engage on and gain means of survival.

2.6. Determinant of Household Wellbeing

As described above the ultimate objective of livelihood strategies pursued by the household is to bring about desirable livelihood outcome. An increased wellbeing is an indicator of desirable livelihood outcome. However, to bring about increased household wellbeing need choosing appropriate livelihood strategies. Therefore household wellbeing will be determined by the livelihood strategies preferred by the household given land access status in to account. Therefore, the following are the most important determinant factor of household wellbeing as confirmed by

different literature given other things constant. These factors are grouped in to two as demographic variables and socio-economic factors.

2.7.1 Demographic Factors

- **Age of the household members** – is important in the when the age of the household head between 22 and 35, this does mean that they are productive and energetic capable of working at different area under different circumstance. These will bring to household with an additional income that will help them to attain wellbeing (Lyatuu and Urassa, 2016).
- **Sex of the household head**- Sex of the household head is an important determinant of household wellbeing. Due to different tradition and culture, women are deprived of accessing different type of resources especially land and credit. Such condition seriously endanger female headed household to attain their wellbeing (Boserup, 1970).
- **Marital status of the household head**- As described above marital status other than married especially single one are more likely to attain wellbeing through the income and activities carried out by themselves. This is because they had small family size as compared married one. The same is also true for married men household head.
- **Educational status of the household head**- Different literatures had confirmed the positive role of education on the overall health and wellbeing of individual in particular and the household in general. Study done by Yacob et al (2016) revealed that educational status of the household positively influences the household collective wellbeing. This is due to the fact that it will help them to get more paying job that provide them with more income for their livelihood.
- **Family size of the household-** Number of household members who share food from the same kitchen and live under one roof can also determine household wellbeing. This is true when the working force exceeds the dependent in that they can generate income from diverse portfolio of livelihood strategies and share the burden of household head among the members.
- **Health status of household head**- health condition of the household head can directly affects the household wellbeing (Olfson et al, 2003). In other way, health status of the household is important in that it makes the household economically active and engage

actively in different livelihood strategies and in turn bring different livelihood outcome in which wellbeing is the one indicator of the outcome.

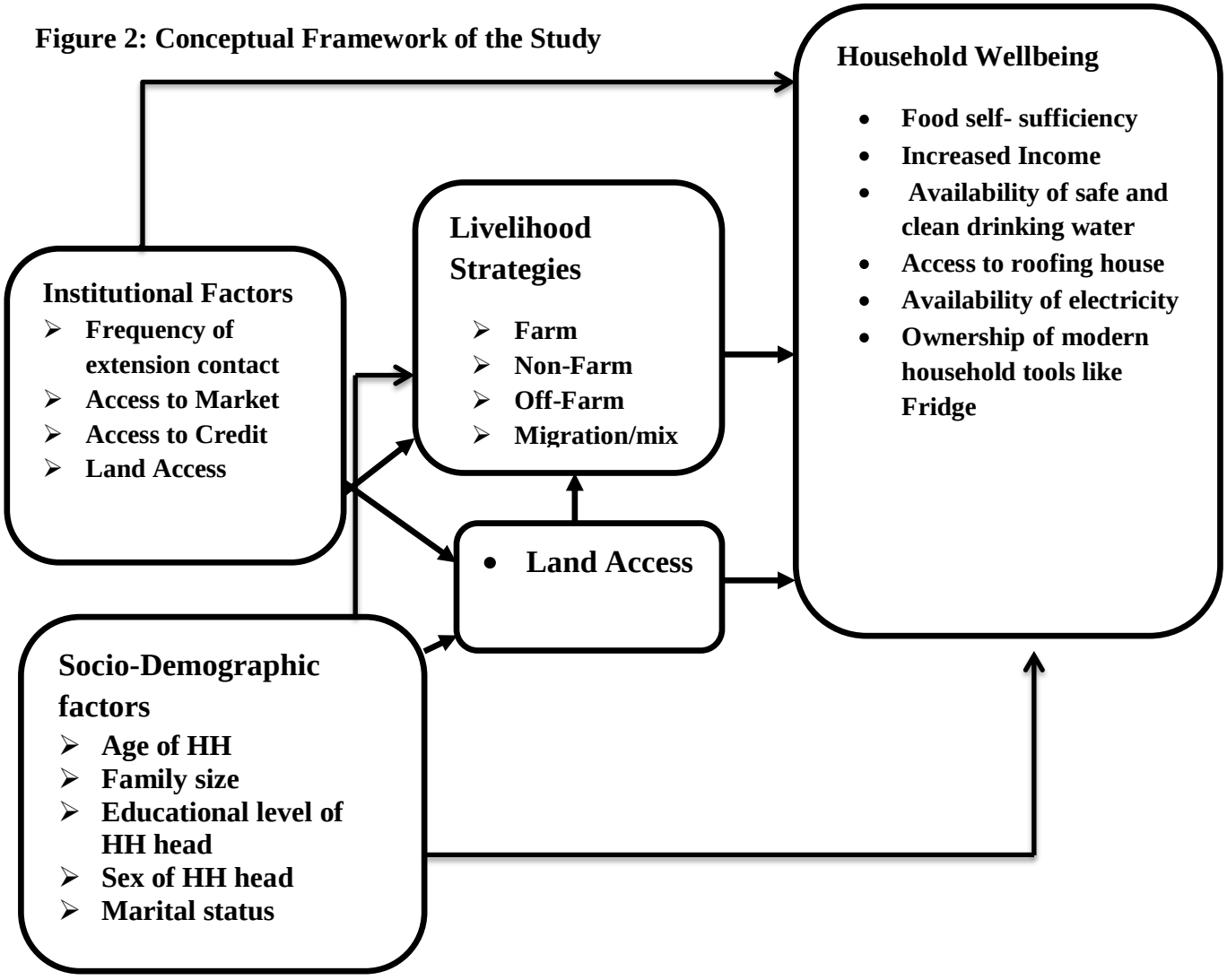
2.7.2 Socio-Economic Factors

- **Land Access**- Land is the most important asset that rural household need to engage in different livelihood strategies. These different livelihood strategies have result different form of livelihood outcome. Therefore, land has an effect on the household wellbeing. Lyatuu & Urassa, 2014 stated that out of the total impoverished and poorly wellbeing household in rural Tanzania, 20% and 25% were land less and those with inadequate land .
- **Livelihood strategies**- Different livelihood strategies or activities have different livelihood goals and outcomes. As a result of this livelihood strategies have an effect on the household wellbeing. Household participation in diverse livelihood strategies like engaging in off-farm and non-farm activities plays an important role in providing household with an alternative source of income and employment. Different literatures indicated that household livelihood diversification (engagement in non-farm, off-farm activities) brings income that could enable household to be self-secured against likely shocks, overcome farm credit constraints and enhance farm investment, absorb labor surplus and ultimately improve household wellbeing through increased total income (Barret et al, 2001; Reardon et al, 2001 and Hoang et al, 2014).
- **Household access to credit**- Credit is the most important option of attaining means of livelihood for the household. It is important in determining the livelihood of resource poor household. Since it is a source of finance and other goods for the household, it has the potential in determining household wellbeing.
- **Household income**- Income obtained from different source will have positive impact on the wellbeing of the household. Income is source of every material needed by the household member to sustain their living. More income is among the indicator of livelihood outcome which will have important contribution in bringing wellbeing status of the household.

2.7. Conceptual Framework

Land access as one variable in this research can be influenced by different socio-demographic and institutional factors. Among other things, Age of the household head, sex, marital status, educational level of the household head, family size of the household, distance to city and period of residency in the area are some of the determinant of land access. On the other hand, livelihood strategies are also affected by factors like land access, socio-demographic and institutional factors. Finally, household wellbeing which is the ultimate goal of every human being is affected by land access, livelihood strategies and socio-demographic and institutional variables.

Figure 2: Conceptual Framework of the Study



Source- Own constructs (2018)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter will present the research methodology and statistical procedures that will be employed in conducting this research. Here the Study Area, sources of data and types of data, the target population, sampling technique, sample size, instruments for data collection and data analysis methods will be discussed with the rationale for using each.

3.1. Description of Study Area

As cited in Mulugeta (2004) the total area of Ethiopia is 1.13 million km^2 and is also divided in to nine regional state and two administrative towns. Southern Nation Nationality and peoples of Ethiopia is among the regions in Ethiopia. According to CSA (2007), SNNP had a total population of 14, 929,548 and has total of 14 zones and 77 woredas (districts). Wolayita zone is among the zones found in SNNP. Wolayita zone has a total of 12 districts and one town administration named Soddo town. Based on population and housing census of central statistics of Ethiopia conducted in 2007, Wolayita has a total population of 1,501,112 where 88.5 of its population are rural dwellers and the remaining 11.5 are urban inhabitant. Soddo town which is the administrative capital of wolayita zone is found 156 km south from the Hawassa which is the capital city of the south region. Soddo zuria wereda (district) which was the focus of the study area is among the districts in wolayita zone of SNNP region and is bordered in the north by Damot Gale wereda, in the south by Humbo wereda, on the south east by Offa wereda , on the east by Damot Woyde wereda and on the west by Offa wereda.

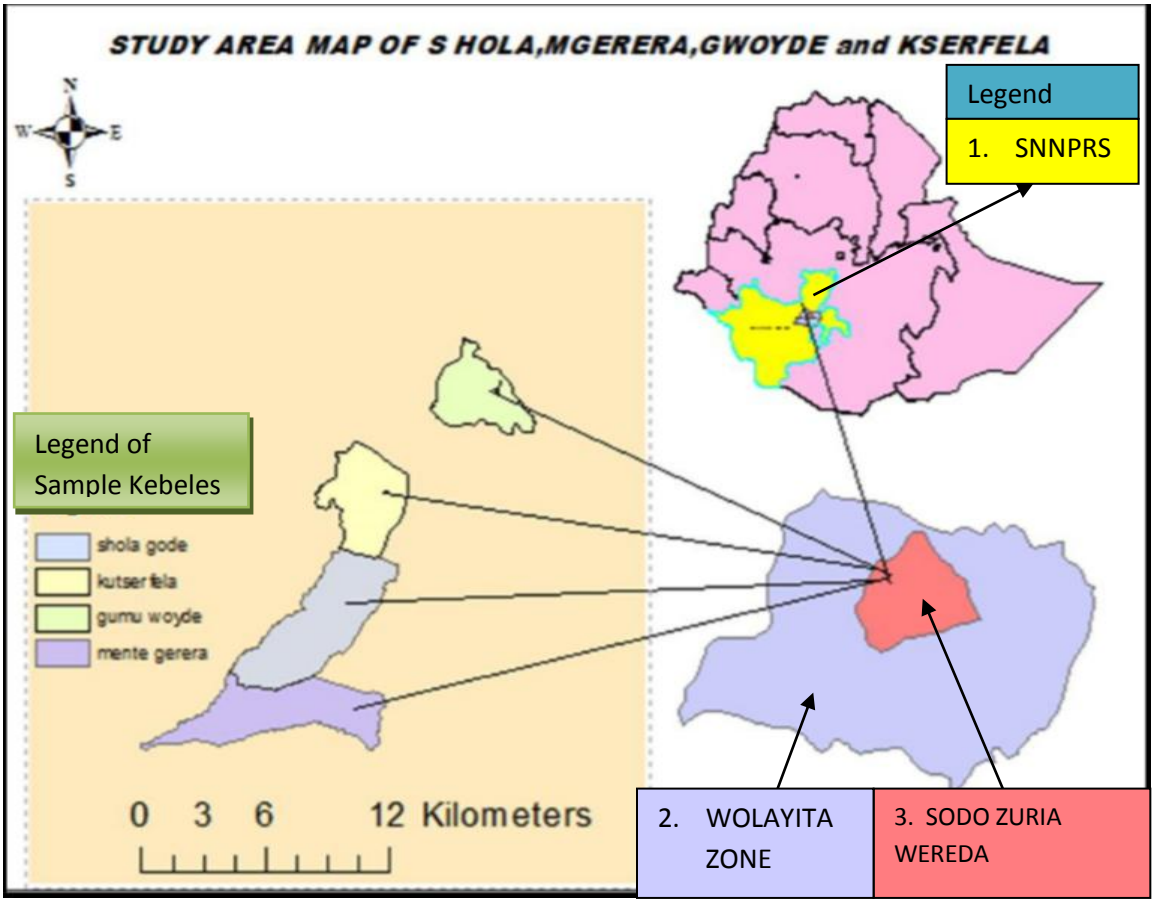


Figure 3: Map of Study Area

According to 2009 annual statistical abstract of the region's bureau of finance and Economic development, the woreda has a total population of 179110 which is the second most populous wereda next to Boloso Sore woreda in the zone. Out of the total population 88,321 are male and 90,789 are female and 80% from the total population size are rural dwellers. The total household size of the woreda is 31064 in which 29532 are male headed household and 1532 are female headed household and the average family size is 4.8. The woreda has a total area of 380.408 sq. km and the mean annual rainfall and mean annual temperature is 1060 mm and 19.5o^{c} respectively (BoFED, 2017). Out of the total area 55.9% is covered by crop cultivating area, 24.35% was forest land, 8.18% is covered by grazing land, 0.45% is covered by water and the remaining 11.12 is used for other. The population density per square kilometer of the woreda is 470.83 which are very high. The woreda is located at 336 km away from Addis Ababa.

Soddo Zuria woreda is characterized by two agro-ecological zones which accounts 90% of the woreda is covered by mid land (Woyna dega) agro climatic zone and the remaining 10 % is

characterized by highland (dega). As far as the topography of the area is concerned, the study area has topography of plateaus, hills rolling and rugged mountain systems.

According to Sintayehu et al (2017) the livelihood system of Soddo Zuria woreda mainly depends on agriculture (farming and animal rearing). In other word, the community of Soddo Zuria woreda depends mainly on rain-fed agriculture and livestock rearing for their means of livelihood. According to the agricultural rural development office of the wereda, farmers of the study area practiced most of the time farming activities which used to grow in the area mixture of cereal crops and pulses such as teff, barley, wheat, maize, horse bean etc. This implies that agriculture is the main activities in the study area where household gained their source of livelihood and considered as source of subsistence. Household in Soddo Zuria Woreda also practiced diversified livelihood strategies such as non-farm and off-farm activities, migration and remittance as source of livelihood outcomes.

Sintayehu et al (2017) stated that different factors contributed to low agricultural productivity and the engagement of households in to livelihood diversification strategies. Among these factors land shortage, environmental degradation due to natural and man-made factors, loss of land fertility due to prolonged cultivation, uneven distribution of rainfall and consequently unseasonal occurrence of rainfall etc were the major ones.

3.2. Justification for the Selection of Study Area

Wolayita Zone in general and the study area of Soddo zuria in particular are considered as the most densely populated area. This made the area to be land scarce which forced the household to hold small land size or no land at all. According to Dessalegn, (2007) two-third of wolayita's households has land holding less than 0.5 hectare. This made the livelihood of local household very difficult to attain better livelihood outcome. According to Soddo zuria woreda agriculture and rural development office the average land holding size of the woreda is 0.25 hectare (one timad) which is very small as compared to the population size. On the other hand few researches (Adugna & Wegayehu, (2012); Bereket, 2010) were conducted in Wolayita zone. However, these researches exclusively focus on livelihood diversification and determinant of livelihood diversification as well as contribution of livelihood diversification toward food security. Therefore, land scarcity as one challenge of livelihood asset pushes the households in Soddo

zuria woreda in particular and wolayita zone in general to engage in livelihood diversification so as to achieve better livelihood outcome including household wellbeing. Soddo zuria woreda is one of the woreda in the wolayita zone that is near the major city in the zone. This affects the woreda total land size to be decrease as a result of urbanization and industrialization of the nearby city Sodo.

Given these and other factors like almost all of its inhabitant are rural dwellers in which agriculture is the mainstay of the people in the woreda in to account, selecting sodo zuria woreda as study area is appropriate to show the effect of land access on livelihood strategies and the implication that it has on household wellbeing.

3.3. Research Design

A cross sectional research design was employed because of its appropriateness to obtain information on the effect of land access on rural livelihood strategies choice and household well-being, determinate of land access and livelihood strategic choice in Sodo Zuria district, Wolayita zone at once time occasion from a sample population to describe large population without environmental manipulation (Creswell and Clark, 2007). Focus group discussion and key informant interview will also be employed with community member comprises of household heads, youth and key government official. Household survey questionnaire will be also applied to gather information about issue related to the themes of the study from household heads.

3.4. Research Approach

Based on the method of data collection, this research was applied ad hoc (one time research). This implied that cross sectional data collection was conducted in this study. This is because of the time boundary and resource invested in the study. As far as nature of inquiry is concerned, this study was employed both descriptive and explanatory research. The descriptive method of research was used to describe the opinion, characteristic and behaviors of respondents on the study whereas the explanatory method was used to test land access and other factors which affect livelihood strategies choice and household wellbeing. In general, survey method was used in this study due to the fact that the study aims to describe preferences, opinion, and attitudes of the respondents as well as to use statistical value and cross sectional way of data collection,

Based on the type of data, this study employed both quantitative and qualitative types of research. Using quantitative and qualitative approach together in a particular research will enable us to understand the issue intensely (Kothari, 2004). Therefore, this study employed both qualitative and quantitative approach to make the result more strong and to be generalized for the total population from sample population. Carvalho and white cited in Holland et al, (2005) asserted that both quantitative and qualitative methods are often more powerful when combined. Dominantly, a quantitative study approach with a complementary qualitative approach was applied for this study. Therefore sequential mixed research approach was employed. A quantitative type of research was used to generate data in quantitative form whilst qualitative types of data were applied to explain the subjective assessment of attitudes and opinion of respondents about the subject area of the study. On the other hand, those finding which cannot be quantitatively analyzed was analyzed and interpreted qualitatively. Therefore, qualitative approach was employed through the use of in-depth interview and focus group discussion data gathering instrument with community members comprises of household heads, youth and key government official. This is due to the fact that the composition of diverse heterogeneous population group enabled to come out the real facts and issues related to rural livelihood challenges and land access as well as its effect on household wellbeing. Quantitative approach was also employed to know associated and determinate factors of land access, livelihood choice and its likelihood effect on household wellbeing.

Based on the degree of theorization, this research was followed empirical based research. It was started with working hypothesis, then data collection and finally aimed to prove or disprove hypothesis. Indeed, based on the logical reasoning this study was applied deductive reasoning approach. Accordingly the researcher was assessed theories, develop hypothesis based on theories and finally will reach on generalization based on the finding of the study. Hence the research approach of this study was moved from general to specific.

Based on the use of output, this research was employed applied research which could enable the researcher to solve the practical problem. Based on the environment in which the research carried out, this study was applied field setting research. Thus data was collected through travelling to different selected sample kebeles of Sodo Woreda, wolayita zone. Therefore, this was made the research to be field oriented.

3.5. Target Population

The total study populations of this research were the total household of Soddo zuria woreda, Wolayita zone. Since the unit of analysis for this study was household, respondents were drawn from household heads.

3.6. Sample Size Determination

Rural household heads were used as a source of population for quantitative data collection since household heads assumed to be responsible for family matter and hence, expected to have information about the issue other than other household members. Hence, household was used as a unit of analysis.

There are several methods for determine the sample size of respondents from the finite population. Since the study population is finite, the sample size of the study is determined based on Kothari formula (2004). Such method is the most appropriate way of sample size determination for finite population. This is presented as follow:-

$$n= \frac{Z^2.P.q.N}{e^2.\ N-1\ +Z^2.q.p}.$$

Where n represent the sample size for finite household

N= represent the total size of household

p= sample proportion of successes (frequency estimated for a sample of size n), where p is 0.5 which is taken for all developing countries population and p + q= 1.

q= 1-p

z= the value of the standard derivate at 95% confidence level e= acceptable error

Thus, N= 31064 p= 0.5 q= 0.5 z=1.96, e=0.08 which is 7% of margin error

Therefore, $$n= \frac{1.96^2.0.5.0.5\ .31064}{0.07^2.\ 31064-1\ +1.96^2.0.5.0.5}$$

n= 195

Therefore, 195 sample households and by assuming 4 % contingency rate in order to compensate for household that the researcher was unable to contact, the total sample size household was became 203.

Accordingly, to determine sample size of the selected kebeles, similar formula by Kothari was used. Therefore, the sample size of each purposively selected sample kebeles was computed as follow;

$$n_{(\text{kebele i})} = \frac{N(\text{kebele i}) * n(\text{all kebeles})}{N(\text{all kebele})}$$

Where $n_{(\text{kebelei})}$ is the sample size at kebele i level

$N_{(\text{kebele i})}$ is total household size of kebele i

$n_{(\text{all kebeles})}$ is the sample size of all kebeles in the woreda that was considered as total sample size of the woreda

$N_{(\text{all kebeles})}$ is the total household of the selected area

Therefore, in order to determine sample household at kebele level, we can compute as follows;

Gurmu Woyde kebele have total household of 1510 which is N(kebele i), $n_{(\text{all kebeles})}$ is 195 and N(all kebeles) is 6227. Then

$$n_{(\text{Gurmu Woyde kebele})} = \frac{N(\text{Gurmu koysha kebele}) * n(\text{all kebeles})}{N(\text{all kebele})}$$

$$n_{(\text{Gurmu koysha kebele})} = \frac{1510 * 195}{6227}$$

$$= 47$$

Mentegerera kebele have a total household of 1912, $n_{(\text{all kebeles})}$ is 195 and N(all kebeles) is 6227. Then

$$n_{(\text{Mentegerera kebele})} = \frac{N(\text{mentegerera kebele}) * n(\text{all kebeles})}{N(\text{all kebele})}$$

$$n_{(\text{Mentegerera kebele})} = \frac{1912 * 195}{6227}$$

$$= 60$$

Kuto Sarfela kebele have a total household of 1699, $n_{(\text{all kebeles})}$ is 195 and N(all kebeles) is 6227. Then

$$n_{(\text{Kuto Sarfia kebele})} = \frac{N(\text{kuto Sarfia kebele}) * n(\text{all kebeles})}{N(\text{all kebele})}$$

$$n_{(\text{Kuto Sarfia kebele})} = \frac{1699 * 195}{6227}$$

$$= 53$$

And finally, Shola Kodo kebele have a total household of 1106, $n_{(\text{all kebeles})}$ is 195 and N(all kebeles) is 6227. Then

$$n_{\text{(Shola Kodo kebele)}} = \frac{N(\text{Shola Kodo kebele}) * n(\text{all kebeles})}{N(\text{all kebele})}$$

$$n_{\text{(Shola Kodo kebele)}} = \frac{1106 * 195}{6227}$$

$$= 35$$

Therefore, by adding the contingency sample household two for each four sample kebeles equally a total of 203 sample households, 49 household from Gurmu Woyde kebele, 62 households from mentegerera kebele, 55 household from Kuto Sarfela and 37 household from Shola Kodo kebele will be the sample size respondents

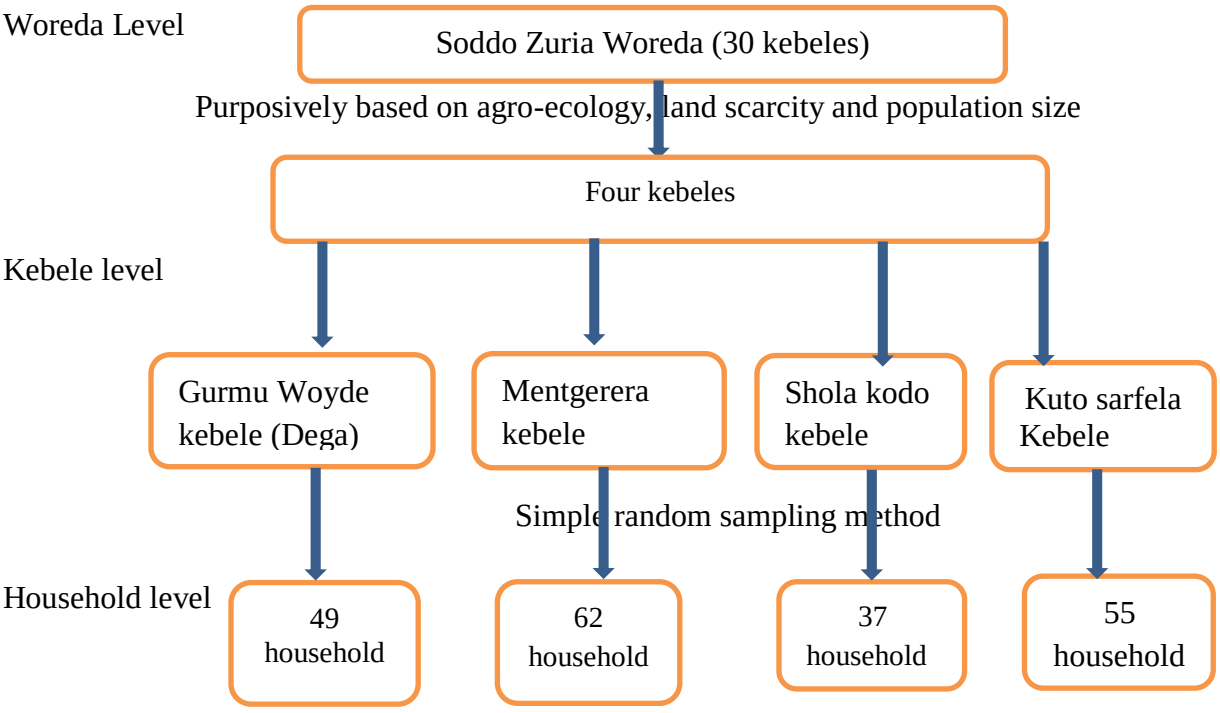
Table 2: Summary of sample size determination of the study area

	Target population of the study	Number of household (N)	Formula	Sample size taken	Sampling Technique
Woreda level	Sodo Zuria Woreda	31064	n= $\frac{Z^2.P.q.N}{e^2.\ N-1\ +Z^2.q.p}$	195+8 households	Kothari (2004)
Kebele level	4 kebeles namely, GurmuWoyde Mentgerera, Kutosarfela and shola kodo kebeles	6227 households	---	---	Purposive sampling
Household level	Gurmu woyde kebele	1510 households	ni= $\frac{n*Ni}{N}$ = $\frac{195*1510}{6227}$	47+2=49	Simple random sampling
	Mentgerera kebele	1912 households	ni= $\frac{n*Ni}{N}$ = $\frac{195*1912}{6227}$	60+2= 62	Simple random sampling
	Kutosarfela kebele	1699 households	ni= $\frac{n*Ni}{N}$ = $\frac{195*1699}{6227}$	53+2=55	Simple random sampling
	Shola kodo kebele	1106 households	ni= $\frac{n*Ni}{N}$ = $\frac{195*1106}{6227}$	35+2=37	Simple random sampling

3.7. Sampling Techniques

Soddo zuria woreda has a total of thirty kebeles. To address the objectives of the research, the sample respondents was rural household heads including male and female. Multi-stage stratified sampling technique was used to select the study samples at the household level. In the first place from the total 30 kebele, four rural kebele was purposively selected based on land scarcity and population size and agro ecological zone of the kebeles (one from dega i.e Gurmu Woyde and the remaining three from woyna dega). The selected sample kebeles were different from the remaining kebeles found in the study area in terms of the population size they hold and the intensity of land scarcity according to the data obtained from the woreda bureau of finance and economic development. Hence, four Kebele was selected accordingly. Thereafter since in rural areas the population distribution assumption is normal, sample households was selected randomly within each kebele, to give every household equal chance of inclusion in the sample.

Figure 4: Summary of sampling procedure



3.8. Data Type

The study was used both primary and secondary data type. To do so, both Primary and Secondary sources was employed. Primary data was collected from selected household heads

who used to live in the sample Kebeles and other concerned government bodies. Secondary data has been gathered from reports and statistical data of the woreda and kebeles, earlier empirical studies in related areas, published materials, and internet sources.

3.9. Data Collection Tools and Techniques

In order to collect an available and sufficient data which could answer basic research questions, selecting an appropriate and sound method, tools and techniques of data collection have a considerable importance in justifying the validity of research. To obtain relevant data from different sources, multiple data gathering techniques and tools was employed for triangulation purpose. The following are the major data collection tools and techniques that were used to collect relevant data that was help to answer the research question so as to achieve the objective of the research.

3.9.1. Primary Data Collection Tools

This study employed primary data collection tools to get primary data type. This primary data was obtained from sample household of the study area through household survey questionnaire and other administrator of the woreda and kebele through key informant interview. FGD and field observation was also employed to collect primary data. The following primary data collection tools were employed used. Thus:-

Household Survey questionnaires: Household survey questionnaire was used for gathering quantitative data in order to assess the socio-demographic factors that influence land access and the effect of land access toward the choice of livelihood strategy by the household as well as household wellbeing.

In order to effectively communicate with 203 household heads respondents during data collection, the questionnaire was first developed in English and then translated into Amharic language. Data collection was carried out by enumerators who have degree and were familiar to the study area. Accordingly, four well trained and experienced enumerated and who are familiar to the geographic and socio-cultural characteristics of the study areas were recruited and used one for each selected kebele. To ensure data collection quality, a half day orientation workshop was organized and discussed on the tools with the enumerators. The researcher supervised the overall data collection activities. Prior to starting of data collection, each four enumerators was

filled four questionnaires in order to aware the researcher whether there is clarity or vagueness of filling the questionnaire and this was serve as a kind of pilot survey.

Individual key informant interview: Semi-structured interview was conducted as method of data collection. This tool was used to triangulate and strengthen research findings gathered through quantitative approach in order to understand more about livelihood strategies and determinants. A total of eight Key informant interview was carried out with Soddo zuria woreda responsible government bodies, kebele administrators and community residents (male, female and youth). Moreover, life history narratives and storytelling method was also used to capture possible experience in relation to livelihood in order to validate qualitative finding. Key interview was conducted by the researcher in order to come up with the real feeling and perception towards the issue.

Focus Group discussion- Bryan (2004) explained that FGD helps to identify important and significant issues related with a given topic. FGD as a data gathering instrument with community members comprises of household heads, agricultural experts and other youth m male and female was conducted to gather and know more information about their collective awareness and perception regarding the study subject. Four FGD one in each selected kebele comprising each 7-8 persons with different background were conducted to come up with more information about the research topic. Conducting more FGD above the proposed one is very important to gather more deep and detailed data about the topic under study. However, different constraints like time constraint, financial and other make the size of FGD to be conducted in to four.

3.9.2. Data from Secondary Sources

Different secondary sources of data were also assessed and take in to consideration to collect secondary data type for the study. Among these books, journals, published and unpublished materials, assessment and monitoring report, policies, strategies, annual plans and reports were consulted to enrich the research.

3.10. Method of Data Analysis

The study employed both quantitative and qualitative technique of data analysis in order to analyze both primary and secondary data obtain from different source. Below are some of the techniques that were used as data analysis.

3.10.1. Quantitative Data Analysis

Quantitative raw data collected through household survey questionnaires was organized and encoded in to SPSS 20, and then transferred to STATA 13 software packages. Among the quantitative data analyses tools that was employed by this research includes descriptive statistical tools (table, chart, frequency, chi square and t-test) and inferential statistical tools such as regression analysis.

3.10.1.1. Descriptive Statistics

Once raw quantitative data was collected, there is a need to summarize and display the information in to a readily digestible form. Ordering the data according to their magnitude; compiling them into tables, or Graphing them to form a visual image are very important.

Descriptive statistics frequencies, tables, percentage, mean techniques were used using SPSS software version 20. The results were presented through pie chart, histogram and tables. Furthermore, to know the association between dependent and independent variables simple t-test and chi-square test was employed.

3.10.1.2. Regression Analysis

Data collected through survey questionnaire was analyzed and interpreted using econometric analysis to examine the determinate of land access, livelihood strategies choice and also factors that affect household wellbeing. Ordinary least square model, multinomial logistic model and order logistic model were employed to determine the relationship that will exist between dependent and independent variables. The analysis was done through STATA 13 software version.

3.10.2. Qualitative Data Analysis

Qualitative data collected through key informant interview and focus group discussion as well as field observation was analyzed concurrently and thematically with quantitative data analysis based on the finding of the study through narration and explanation. Comparison of data gather from qualitative source was also used as an analysis technique. It was used to compare the findings gathered from household through questionnaire with the finding that was obtained from

key informants of woreda or kebele level administrators and other development experts through interview and focus group discussions.

3.11. Models Specification

In order to estimate and measure the relationship that was exist between dependent and independent variables, econometric model analysis was conducted. Accordingly, ordinary least square model, multinomial logistic model and order logistic model was employed. When the dependent variable has continuous outcome, it is important to use ordinary least square model to have better result. Multinomial logistic model is perfect when the dependent variable is expressed by more than two categories or when it have more than one outcome and finally when the dependent variable has natural order responses or options, order logistic model is preferable.

3.11.1. Ordinary Least Square Model

In order to meet objective which stated to examine determinant of land access, ordinary least square model was employed since the dependent variable has continuous outcome that is the variable takes values ranging from zero to finite. This shows that it is a continuous. The presence of continuous dependent variable in the model brings a unique estimation and interpretation challenge and has its own unique features that require a brief discussion (Guajarati, 2004).So the linear probability model is a viable option. Hence, ordinary least square Model (OLS) is a viable option due to continuous dependent variable outcome. Thus, ordinary least square model formula is specified as follow:-

$$Y=\beta_1 + \beta_2 X \qquad 0<\beta_2<1$$

In the above formula where:

Y = dependent variable i.e. Land size (ranges from zero to finite)

X = independent or explanatory variables

B_1 = the intercept

β_2 = the slope coefficient (MPC)

Allowing the inexact relationship between explanatory variables in the model will make the equation as follows:-

$$\boldsymbol{Y = \beta_1 + \beta_2 X + u}$$

Where Y = dependent variable i.e. Land size (ranges from zero to finite)

X = independent or explanatory variables

B_1 = the intercept

β_2 = the slope coefficient (MPC)

u=disturbance/error term

As discussed above, ordinary least square model was employed to examine the determinant of land access in the study area. The following are the dependent and independent variables description in the ordinary least square model examination of land access.

3.11.1.1. Hypothesis and Definition of Variables for Examining the Determinant of Land Access

As discussed above ordinary least square model was employed to examine the determinant of land access in the study area. The following are the dependent and independent variables description in the ordinary least square model examination of land access

- **Dependent variables:**
  - **Land access**: the first dependent variable of the study is land access. Land access as a dependent variable is continuous variable that can be explained through amount (size) of the land in which the household possess in hectare. It ranges from 0 which means no land at all to the highest level of land size endowment by the household in the study area. It is usually measured in terms of hectare or timad which is equal to 0.25 hectare.
- **Independent variables:** independent variables which were tested through regression method were:
  - **Socio-demographic factors**: are variables which are confirmed by different literatures in influencing both land access and livelihood strategies choice. These are:
  - ***Sex of household head (SEXHH)****:* is a dummy variable expressed through 1 and 0 responses. Hence male are coded as 1 and females are coded as 0.
  - ***Age of household head (AGHH)****:* is a continuous variable measured in terms of years. It denotes the year age of household head respondent in the study area.
  - ***Education level of household (EDHH):*** is a continuous variable measured in terms of number of schooling achieved by the household.
  - ***Family size (HHFS)*** **-** is the number of household members who live and take food from same dish and live under one roof.

- ***Dependency Ratio (DRHH):*** is continuous variable measured based on the number of dependency that household head is responsible to feed.
- ***Distance to city (DSTC):*** distance of the village to the nearby city will have effect on the amount of land available and accessed by the household. This is due to the growing demand for land by investment at city and different type of development activities conducted at the city. In general, the rapid rate of urbanization and industrialization will have effect on the land of the villages. This will also affect the household level land access. As one independent variable, distance to city is continuous variable that was measured in terms of kilometer.
- **Year of continuous stay in the village (YRST) -** the period of residency (continuous stay) by the household will have potential effect on their level of land access. Therefore, it is continuous variable that was measured in terms of year of stay in the village.
- **Native of the household (NATHH)-** being native or new comer to the area will have an effect on land access and the size of land endowed by the household.it is dummy variable expresses in terms of yes if household is native and 0 otherwise.
- **Credit received (CREDRE) -** credit is an important source of financial and other form of capital for the household with poor resource base. Therefore, it will determine household access to land through the income derived from credit source. It is dummy variable denoted by yes if household take credit over the last production season and no if they did not take.
- **Total livestock endowed by the household (TLU) -** it is the total number of livestock endowed by the household in TLU. It is continuous variable expresses in TLU.
- **Cooperative membership (COOPME) -** being member to cooperative will have different advantage for the participant member in different way. One way is through enabling members to access communal land in cooperation to different government body. Therefore, it is dummy variable expressed in terms of yes if household is member and 0 if not.
- **Well Being Status of the household-** wellbeing status of the household in the study area also has influence land size through different way. Therefore it dummy variable expressed in terms of 1 if household was under category of not well, 2 if household was moderately well and 3 if well of category of wellbeing status.

Table 3: Description of Explanatory Variables and their expected sign that affect land access

No	Explanatory variables	Nature of variable	Expected Effect
1	Sex of the household head(male=1)	Dummy	1
2	Age of the household head(Year)	Continuous	+
3	Education of the household (Year)	continuous	-
4	Family size (Number)	Continuous	-
5	dependency ratio	Continuous	-
6	Distance to City (KM)	Continuous	-
7	Year of continuous stay (yrs.)	Continuous	+
8	Native of the household		+
9	Credit received	Dummy	1
10	Cooperative membership	Dummy	1
11	Wellbeing Status	Dummy	1

3.11.2. Multinomial Logistic Model

As an extension to binary logistic model, multinomial logistic model helps us to determine the choice of a given variable among a set of a given highly differentiated alternatives (options) which are unordered (Kuhfeld, 2010 as cited in Sable, 2016). The effect of independent (predictor) variables on dependent variables with unordered response and multiple outcomes of dependent variables will be examined by multinomial logistic model. In general, multinomial logit model is preferable model when the categorical dependent outcome has more than two levels need to be employed for such study (Alwang et al., 2005; Brown et al, 2006; Jansen et al .,2004; Adugna, 2007). Therefore, in order to examine the effect of land access and other factors on household livelihood strategies choice, multinomial logistic model was used. Since there will be more than two independent variable and one dependent variables having multiple outcomes, the appropriate and sound method that fits to test the causal effects of the variables is multinomial logistic model. Here, the livelihood strategies choice which is dependent variable has more than one outcome or alternative. A household is assumed to choose among the different livelihood strategies. Here, the i^{th} household decision to choose a specific livelihood strategy can be explained as follow;

$$Y_{ij} = X_i\beta_j + \varepsilon_{ij} \quad \text{---------- (1)}$$

Where j is the number of choice (there will be 6 livelihood strategies choices Farm, Off-Farm, Non-Farm, Farm + Off-Farm, Farm + Non-Farm, Farm + Off-Farm + Non-farm)

X_{ij} is the characteristics of household which includes all independent variables such as land access, socio-demographic and institutional factors which may affect livelihood strategy choice of household.

β is a vector of the estimated parameter

Let Y be the dependent variable of livelihood strategies

Let Pr (Y_i=j) the probability of choosing livelihood strategies

Finally, probability of a household i choose from alternative j will be estimated using multinomial estimators model as follows;

$$\Pr(Y_i = j) = \frac{\exp(x_i \beta_j)}{\sum_{i=1}^{7} \exp(x_i \beta_j)} \text{---------- (2)}$$

With the requirement that $\sum_{j=0}^{J} P_{ij} = 1$ for any *i*

Where: P_{ij}= probability representing the i^{th} respondent's chance of falling into category *j* livelihood strategies

X = Predictors of response probabilities

β_j = Covariate effects specific to j^{th} response category with the first category as the reference.

According to Green (2003) as cited in Adugna (2012) in order to remove the indeterminacy in the model, appropriate normalization is needed that assume $\beta_1 = 0$ (this arise because probabilities sum to 1, so only J parameter vectors are needed to determine the J+1 probabilities). So that $\exp(X_i \beta_1) = 1$, implying that the generalized equation (2) above is equivalent to

$$\Pr(y_i = j / X_i) = P_{ij} = \frac{\exp(X_i \beta_j)}{1 + \sum_{j=1}^{J} \exp(X_i' \beta_j)}, \quad \text{For } j = 0, 2 \ldots J \text{ and}$$

$$\Pr(y_i = 1 / X_i) = P_{i1} = \frac{1}{1 + \sum_{j=1}^{J} \exp(X_i' \beta_j)}, \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

3.11.2.1. Hypothesis and Definition of Variables for Examining the Effect of Land Access and other Socio-Demographic and Institutional Factor on Livelihood Strategies

The other model that was employed in this study to determine the effect of land access and other socio-demographic and institutional factors on livelihood strategies choice of household was multinomial logistic model.

- **Dependent variable**
  - **Livelihood strategies**: A livelihood strategy is the second dependent variable of the study. Here, livelihood strategies have 6 outcomes or alternatives. It is expresses by 1 if household choose farm, 2 if household choose Off-Farm, 3 if household choose Non-Farm, 4 if household prefer Farm + Off-Farm, 5 if household choose Farm + Non-farm, 6 if household choose Farm + Off-Farm + Non-Farm .
- **Independent variables**
  - **Land Access**: is a continuous variable which is expressed in terms of hectare of the land possessed by the household.
  - ***Sex of household head (SHH):*** is a dummy variable measured through 1 and 0 responses. Hence male are coded as 1 and females are coded as 0.
  - ***Age of household head (AGHH):*** is a continuous variable measured in terms of the age level of household.
  - ***Marital Status of household head (MSHH)*** - is dummy variables that are codes as one if the household is married and 0 if the household is widow/divorce/single.
  - ***Education level of household (EDHH)***: is a continuous variable measured based on the educational level of household head. Thus, it will be donated by the number of school attained by the household.
  - ***Family size-*** this denotes the number of person live together in household. It is continuous variable as it increases with the size of household members. Given that the family size is negatively affect the livelihood strategies the household followed and the household wellbeing.

- ***Frequency of extension contact (ECHH)***- if household have one and more than one contact of extension per month, it is continuous variable which was expressed in terms of households number of contact with extension.
- ***Livestock holding (LHHH)*** - is continuous variable that indicates in number of livestock that is owned by the household and it is measured by Tropical Livestock Unit (TLU).
- ***Household access to credit (ACHH)*** - since access to credit is important in determining the livelihood strategies of household, it is dummy variable that will be coded as 1 if household take credit and 0 otherwise.
- ***Income of the household*** - as one determinant this variable, it is continuous variable which will be measured in terms of aggregate monthly income of the household

Table 4: Description of Explanatory Variables and their expected sign that affect Livelihood strategies choice

0	Explanatory variables	Nature of variable	Expecte d Effect
1.	Sex of the household head (Male=1)	Dummy	+
2.	Age of Household head	Continuous	-
3.	Marital Status	Dummy	0
4.	Education of the household (Year)	Continuous	+
5.	Family size (Number)	Continuous	+
6.	dependency ratio (Number)	Continuous	-
7.	Land access (size)	continuous	+
8.	Income of the household in ETB	Continuous	+
9.	Frequency of Extension Contact Livestock Holding (TLU)	Continuous	+
10.	Household access to credit	Continuous	+

3.11.3. Order Logistic Model

Finally, order logistic model was used to examine the effect of land access and livelihood strategies and other socio-economic, institutional and demographic factors on household wellbeing. In order to measure and classified the household wellbeing status, wellbeing index was constructed by adopting the multidimensional poverty measure method developed at oxford poverty and human development initiative by Sabina Alkire and Professor James Foster the so

called Alkire-Foster method. This is because wellbeing is not predominantly an income phenomenon rather it incorporated many subjective dimensions and like poverty, wellbeing is also multidimensional. Wellbeing index was first constructed using four dimensions that was selected purposively and adopted from Alkire- Foster (2011). These dimensions were wealth dimension (asset and income), education dimension, empowerment dimension and heath dimension. These dimensions also have two or more indicators used to specifically indicate the household's status.

Therefore, based on these dimension a household was categorized as well-off, moderately well and not well using one-third of the result obtained. In general, the following steps were used to construct wellbeing indexes and categorize wellbeing in to three categories namely well-off, moderately well and not-well.

Step 1 select dimension- accordingly four dimensions namely wealth (asset and income), education, empowerment and heath dimension will be selected

Step 2 select indicators for each dimensions- Wealth dimension includes indicators such as asset (having modern household tools) owned by the household in number and land occupied by the household in hectare or other local measurement, Housing condition of the household and income per month; education dimension includes highest grade achieved by the household in number, school attendance during the last 12 months and highest grade of schooling obtained by the child; Empowerment dimension includes whether wife has the role on the income comes from sell of crop or other source, school for girl or marriage, having attitude of school is important for male or female and the last dimension health incorporates no mortality, no illness during the last 12 month and whether the household go to health center twice when they or members got sick.

Step 3- Use the first cutoff to determining deprivations- use 1 to indicate deprived and 0 for non-deprived.

Step 4- Attach weight for the four dimensions (1/4) = 0.25 for each dimension which is adopted from Alkire-Foster (2011) used to measure poverty. After giving equal weight to each four dimension, also give equal weight for each indicator of the four dimensions.

Step 5- Aggregation issue- here it needs to find Aggregate wellbeing score index. Accordingly household who scored an aggregate value of less than 0.33 is considered as not well, between 0.34-0.66 is categorized as moderately well and above 0.67 is well off household.

Furthermore order logistic model was employed after having step 6 which stated use second cutoff (1/3) from the aggregate wellbeing score index to estimate determinant of household wellbeing in the study area.

Order logit regression model was used when the dependent variables has ordinal response variables and has natural order. Hence, this research has three ordinal response factors on household wellbeing status that is not well off, moderate well and well off. Response categories ranges from 1, 2….3 with 1 high wellbeing status (well off), 2 moderate wellbeing status and 3 poor wellbeing status (not well off). Therefore, let household wellbeing Yi be an ordinal response variable with three categories, alongside with a vectors of covariant Xi explanatory variables. An ordinal regression model establishes a relationship between the explanatory variables and the set of probabilities of the categories Pci=Pr($Yi = yc|\ \mathbf{x}i$), c=1,…,C.

Ordered logit model is expresses by cumulative function that is Pci=Pr($Yi \leq yc|\ \mathbf{x}i$), c=1,…,C. ., and the last cumulative probability is necessarily equal to 1, so the model specifies only C–1 cumulative probabilities..

Therefore, order Logit model function for an ordered response Yi with C categories is defined by a set of C–1 equations where the cumulative probabilities gci=Pr ($Yi \leq yc|\ \mathbf{x}i$) are related to a linear predictor $\beta'\mathbf{x}i = \beta 0+\beta 1x1i+\beta 2x2i+\ldots$ through the logit function:

$$Logit\ (Pci) = \log(pci\ /(1-Pci\ )) = \alpha c - \beta'\mathbf{x}i\ ,\ c = 1,2,\ldots,C-1. \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

The parameters αc, called *thresholds* or *cut points*, are in increasing order ($\alpha 1 < \alpha 2 < \ldots < \alpha C$-1). In this case it not possible to instantaneously estimate the overall intercept β_0 and all the C–1 thresholds: in fact, adding an arbitrary constant to the overall intercept β_0 can be counteracted by adding the same constant to each threshold αc. This identification problem is usually solved by either omitting the overall constant from the linear predictor (i.e. $\beta 0 = 0$) or fixing the first threshold to zero (i.e. $\alpha 1 = 0$). Have ever, this stage is not enough to estimate the probability of order response categories so it needs to make non-linear probability model.

From equation (1), the cumulative probability for category *c* is

$pci = \exp(\alpha c - \beta' \mathbf{x}i)/(1+\exp(\alpha c - \beta' \mathbf{x}i)) = 1/(1+\exp(-\alpha c + \beta' \mathbf{x}i))$….. (2)

The ordered logit model is also known as the *proportional odds model* because the parallel regression assumption implies the proportionality of the odds of not exceeding the *c*-th category $oddsci = pci/(1-Pci)$: in fact, the ratio of these odds for two units, say *i* and *j*, is $oddsci/oddscj = \exp[\beta' (\mathbf{x}j - \mathbf{x}i)]$, which does not depend on *c* and thus it is constant across response categories.

3.11.3.1 Hypothesis and Definition of Variables for Examining the Determinant of Household Wellbeing

- **Dependent variable**
  - **Household Wellbeing**: is the third dependent variable that was analyzed in this study. Household can be classified as well off which was coded as 3, moderately well coded as 2 and not well which was coded as 1.
- **Independent variable**
  - **Demographic Factors-**
    - ***Age of the Household Head (AGHH)*** –Age of the household head is a continuous variable that denote the age of household head in year.
    - ***Sex of the Household Head (SEXHH)*** - As one determinant factor, sex of the household is dummy variable that was coded as 1 if male headed and 0 if female headed.
    - ***Marital Status of the Household Head (MASTHH)*** - is Dummy variable that was coded as 1 if the household head is married, 0 if the household is other (widow, divorce or single).
    - ***Educational Status of the Household Head (EDUCHH)*** - is a continuous variable measured based on the educational level of household head in year. Here, illiterate was denoted by 0 and degree and above as 15.
    - ***Family Size of the Household (FSHH)*** - Is continuous variable measured based on the number of dependency that household head is responsible to feed.
    - ***Health status of Household Head (HHHS)*** - Health condition of the household head is dummy variable that was measured in terms of being economically active and capable of working during the time survey. This independent variable was coded as 1 if household head is healthy (economically active) and 0 otherwise.

- **Socio-economic Factor**
  - **Land Access (HHAL)** - is a continuous variable which is expressed in terms land endowed by the household in hectare.
  - ***Livelihood strategies (HHLS)*** - Household participation in diverse livelihood strategies like engaging in off-farm and non-farm activities and other combination of livelihood strategies plays an important role in providing household with an alternative source of income and employment. Under this circumstance, livelihood strategies are dummy variable that was expressed in terms of 1 if the household engaged in diverse livelihood strategies and 0 if household relay on one livelihood strategies.
  - ***Household Access to Credit*** (**HHAC**) - Since access to credit is important in determining the livelihood of resource poor household, it is meant by this research as those who take credit and those who did not take. Therefore it is dummy variable that was coded as 1 if household take credit and 0 otherwise.
  - ***Household Income (HHIN)*** - is total aggregate monthly cash income of households (in Birr). Income obtained from different source will have positive impact on the wellbeing of the household. Income is source of every material needed by the household member to sustain their living. Therefore, it is continuous variable measured in terms of birr.
  - ***Year of continuous stay***- this is important in determining household wellbeing. This is because when household stay in the area for long period of time, they are stably lead their life and had sustainable livelihood strategies which make them to be well. Therefore, this explanatory variable was continuous and measured in terms of year of continuous.

Table 5: Description of Explanatory Variables and their expected sign that affect Household wellbeing

No	Explanatory variables	Nature of variable	Expected Effect
1.	Dependent variable Household Wellbeing (Well off , moderately well and Not well)		
2.	Independent variable		
1.	Demographic variables		
	Age of Household Head	Continuous	-
	Sex of Household Head	Dummy	1
	Marital status of Household head	Dummy	0
	Educational level of Household	Continuous	+
	Family size of the household	Continuous	-
	Health status of Household Head	dummy	1
	Year of continuous stay	Continuous	+
2.	Socio-Economic Variables:		
	Land Access	Continuous	+
	Livelihood Strategies	Dummy	1
	Access to Credit	Dummy	1
	Household Income	Continuous	+

3.11.4. Diagnostic Tests

Knowing whether there is multi-collinearity problem or contingency coefficient among the independent variables prior to conducting model analysis is essential (Gujarati, 2004). Therefore, diagnostic test was conducted before going to analysis of the data in order to make sure wither there will be the problem of multi-collinearity or contingency coefficient among the predictor variables for the study. This was help to make the collected data ready for model analysis. Therefore, Variance Inflation Factor (VIF) was also used to determine whether there is multi-collinearity among all explanatory variables.

3.12. Ethical Consideration

Throughout the whole research process obeying the principle of research ethics is essential. Before the actual data collection begins, a formal written letter from the center of Local and Regional development was taken. Then, before data collection, discussion was held and the objective of the study was explained to the Soddo zuria woreda administrators. Right after discussion formal consent letter was obtained from the woreda administration in order to precede the next process of the research. Furthermore, a formal oral consent was obtained from study units (household) before data collection in the field was started. The research was fully obeying to all the ethical principles throughout the course of data collection to analysis.

CHAPTER FOUR

RESULT AND DISCUSSION

This chapter is designed for data presentation and analysis which were gathered from sample household head and key informants undertaken with woreda and kebeles administrators and from focus group discussion held with household heads, development workers, youth and other concerned body and finally from field observation and other secondary data source. Basically, the chapter explains the finding that was collected from the respondents based on the basic research questions of the study. It comprises two sections. The first section discusses about the descriptive statistics of socio-demographic factors/ characteristics of the respondents. This is done by taking the sustainable livelihood framework in to account. Accordingly, the different livelihood assets like human capital, natural capital, physical capital, and their characteristics with special focus to the study area was discussed and presented in the form of table, frequencies, graphs and their correlation with wellbeing status of the household also presented in chi square and other correlation methods. The different mediating factors like access to credit, access to market, cooperative and other social networks and the like also be presented and discussed. Livelihood strategies pursued by the household in the study area also presented and discussed. Both quantitative and qualitative data obtained from household survey and FGD as well as informant interview and observation will be discussed hand in hand in addition to those of other supplementary secondary data. The second section explains about the econometric analysis including regression models employed to examine the relationship between dependent and explanatory variables based on the research objectives or research questions.

4.1. Respondents Demographic and Socio-economic Characteristics

The main purpose of this study was to examine the effect of land access on rural livelihood strategies choice and what implication does it have toward household well-being through employing cross sectional survey of household head in Soddo zuria woreda, Wolayita zone. This study had employed Kothari's (2004) sample size formula for large and finite population. Thus, 203 sample sizes were determined as the sample size of this study with degree of confidence level 95%, 0.5 proportion level and 0.07 margin error. Hence, based on the total sample size, 203 questionnaires were distributed to household head that were found on the purposively selected

four kebelese of the woreda through using simple random sampling technique. Among these, all 203 (100%) questionnaires were filled by respondents. This is due to the fact that the questionnaires were filled by the well trained enumerators who know the cultural and area setting of the selected sample kebeles. In descriptive statistics of the respondent, explanatory variables may include continuous, discrete, categorical and dummy in nature. Some basic descriptive statistics of gender, age, educational status, and Family size, household's income and etc. of the surveyed respondents are summarized in the following table 6.

Table 6: Descriptive Statistics of Sample Respondents

Sex of Household Head			
Explanatory variables	Category	Count	Percentage
Sex	Male	136	67
	Female	67	33
	Total	203	100

Age of Household					
Explanatory Variable	Total	Mean	Std. Dev	Min	Max
Age	203	46.76	8.61	22	75

	Category	Count	Percentage
Age	15-25	2	1
	26-35	17	8.4
	36-45	87	42.8
	46-45	67	33
	56-64	24	11.8
	64 and above	6	3
	Total	203	100

Marital Status			
Explanatory variables	Category	Count	Percentage
Marital Status	Married	183	90.1
	Divorced	8	3.95
	Widow	10	4.94
	Single	2	1
	Total	203	100

Educational Status					
Explanatory variables	Category	Count	Percentage		
Educational Status	Illiterate	82	40.39		
	Can read & Write	7	3.45		
	Grade 1-4	36	17.73		
	Grade 5-8	59	29.06		
	Grade 9-10	13	6.4		
	Grade 11-12	4	1.97		
	Diploma or Degree	2	0.99		
	Total	203	100		
Educational Status	Total Obse.	Mean	Std. Dev	Min	Max
	203	4.57	3.66	0 (Illiterate)	15 (Degree)
Family Size	203	6.44	1.88	1	13
Year of Stay	203	44.28	9.78	18	75
Aggregate income per Month (in ETB)	203	1590	1280	200	8000
Land Size in Hec.	203	0.43	0.68	0	3.5
Distance to farm land (in Min.)	185	4.77	4.45	1	45
Distance to nearby Market (In KM)	203	3.49	2.33	1	14
Livestock In TLU	203	2.32	2.34	0	10.25
	Response	Count	Percentage		
Access to Credit	Yes	100	50.7		
	No	103	49.3		
	Total	203	100		
Membership to Cooperative	Yes	34	16.7		
	No	169	83.3		
	Total	203	100		

Source: Own Computation (2018)

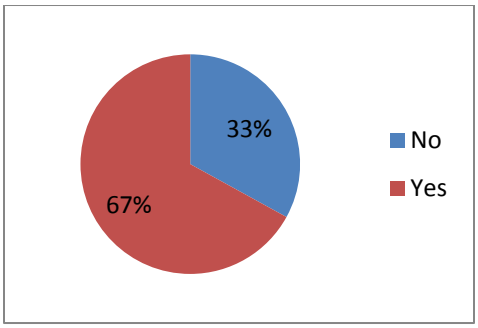
As indicated in the table above, 67 % of the household respondents were male and 33 % of the respondents were female. With regard to age of the respondent, 42.8 % and 33 % of the respondent were found to the age group of 36-45 and 46-55 respectively. In addition, 11.8 %, 8.4 % and 3% were belong to the age of 56-64, 26-35 and 60 and above respectively. 1 % were respondents with age of 15-25. When we see the mean age of the respondents, it was 46.76 with

standard deviation of 8.61. The average age of the study area is above the national average which is 44 according to MoFED (2014). The maximum and minimum age of the household head respondent was 75 and 25 year respectively. As far as the marital status of the respondent, majority of the respondent which accounts 90.1% were married followed by widowed respondents which take a share of 4.94% out of the total. The remaining 3.95% and 1% were divorced and single. From this we can understand that majority of the respondents were married. Respondents were also asked about their formal and informal (religious) educational status. Accordingly, 40.39% respondents were never been to school or illiterate; whereas the 29.06% and 17.73 of them were between grades of 5-8 and 1-4 respectively. 6.4%, 3.4% and 1.97% of the respondents were reported their educational status as 9-10, can read and write and 11-12 grades. The remaining 0.99% holds diploma or degree. The mean educational status of the respondents was 4.57 with standard deviation of 3.66. In addition the maximum and minimum educational attainment of the respondent household was degree or diploma and illiterate respectively. As far as the informal educational background of the respondent is concerned, 65% did not attend any informal education like religious and other and 35% of the respondents had attend informal education.

When we see the family size distribution of the respondents, 78.3% and 15.8% of the respondent had a family size in between 5-9 and 0-4. And the remaining 5.9 household respondents were reported as they have family members of 10 and above. The average family size of the respondents in the study area was 6.44 with standard deviation of 1.88. This exceeds the national average of family size which is 4.9 (MoFED, 2016). The maximum and minimum family size of the respondents was 13 and 1 respectively. In consistent with this, the real dependency ratio of the households in the study ranges from 2 which was the maximum to 0 which is the minimum. In this case the maximum 2 means every one working force was responsible to two inactive and dependent (not working) forces. The mean real dependency ratio of the household in the study was 0.51 with standard deviation of 0.31. Therefore, the half of the respondent i.e. 101 (49.77%) had real dependency ratio in between 0.50-0.99 followed by 70 (34.48%) which found on the range of 0.00-0.49 and the remaining 32 (15.75%) of the respondent found in between 1-2. Therefore, in the study one household member have to take the responsibility of himself/herself and to additional 0.5 or 1 person.

Respondent were also asked about whether they are native or not. According to the survey data, as shown in the graph 5 below, the majority of the respondents which accounts 136 (67%) were native whereas the remaining 67 (33%) were not native. Out of the total respondent who were not native in the study area, the reason as to why they came to the study area 31 of them were came by marriage and the remaining 19 and 17 respondents came to get access to land and to join relatives respectively. The following pie chart shows the distribution of household native and not native in the study area.

Figure 5: Distribution of household who are native residents and migrants



The mean year of continuous stay at current area of the respondents was 44.17 in year with standard deviation of 9.67. And the maximum and minimum year of continuous stay was 75 and 18 year. When we considered year of continuous stay at current area in category, 81 (39.5%) of the respondent had lived for 41-50 years. About 59(29.9%) and 48 (23.6%) of the respondent household had used to live in between 31-40 years and 51 and above respectively. The remaining 5.4 and 2% lived for about 21-30 and 10-20 years respectively. Survey data on the economically active status of the household head in the study showed that about 178 (87.7 %) of the household head respondents were economically active and the remaining 25 (12.3%) were not economically active and transfer the responsibility of handling the household affaire to older child or other relatives.

As it can be indicated in the above table the land access status distribution of the respondents, 91.1% of the respondent had land and 8.9% did not have land. The average land size held by the respondents in the study area was 0.43 hectare with standard deviation of 0.68. The maximum and minimum land size possessed by the household was 3.5 and 0 (no land at all). When we see land size distribution in categorical form, majority of the respondents which accounts 64.5% had land size between 0.01-0.25 hectares. Those respondents who hold land size between 0.26-0.5,

0.51-1 and 1-1.99 in hectare were 9.9%, 7.9% and 1.99% respectively. For about 7.9% of respondents were also had a land size above 2 hectare. The remaining 8.9% of respondents did not have any land at all. As far as the time take to reach from home to farm land for those who had land is concerned, the mean farm distance in minute was 4.77 with standard deviation of 4.45. The minimum and maximum minute take to reach to their farm land was 1 and 45 respectively. As far as distance of household living and farm area to nearby city is concerned, the average distance in Km was 5.24 with standard deviation of 3.74. The maximum and minimum distance to reach the nearby city by the household, they need to travel 16 km and 1 km respectively.

The above table also indicated that the average aggregate income per month of the respondent in the study area was 1590 ETB with standard deviation of 1280 ETB. The minimum and maximum income per month in ETB of the respondent was 200 and 8000 respectively. When we see the livestock distribution in TLU among household respondents, the average livestock endowment in TLU by the household respondents was 2.32 TLU with standard deviation of 2.34. The maximum and minimum livestock endowment in TLU of the respondents was 10.25 and 0. The categorical survey data for livestock showed livestock in the study area was sparsely distributed among households given the majority of the household which accounts 169 (83.26%) holds livestock in between 0.00-4.99 TLU. And the remaining 33 (16.24%) and 1 (0.5) had a livestock holding of 5-9.9 and 10 and above in TLU respectively.

Out of the total 203 sample respondents, only 34 (16.7%) were found to be members in formal cooperative and the remaining 169 (83.3%) were not. With regard to credit access of the respondents, 100 (49.3%) had taken credit in the last year and 103 (50.7%) of them did not take any credit. Out of those who did not take credit, their main reason was fear of ability to pay back which account 55%, lack of asset for collateral and high interest rate which accounts 45%. With regard distance to market, the average distance to market center in the study area was 2.15 Km with standard deviation of 1.5. The maximum and minimum distance to market was 16 and 0.5 km. According to interview with the woreda administrator, this is due to the kebeles were surrounded by the zonal big town named soddo town. With regard to frequency of extension contacts household had in the last year, majority of the respondents which accounts 108 (53.2%) replied as they had contact with the extension workers twice a month. 57 (28.1%), 22 (10.8%)

and 10 (4.9%) of the respondent had frequency of extension contacts four and more than times every month, three times per month and once per month respectively. the remaining 6 (3%) of the respondent reported as they had no contact with the extension workers. The following table illustrated the frequency of extension contact to household.

Table 7: Frequency of Extension Contact per month by the household

Frequency of Extension contact per month in the last year		
	Frequency	Percent
No contact	6	2.95
once	10	4.92
twice	108	53.20
Three times	22	10.83
Four and more	57	28.1
Total	203	100.0

4.2. Descriptive Statistics and Discussion

4.2.1. The Process of Wealth Ranking and Wellbeing index Constructing

Discussion on socio-demographic and economic characteristics of respondent will enable to have better insight on how the different livelihood assets accessed, livelihood strategies pursued and what looks like the wellbeing status of the household. Participatory wealth ranking approach was conducted during FGD with the participant at four kebele of the selected area in order to obtain data that can help to construct wellbeing index at the latter stage. This is mainly with the intension of making the process of constructing wellbeing index participatory and follow bottom up approach. Participatory wealth ranking approach was used by researchers such as Degefa (2005), Bereket (2010) and Eneyew and Wegayehu (2012) during their study. Such participatory wealth ranking approach according to Degefa (2010) includes modified participatory rural appraisal with the combination of different qualitative methods. The intension was to make categories of four strata namely rich, medium, poor and destitute. However, the last two are more probably under the same category. Therefore, households in the study area were categories in to three strata. Important indicators were prepared from different literatures and from the participant of the FGD. According to the participant the main indicator was size of land holding and number of plot a household possess. Subsequently, indicators like total livestock and oxen

endowment, production of cash crops like eucalyptus trees, the share of non-farm incomes were included. Some of the criteria were used in the study which involved wealth category by Bereket (2010) and Degefa (2005).

Therefore, according to the participants of the FGD, rich households are those that have enough land size mostly more than 1 hectare and more than one plots, a pair of oxen and considerable (usually more than five cows and others type of livestock's), should have at least 0.5 hectare of land used for eucalyptus trees and receive 10% of their income from the share of non-agricultural activities. On the other hand, medium households should have at least greater than 0.5 hectare of farm land and one plot of land, should have one or pair of oxen and two cows, should have less than 0.5 hectare of land for cash crop production, and engage in non-farm activities to generate additional income. Finally, poor household are those that have less than 0.25 hectare of farm land or no land at all, have no oxen or livestock, rely on purchase of food for consumption and engage in off-farm activities as a daily wage in other farm areas. According to Bereket (2010) engaging in off-farm activities was the characteristics of poor household in Damote Gale of Wolayita zone.

In addition to the above participatory wealth category, wellbeing index was constructed based on four dimensions and thirteen indicators in order to classify the wellbeing status of the household. This is with the intention of that indicators used on the above participatory wealth ranking was more of quantitative and asset based. Therefore, in order to make wellbeing index more comprehensive other component and indicators other than asset should be incorporated. Therefore, wellbeing index was done by adapting the Alkire-Foster method of measuring multidimensional poverty. Some slight modification and diversification of indicators was done in order to better cover the main indicators of wellbeing. This is due to the fact that wellbeing is not entirely an income phenomenon and is multidimensional in nature. Accordingly out of the total 203 households, 52 (25.6%), 105 (51.7%) and 46 (22.7%) of the households were categorized as not well, moderately well and well off respectively. Therefore, in order to have better knowledge of the effect and the difference among the socio-demographic and economic characteristics of the respondent and the level of correlation they have, analysis and discussion will be done based on the three categories of wellbeing.

4.2.2. Demographic Characteristics of Respondent Households by Wellbeing Status

4.2.2.1. Sex Composition of the Respondent

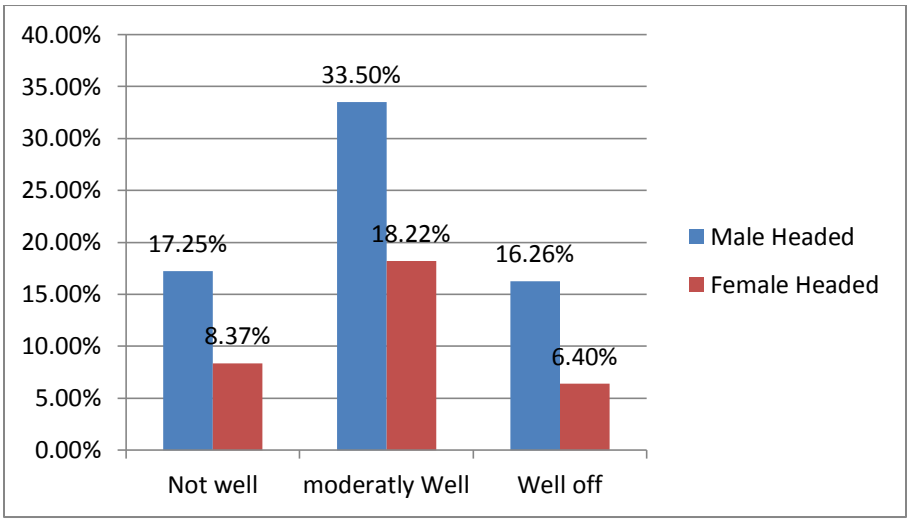
Sex which is the biological and physiological differences between male and female is important to help understand access to basic livelihood resource, livelihood activities undertaken and household wellbeing status achieved. Basically men and women did not have the same opportunity to access to livelihood asset, as a result pursue same livelihood strategies and achieve household wellbeing. This is due to denial or deprived of the latter in accessing basic livelihood resource and opportunity due to different factors.

Table 8: Sex Distribution by Wellbeing Status

wellbeing status of the household							
	Well Off		Moderately well		Not Well		Chi square
Gender of household head	Count	%	Count	%	Count	%	0.707
Female	13	28.3	37	35.2	17	32.7	
Male	33	71.7	68	64.8	35	67.3	

As we can see from the above table sex distribution of the respondent by wellbeing status in the study area, out of the total household found in well off category of wellbeing 71.7% were male headed and 28.3 % were female headed. 35.2 % of female headed and 64.8 % of male headed respondents were found in moderately well. Finally, when we see the household wellbeing status under category of not well, 32.7% and 67.3% of the share goes to female headed and male headed household respectively. The chi square test result indicated that there is no significant association between sex distribution of the household and household wellbeing status (x^2 =0.707). The following graph shows the difference in wellbeing status of the household between male and female headed household out of the 100% (25.62% not well, 51.72% moderately well and 22.66% well of household).

Figure 6: Wellbeing Status By Sex of the household



Source: Own Construct (2018)

4.2.2.2. Age Composition

Knowing the age composition of the household head is important to know as whether they have the same opportunity to access livelihood assets or not, pursue livelihood strategies and the like. The table below indicates that out of those household categorized as well off, 33.3%, 30.3 and 18.2 were on the age range of 36-45, 56-64 and 46-55 respectively. The remaining15.2% and 3 % were between the age of 65 and above and 26-35 respectively. With regard to those household grouped as moderately well, 47%, 32.2% and 11.3% were between the age range of 36-45, 46-55 and 26-35 respectively. The remaining 7%, 1.7% and 0.9% were found between the age of 56-64, 15-25 and 65 and above. When we see the not well distribution of the household, 43.6%, 40% and 10.9% of the respondent were found between the ages of 46-55, 36-45 and 56-64 respectively. The remaining 5.5% of not well household found between the ages of 26-35. The chi square test of correlation for categorical data revealed that there is significant association between Age distribution of the household and wellbeing status. Regarding age as a continuous variable, the minimum and maximum age of well off households were 32 and 75 year and the mean was 52 with standard deviation of 11. Whereas the maximum and minimum age of household under category of moderately well was 63 and 25 respectively and the mean age in year was 44 with standard deviation 8. Finally, the maximum and minimum age of households grouped as not well was 61 and 35 respectively and the average age of that category was 47 with

standard deviation of 6. Bivariate correlation was conducted to know whether there is association among age category and wellbeing. Accordingly the test was found to have significant association between age of the household and wellbeing at (P<0.05) level of significance. The table below shows the distribution of age of households by wellbeing status in the study area.

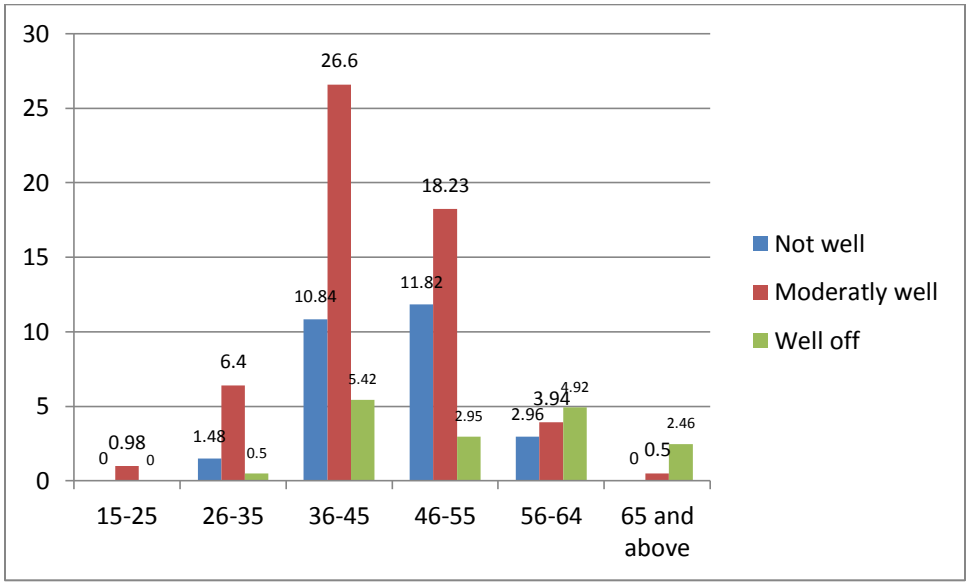
Table 9: Age Composition by Wellbeing Status

wellbeing status of the household by Age								
		Well Off		Moderately well		Not Well		Chi square
		Count	%	Count	%	Count	%	41.55 ***
Age of household head	15-25	0	0	2	1.7	0	0	
	26-35	1	3	13	11.3	3	5.5	
	36-45	11	33.3	54	47	22	40	
	46-55	6	18.2	37	32.2	24	43.6	
	56-64	10	30.3	8	7	6	10.9	
	65 and above	5	15.2	1	0.9	0	0	
**p<0.01								

wellbeing status of the household															
	Well Off					Moderately well					Not Well				
	Mean	Max	Min	Std Dev.	Total	Mean	Max	Min	Std Dev.	Total	Mean	Max	Min	Std Dev.	Total
Age	52	75	32	11	46	44	63	25	8	105	47	61	35	6	52

Therefore, as we can see from the wellbeing distribution among ages of the respondents, there is significant difference in the wellbeing attainment of the households in the study area. This can be understand by looking the following graph which shows the wellbeing distribution of Age by wellbeing status.

Figure 7: Wellbeing status of the household by Age distribution



Source: Own Construct (2018)

4.2.2.3. Marital Status

Data obtained from the survey portrays that majority of the respondent found under married marital status which accounts 183 (90.15%) and the remaining 20 (9.85%) were other which includes widowed, divorced and single. According to the survey data, out of the total well off category of respondent household, 93.5% and 6.5% were married and other respectively. The moderately well category of wellbeing status includes 86.7% and 13.3% of respondents who were married and other like widowed, divorced and single marital status. Finally, 94.2% and 5.8% of household under not well category were married and other respectively. According to chi square test conducted between wellbeing status and marital status of the household, there is no statistical significant association between marital status and wellbeing status of the household.

Table 10: Marital Status of the household by Wellbeing Status

wellbeing status of the household by Marital Status								
		Well Off		Moderately well		Not Well		Chi Square
Variable	Category	Count	%	Count	%	Count	%	9.345
Marital status	Married	43	93.5	91	86.7	49	94.2	
	Other	3	6.5	14	13.3	3	5.8	
**P<0.05								

Source: own Construct (2018)

Therefore, wellbeing status distribution of household in the study indicated that married and other marital status had different wellbeing status.

4.2.2.4. Family Size

With regard to family size as a continuous variable, the average family size for well of, moderately well and not well households in the study area was 7, 6 and 7 with corresponding standard deviation of 2, 2 and 3. In addition, the maximum and minimum family members who share foods from the same kitchen for well of households was 13 and 3, for moderately well was 11 and 1 and for not well households was 10 and 4. According to bivariate correlation between family size and wellbeing status, there is statistical negative association between the two variables at $p<0.01$ level of significance. This data was summarized in the following table.

Table 11: Family Size of the household by wellbeing Status

		wellbeing status of the household by Family size						
		Well Off		Moderately well		Not Well		
		Count	%	Count	%	Count	%	Chi^2 value
Household Family size	0-4	5	15.2	22	19.1	5	9.10	19.53
	5- 9	21	63.6	90	78.3	48	87.3	
	10 and Above	7	21.2	3	2.60	2	3.6	

	Well Off				Moderately well				Not Well				
	Mean	Max	Min	Std Dev	Mean	Max	Min	Std Dev	Mean	Max	Min	Std Dev	p-value
Family size	7	13	3	2	6	11	1	1	7	10	4	2	0.01
	p<0.01												
Year of stay	54	75	20	11	41	60	18	8	42	51	25	6	0.01
	p<0.01												

Source: Own Construct (2018)

Family size of the household in the study area revealed that about 159 (78.3%) of the household had family size in between 5-9 and the remaining 33 (16.3%) and 11 (5.4%) households belong within the range of 0-4 and 10 and above. With regard to family size as a continuous variable, the minimum and maximum family size in general was 1 and 13 respectively. The average family size of the study area was 6.31 with standard deviation of 2.04. This exceeds the national average of family size which is 4.9 (MoFED, 2016). Having large family size may have challenge or opportunity for the household depending on the number of working force and inactive (dependent) members.

4.2.2.5. Year of Continuous Stay at Current Area

Being native or live in the same area for a long period of time has an opportunity to access the most important livelihood resource mainly land and help to be stable lead household by pursuing diversifying livelihood strategies. Therefore, being native or new comer to a given area will determine access to livelihood asset, diversification of livelihood strategies and the subsequent wellbeing status of the household. Therefore, as it can be seen from the table above, the average year of continuous stay for well of household was 54 year with standard deviation of 11. The maximum and minimum year of stay for such group was 75 and 20 years respectively. On the other hand, the mean year of stay for the moderately well households was 41 year with standard deviation of 8. The maximum and minimum year of stay for moderately well household was 60 and 18 years respectively. Finally, the average year of stay for the not well category in the study area was 42 with standard deviation of 6. The maximum and minimum year of stay in their current area by household was 51 and 25 years. From this we can conclude that the more the year of continuous stay, the better the wellbeing status achieved by the household. There was also significant association between year of continuous stay and wellbeing status of the household at $p< 1\%$ level of significance.

4.2.3. Educational and Socio-Economic Characteristics of the Respondent by Wellbeing Status

Bivariate analysis was conducted among household different characteristic and wellbeing status in order to know whether there will be association or not. Accordingly the summary of the analysis will be presented in the following table.

Table 12: Summary of Bivariate Analysis of household Educational and Socio-economic characteristics with wellbeing status

Variables	Wellbeing Status	Total	Min	Max	Mean	Std. Dev.	T-Value
Educational status	Well off	46	0	15	8	2	8.38
	Moderately well	105	0	15	4	4	
	Not well	52	0	11	2	3	
	Total	203					
Real Dependency Ratio	Well off	46	0	1	0.34	0.29	7.96
	Moderately well	105	0	1	0.52	0.3	
	Not well	52	0	1.66	0.65	0.32	
	Total	203					
Aggregate income	Well off	46	1000	8000	2900	1890.2	5.44
	Moderately well	105	200	2000	1236.66	782.44	
	Not well	52	200	2000	1145.19	290.58	
	Total	203					
Distance to nearby city	Well off	46	1	14	4.55	03.22	5.55
	Moderately well	105	1	16	4.20	3.22	
	Not well	52	1	15	8.41	3.74	
	Total	203					
Distance to Market center	Well off	46	0.5	4	1.76	0.87	6
	Moderately well	105	0.5	8	2.09	1.40	
	Not well	52	0.5	11	2.51	1.90	
	Total	203					
Total Livestock Endowment (TLU)	Well off	46	0.7	10.25	5.08	2.74	5.1
	Moderately well	105	0.00	7.93	1.55	1.56	
	Not well	52	0.00	4.43	1.46	1.18	
	Total	203	0.00	4.43	1.43	1.15	

Source: Own Construct (2018)

4.2.3.1. Educational Status

Education plays an important role in diversifying the income derived from different livelihood strategies, bringing new opportunities and skills in accessing and utilizing livelihood resources and attaining better household wellbeing. High educational attainment by the household will give the opportunity to get well paid job and increase income from different source (Urassa, 2010). Education through skill development and enlarging the chance of obtaining better paid job increases the opportunity of household members to have more income (Teklu, 2016).

Education status was recorded in both continuous and categorical forms. As indicated in the above bivariate analysis summary, 60.6%, 18.2% and 6.1% of households who are categorized as well of had educational status of illiterate, 5-8 and 9-10 respectively. The remaining 6% of well of household had an educational background of 6-10 and diploma or degree which take 3% of each. With regard to continuous formal education status of the respondent, the minimum and maximum education level for well off households was illiterate and diploma or degree respectively. The average educational status for the same category was 8with standard deviation of 2. When we see the education status distribution of household in moderately well category, the minimum and maximum education status was the same with that of well of category which is 0 minimum and diploma or degree maximum. However, the difference lies on the average educational status. The mean educational status for moderately well households was 4 with standard deviation of 4. Finally, when we look at the educational status of households grouped as not well, the average educational status was 2 which is very small as compared to the other category of wellbeing with standard deviation of 3. The maximum and minimum educational attainment by households in not well category was 11 and 0 respectively. From this we can understand that education can determine household wellbeing status category. In order to confirm such statement, chi square test was for categorical variable was conducted. Accordingly, the result revealed that there is significance association between educational attainment and wellbeing status at x^2 result of 24.52 and p-value of 0.01%.

4.2.3.2. Real Dependency Ratio

Dependency ratio depicted the proportion of the population not in the work-forces which are usually below the age of 14 and above 66 considered as 'dependent' on those of working-age found between the ages of 15-65. However, in some case there are children below the age of 14 who engage in different income generating activities to the household and also there are household heads above the age of 66 who are actively take the responsibility of the household. Therefore, in order to overcome with such challenges in this research, real dependency ratio was employed. Real dependency ratio take the proportion of number of inactive or not working force to those of working force irrespective to age boundary. Accordingly, the minimum and maximum real dependency ratio of households under well off category was 0 and 1 respectively and the average real dependency ratio of the same group was 0.34 with standard deviation of

0.29. On the other hand, the minimum and maximum real dependency ratio for moderately well households in the study area was also 0 and 1 respectively while the average dependency ratio of such group was 0.52 with standard deviation of 0.3. Finally, the minimum and maximum real dependency ratio for households categorized as not well was 0 and 1.66 respectively with an average real dependency ratio of 0.65 and standard deviation of 0.32. The average dependency ratio of the three categories shows an ascending order from well of to not well. Hence, there was high dependency ratio for not well categories in the study area. This means that every member of household under not well category should take care of him/herself as well as 0.65 person of additional member.

4.2.3.3. Aggregate Income of Households

Aggregate income derived from different source of livelihood strategies like farm, off-farm, non-farm and remittance in the last production season by the household was recorded and the survey data as indicated in table above revealed that the average monthly income in ETB for the well-off households was 2900 with standard deviation of 1890.2. The maximum and minimum aggregate monthly income in ETB of the same category was 8000 and 1000 respectively. When we see the maximum and minimum aggregate income for the moderately well households, it was 6000 and 200 ETB. The mean monthly income for the same group was 1236.66 ETB with standard deviation of 782.44. Finally, the average aggregate monthly income for not well category of wellbeing was 1145.19 ETB with standard deviation of 290.58. The maximum and minimum aggregate income for such category of wellbeing was 2000 and 500 ETB. Therefore, the data revealed that there was considerable difference in average aggregate monthly income among the three category of wellbeing. There is significant association between aggregate monthly income and wellbeing status of the household at $p<0.01$.

4.2.3.4. Distance to Market and Nearby City

Being near or far from nearby city has different opportunity and challenges for the households. According to the interview conducted with the woreda administrator and the selected kebele administrator, among the opportunity of being near to nearby city are market access and access to different public services provided by the government like electricity, water, telecommunication and specialized health centers etc. Household can sold their product with

good price and they can also get additional source of income and livelihood strategies which will help them to achieve better household outcomes when they are near to city. On the contrary, when they are near to city, their land can get decreased due to expansion of the cities and due to the need for the construction of different government and non-government institutions and organizations like university and other facilities. On the other hand, distance to market determined household wellbeing status by virtue of affecting the sale of their products. The more the distance to market, the less preferable by the household to go to the market and sold their product at a good price. This will, therefore, affect their livelihood by decreasing their income source. According to Sable (2016), market centers are a place in which people from different angle come together and give as well as receive valuable information, products, new technologies and the nearest the market center the easiest it can be for people to buy and sell new products, technologies and information when they demand it.

According to the survey data, the mean distance in Km to nearby city and market in Km by those households under category of well-off was 4.55 and 1.76 with its respective standard deviation of 3.22 and 0.87. The maximum and minimum distance to city of such group was 14 and 1 Km whereas the maximum and minimum distance to market center by the same category of wellbeing was 4 and 0.5 respectively. When we see the mean distance to city and to market center in km by those household categorized as moderately well was 4.2 and 2.09 with its respective standard deviation of 3.22 and 1.4. The maximum and minimum distance to nearby city by moderately well households was 16 and 1 Km respectively whereas the maximum and minimum distance to market center was 8 and 0.5 Km. Finally, the average distance to nearby city and to market center by those household categorized under not well was 3.85 and 2.5 Km with its respective standard deviation of 8.41 and 1.9 Km. The maximum and minimum distance to nearby city by those under the category of not well was 15 and 1 respectively whereas the maximum and minimum distance to market center by such group of wellbeing status was 11 and 0.5. In general from this survey data, we can understand from this the more the distance to nearby city and market center, the more the opportunity of household to be in not well category of wellbeing and the lesser the opportunity of being under well off category. The result of bivariate correlation among the two revealed that there is statistically significant association among distance to nearby city and nearby market on the one hand and wellbeing status on the ther hand at $p<0.01$ level of significance.

4.2.3.5. Total Livestock Endowment by the Household in TLU

Livestock is an important physical capital which plays an important role to the livelihood of human being. In developing countries possessing large number of livestock is regard as a sign of wealth and dignity. Livestock in developing countries can also be used as an engine and instrument for the day to day livelihood activities. In most rural Ethiopia where agriculture is the dominant livelihood activities, livestock holding is one of the important indicators of households' wealth position and a means of supporting agricultural activities and supplementing failures arise from farming practice. When we see the livelihood distribution among the three categories of wellbeing, the average livestock holding in TLU by well off category of wellbeing status was 5.08 with standard deviation of 2.74. The maximum and minimum livestock ownership in TLU by the household in such category was 10.25 and 0.7 respectively. On the other hand the average livestock possessed by households in moderately well and not well category was 1.55and 1.46 TLU respectively with corresponding standard deviation of 1.56 and 1.18. The maximum and minimum livestock ownership in TLU for moderately well households was 7.93 and 0.00 whereas the maximum and minimum livestock endowment in TLU by households in not well category was 4.43 and 0.00. The survey data explicitly revealed that there is difference in livestock endowment among the three categories of wellbeing.

4.2.3.6. Membership to Social Network and Connections

Social networks and connections are those formal and informal associations and networks established by the community to help each other at a time of hard ship and difficulty as well as at any time when there is a need of help. Household by virtue of being member of these networks can benefit different things ranges from sharing labor and receive physical help by others to receiving credits and others. There are different forms of social networks and association's people form and use for self-help and common good. Different informal social institutions were identified during FGD in the study area. These include iddir, iqub, mahber, debo and wonfel etc. household in the study area was asked as to whether they are member to these informal social institutions. The survey data indicated that all the respondent were member to at least one informal social institution. During FGD, one participant had explained informal social institutions as:

Informal social institutions especially iqub and idir are common in our area. People used to participate in such association to help each other at the time of hardship, difficulty and even happiness. They are (informal institution) the life for every one whether rich, medium or poor household head and members.

In general, people use informal social institutions for various reasons. Iddir is a voluntary self-help association used in time of death and happiness like marriage whereas iqub is the circular saving system of member. Debo which is common in the study area was a festive labor exchange grouping in the form of one-five development networks. Wonfel which is similar to debo in some case, the other hand is an association of working group in which individuals come together and contribute labor and skill during tilling, harvesting and collecting products (Wasie & Alice, 2016).

Respondent households were also asked about their membership to formal institution mainly cooperative. Accordingly, only 34 (16.7%) were found to be members in formal cooperative. With regard to cooperative membership distribution among the three category of wellbeing, out of the total well off household only 21.2 % were member to formal cooperative, and only 18.3% out of those households considered as moderately well was member to formal cooperative. Out of the total not well households, only 10.9% was member to cooperative. From this we can understand that membership to formal cooperative was not a widely practiced as compare to membership to informal social institutions and networks.

4.2.3.7. Access to Credit

Credit which is very important source of social capital and income is one used by household in different area to lead their day to day affair and cover their agricultural and other expenditures. According to the FGD data obtained from the participants, it is the most important source of capital especially financial capital for the household with poor income source. Household may use it to purchase agricultural technologies and inputs such as fertilizer, improved seeds and other farm implements used in their day to day agricultural activities. Access to credit can also equip households with the needed financial capital to start different new business and income generating activities. However, according to the participant, access to credit require the existence of collateral and other assurance by the household that is why most households did not take credit and they may also fear of their ability to pay back. Survey data about credit access distribution among households in the three categories of wellbeing status revealed that majority

of those who are well off received credit in the last year which accounts 93.5% and the remaining did not. On the other hand, majority of household who are in the not well category of wellbeing did not take credit which accounts 86.5%. Therefore, from this it is evident to say credit had an implication toward the wellbeing status of the household. The chi square test which was conducted to know whether there is significant association between credit use and wellbeing status revealed that there is significance correlation between credit use and wellbeing status of the household at x^2 result of 62.75 and p-value of 0.01 level of significance.

4.2.3.8. Frequency of Extension Workers Contacts

Extension workers through the way of giving information and advice help to improve the productivity of agricultural products, conserve soil and land from degradation, give other possible and alternative way of enhancing and improving wellbeing of households are important in the life of rural people. Intensive follow up and extension contact and service are an essential way of disseminating valuable information about new technologies and new way of improving productivity. Therefore, the more the frequency of extension workers had with the household, the better the way of enhancing productivity and livelihood of the household. According to the interview conducted with the agricultural extension workers, as an extension worker in order for household to increase their income, different support and advice was given to the member of the households. One way of increasing farmer's income was through integrating them in to safety net programs. Such program according to interviewee enables the household to diversify their income source and also in order to properly use the income gained from such programs, only half of the income was given in cash form and the remaining was given in kind in the form of agricultural inputs and technologies like fertilizers and improved seeds. However, information obtained from the woreda agricultural and rural development office revealed that there was coverage deficit in reaching household of the woreda by extension workers. Accordingly for the total of 31064 household in the woreda, there are only 88 extension workers. This makes the ratio of extension workers to household 1:435 and the coverage of 50% (BoFED, 2017). Therefore, there is problem of extension workers coverage in the study area. However, even if there was shortage of number in extension workers, they help households in diversifying their income, increasing their productivity and enhancing the wellbeing status. The following table

showed the distribution of extension workers contact among the three categories of wellbeing in the study area according to the survey data.

Table 13: Mean Frequency of Extension Contact By wellbeing Status

	Wellbeing Status											
	Not Well				Moderately Well				Well Off			
	Mean	Max	Min	std Dev	Mean	Max	Min	Std Dev	Mean	Max	Min	Std Dev
Frequency of extension contact per month	3	5	1	2	4	6	1	1	4	6	1	1

Source: Own Construct (2018)

The table above indicated the mean extension contact of those household categorized as well of and moderately well in the study area was 4 with standard deviation of 1 and the maximum and minimum contact per month was 6 and 1 for both well off group and moderately group of wellbeing. On the other hand, the average contact of extension workers per month by households grouped as not well was 3 with respective standard deviation of 2. The maximum and minimum contact by the same group was 5 and 1 time per month. This figure shows, there was difference in the number of extension contact of the household among the category of wellbeing in the study area. Regarding extension contact as categorical variable, the total households who were categorized as well off 48.5%, 39.5% and 12% households had extension contact of four and above, three times and two times per month. On the other hand 51.3%, 26.1% and 14.1% of moderately household had a contact of four and above , three and twice a month respectively while the remaining of 5% and 3.5% of the same group had a contact of every day and every month respectively. Finally, 65%, 20% and 7.3% households under not well category had extension contact of once per month, two times and three times per month respectively. The remaining 7.7 % of the respondents had an extension contact of four and above times per month. From this e can understand that well off and moderately well category of household had frequent contact with extension workers than their counter part of not well group of wellbeing. Chi square test was conducted to determine whether there is significance correlation between frequency of extension contact and wellbeing status of the household. According to the result there is significance relation between the two variables at $p<0.1$ level of significance.

4.2.4. Land Access and Source

4.2.4.1. Land Access status in the Study Area

Land as one and main livelihood asset is the most important means of achieving livelihood outcomes by deciding the nature of livelihood strategies pursued by the household especially for rural household. Land is in nature a fixed asset and its size and availability is highly affected by different factors mainly thorough population growth. For a country where agriculture is the mainstay for the economy, land access plays central role in improving household livelihood in particular and bringing better development in general. The livelihood of rural household is highly tied with land. Land is the source of everything for the household. In general having more land size means more cultivation and more possibility of production which as a result increases household farm income and improves household wellbeing (Tesfaye, 2003). However, the increase number of population size highly deteriorated the value of depending on land as it would become difficult to obtain land. Mezgebu, (2014) reported that in Ethiopia access to land is an important issue for the majority of Ethiopian people who, in one way or the other, depend on agricultural production for their income and subsistence.

Wolayita zone in general has been the highly populated area not only in the region but also in the country and the majority of household lived in the zone had usually less than 0.25 ha per household (Habtegiorgis et al, 2018). According to the interview conducted with soddo zuria woreda administrators, the woreda is among the densely populated woredas in the zone and as a result there is high shortage or scarcity of land. In the study area, majority of the respondent had land though the size of land endowment was highly differentiated. The survey result indicated that 185 (91.1%) had land whereas the remaining 18 (8.9%) did not had land. With regard to nature of land right household had for the land 142 (70%) had legislative certificate of occupancy which means they have registered their land officially and receive certificate of ownership. Whereas 38 (18.7%) had other land right of like either they were rented from others, shared with other relatives or were female headed household but the land still remained in the name of their dead husband. The remaining 3 (1.5%) and 2 (1%) household respondent had a land right of customary certificate of occupancy or none respectively. This implies that these households did not have insurance of sustainable access to their current endowment of land. In general, in the study area more than half of the respondents had land and this is to mean that the livelihoods of more than half of the respondents directly associated with land. Table below shows the distribution of households by access to land status and the type of land right they had in the area.

Table 14: Land Access Status in the Study Area

Land Access status in the study Area		
Response	Frequency	Percent
No	18	8.9
Yes	185	91.1
Total	203	100

Source: Own Construct (2018)

When we see the distribution of land access status among the category of wellbeing, 95.7% of the household found under well off category had land access. And the remaining 4.3% did not have land access in any form. On the other hand, 87.6% of household categorized as moderately well had land and 87.6% did not. And finally, 94.2% of the household who were in not well categories of wellbeing had land and 5.8% did not access land in any form. From this we can understand that land is the paramount livelihood asset for rural people in which their life depend on it. However, the figure also indicated that wellbeing is not only about accessing land although land contributes more to the attainment of wellbeing more than any other livelihood asset in the study area. The following table shows the mean land size among the three category of wellbeing.

Table 15: Land Access Status by Wellbeing Status

		wellbeing status of the household					
		Not Well		Moderately Well		Well Off	
		Count	%	Count	%	Count	%
Land access status	No	3	5.8	13	12.4	2	4.3
	Yes	49	94.2	92	87.6	44	95.7

Source: Own Construct (2018)

4.2.4.2. Land Source for the Household in the Study Area

Rural household can obtain land from different source. Such as intra household transfer through the means of inheritance or gift, community member ship in the case of common land, purchase or sell. In the study area, the former which is intra-household transfer of land is the main source of for the majority of the household respondents. The main source of land in the study is discussed below:

- **Intra-household transfer of land**- According to IFAD, (2012) inheritance and family land division are still the most common way of obtaining land for household in most developing counties. This was the main source of land for the majority of household respondents in the study area. This means of land transfer can take two forms either inheritance or gift. Inheritance can also be either from parents in most case which was the source of land for

male headed household or from husband most of the time dead husband. In general, in the study area according to survey data this was a source of land for about 157 (77.3%) household respondents i.e for about 103 (50.7%) male headed household in the form of inheritance from parents and 54 (26.6%) female headed household from inheritance from their dead husband. This finding was in line with the finding conducted by Adugna (2012) which stated that about 71.7% household in Bolosso sore district of Wolayita zone obtained their land from inheritance. During FGD conducted with the participant, this source of land in the form of inheritance from parent, gift and transfer at marriage or shared with other members and relative were confirmed to be the main source of land for the household. However, this source of land is highly biased and raise gender question. This is because as it was raised during FGD, women did not have equal right to access and own land from their parents as men do. This is due to the fact that cultural and other practices discriminate women to access land and other resources from their parent and confined them to household unpaid activities. According to the FGD conducted with member of household from different background, men are those who inherited or take land through gift from their parents. The only way women can access land is through their husband when they got married. Even this is only enabling them to have use right as far as household head is male. They will get full land access right whey their husband died even in some case the land is remained by the name of their dead husband. In some case according to the participant of FGD, women can access and inherited land from their parents if member of that household are only women. This is mainly due to cultural and traditional practices which discriminate women from accessing and inheriting land from their parents.

- **Access to land through land distribution and redistribution at the previous**- This was the second source of land for 18 (8.9%) household respondents. However, most of the household who get land from this source were old age household. This source of land was very important source in that the size of the land that gets from this source is comparatively better as compared to land obtained from inheritance. However, according to FGD participants, this type of land source is not currently in practice and is also challenged due to large number of family size and inheritance and gift.
- **Shared with relatives**- According to FGD participants, household members and relatives sometimes shared land found either at one plot or at different with their relatives. However,

this is only happened for a short period of time based on the will of household who allowed to share land with their relatives and when the households have comparatively better size of land. Unless it is difficult for households who have small land size to share with their relatives. According to the survey data, this was a source of land for 4 (2%) household respondents.

- **Rented from other in the form of share cropped in**- This was a source of land for the household who permanently did not have land in his/her name. According to FGD, Share cropped in was practiced when land possessed household head wants to share cropped out their land for a short period of time minimum one to five or more years. In the study area sharecropped out was manly taken place by female household head and those who are old aged land owners and unable to operate their land through illness and lack of different agricultural technologies and implements. According to the survey data, this was a source of land for 6 (3%) household respondents in the study area. Table below shows the distribution of source of land access in the study area.
- **Being Member of particular community and Associations**- According to FGD participants, being member to a particular community enable household to access land available for the benefit of all member of that community. This form of land is according to them common land such as common grazing land used by member of that community by virtue of being member of the community. Another example source of common land access is being member to particular associations such as cooperative. Cooperatives sometimes are source of common land because they had common land received from the government that helps their member to benefit from that common land. This form of common land is however, not fixed source of land for the household rather it is temporary and only members can join from it.

4.2.4.3. Land Size Held by the Household

Land as described above is the most important and basic livelihood asset is highly sparsely distributed among household in the study area. According to interview conducted with the woreda administrator land is a fixed asset and is as it is from the early time and the study area is one among wolayita zone which is considered as land scarce area and densely populated. According to the administrators households in the study area were highly affected by scarcity of arable land especially those who construct new households and new comer household from other

area. The size of the population in the woreda is increasing at an alarming rate. One household key informant also described the intensity of the problem of land and population size in the woreda as follow:

> *Land in our village is described as "yedimet ginbar" in Amharic which is to mean land is very small and highly scarce whereas the population is described as "gundan" which is to mean high in number or there is high population size. There is unbalance between population size and available land in our village in particular and Wolayita zone in general. This is mainly the household family size is high given their small land area. As a result household and their members are highly affected due to their in ability to get enough access to land which help them to have enough livelihood out comes.*

The average land size accessed by the household in the study area according to the FGD held at the four sample kebeles and key informant interview was 0.25 hectare. Although there were households who held less than the 0.25 most of the household had a land size of 0.25. This is quit less than the national land size average which is 0.5 hectare. The survey data indicated that out of those who had land access, the minimum and maximum land size owned by the household respondents in the study area was 0.063 hectare and 3.5 hectare respectively. The mean land size was 0.47 hectare with standard deviation of 0.70. This shows that there is big difference in land size distributions among the households. The survey result as well also portrays that more than half of those who had land access i.e. 131 (64.5%) had land size of 0.01-0.25 hectare. And 20 (9.9%) and 16 (7.9%) of the respondents own a land size of 0.26-0.5 and 0.51-1 hectare respectively. According to the survey data, household respondents who had land size in between 1-1.99 hectare and 2 and above were (1%) and 16 (7.9%). The remaining 18 (8.9%) household respondents did not have any land on a temporal or permanent nature.

Table 16: Land Size holding distribution in the Study Area

		Frequency	Percent
Land Holding Size	0 (No Land)	18	8.9
	0.01-0.25 hectare	131	64.5
	0.26-0.5 hectare	20	9.8
	0.51-1 hectare	16	7.9
	1- 1.99 hectare	2	1
	2 hectare and above	16	7.9
	Total	203	100

Source: Own Construct (2018)

As explained above, land in the study area is highly scarce as compare to the population size. The average land size was 0.47 hectare which is below the national average which is 0.5 hectare. Land access by the household in the study was become very difficult and the size of the land owned by the household was getting diminished from time to time according to the survey data. Accordingly, household respondents were asked about the trends of land size they owned from time to time. The survey data indicated that out of the total household who had land, 89.13 % of respondents reported their land had been decreased from time to time and the remaining 10.87% reported there is no change. The main reason that had been put by the respondents includes transfer to married son, increase family size, shared among relatives, nearness to town, use the land to construct new houses, due to low productivity of the land and change it to planting eucalyptus tree for trading and use it for grazing etc. According to data obtained from FGD conducted in the study area, the reason for decreasing land size in addition to the above includes the use of the land for grave or tomp area to the member of the household when they dead. This is due to lack of common grave area and widely distributed residence of the households. FGD participants were also raise the reasons for some household head to have relatively better land size as compared to those who hold less like the land policy itself leaves some to have more and other less during the previous land distribution and redistribution system, being economically better or have better source of income etc.

4.2.4.4. Factors that Determine Land Access

Bivariate analysis was done between household demographics and socio economic characteristics with land access to know whether there is significant statistical correlation. Table below shows the result of bivariate analysis.

Table 17: Descriptive statistics of Dummy and categorical variable by Land size

		Household total land size in hectare			Chi ^{2}Test	
Variable	Category	Count	Mean	Std. Dev	p-value	X^2
Sex	Female	67	0.28	.388	0.551	33.28
	Male	136	.514	.0.778		
Marital Status	Other	20	0.044	0.5	0.000	140.72***
	Married	183	0.48	0.705		
Household family size	0-4	32	.298	.365	0.000	130.89***
	5-9	159	.346	.518		
	10 and Above	12	2.014	1.196		
Cooperative	Yes	34	0.659	1.02	0.025	53.134**
	No	169	0.392	0.358		
Credit	Yes	100	0.606	0.856	0.002	63.57***
	No	103	0.273	0.396		

Source: Own Construct (2018)

The above table shows the relationship between different dummy/categorical socio-demographic and educational characteristics of household with land access or size of land they hold. Accordingly, sex is one determinant of land access as it can be shown from the table. As compared to female, the mean land size of male headed household is greater than the average land size of female. This is because in the study area according to the participant of FGD, men can access land from their parent when they got married through inheritance. Different traditional and cultural practice hindered women from accessing land through inheritance from their parents. Therefore, we can conclude that land access is differentiated based on the sex of the household head. There is statistical association between sex of the household and land size possessed by the household at p-value of 1 % level of significance.

Marital status is also one of the categorical variables that affect land access in the study area. Accordingly, married household head had more opportunity to possess land size of considerable size and marital status other than married on the other hand had less opportunity as compared to married marital status to possess land of significant size. As it can be indicated from the table, the average land size of married household head was 0.48 hectare whereas the average land possessed by divorced, widowed and single was 0.044 hectare which is less than the average land size of married household. Therefore, from this we can conclude that there was significant difference in land size endowment between the two groups of marital status. There is

significance association between marital status and land size possessed by the household at p value of 1% level of significance.

Family size is also among the categorical variable which shows the difference in land size endowment of the household. In the study area, household with large number of household member had better land size endowment. This is because most of the household heads were old age and possessed land from distribution and redistribution source of land at the previous time. Most household in the study area who had comparative small number of household members had small land size. This idea was also supported during FGD conducted in the selected sample kebele. According to the participant when they explained the relationship between family size and land size, different training and support were given by the extension workers to decrease their family size and to balance the livelihood assets and the number of children they had. There is strong negative correlation at $p<1\%$ level of significance between family size and wellbeing status of the household according to bivariate correlation test conducted between the two variables.

Being member to particular formal cooperative can also help household to access land through their virtue of being member of the particular cooperative. Therefore, cooperative positively affect size of land owned by the household and income derived from such membership. Not only this, it will also enhance the income generate by the household and invest and reinvest it in to further production. In the study area, the mean land size for those who are member of cooperative was 0.659 hectare whereas the average land size for those who are not member of cooperative was 0.392 hectare. From this we can understand that cooperative membership determine land size possessed by the household. According to chi square test there is positive association between cooperative membership and land size in the study area at $p<0.01$.

Credit access is also among the determinant of land size in the study area. Credit is source of finance and other goods needed by the household to enhance their livelihood. When we see the mean land size of household who access credit over the last production season, it was 0.606 hectare and those who did not access credit, it was 0.273 hectare. There is also significant association between credit access and land size at $p<0.05$ level of significance.

In addition to the above categorical independent variables, there are also different continuous variables that have potential effect on the land access (the size of the land) by the household. Age is among the continuous variable that have determine household access to land. In the study as it was observed and according to survey data, as age increase, the probability of household to have more land size was also high. This is due to the fact that most old aged household obtained their land from distribution and redistribution source of land at the previous time. Therefore, we can say that age may determine household size of land. The spearman correlation indicated that there is significant correlation between land size and household land size possessed at $p<0.01$ level of significance.

Formal educational status of the household is also among the continuous variable which can help to understand household land size distribution in the study area. The majority of household respondents which had better land size were found either in the illiterate or read and write educational category. Ythe mean land size of those with low educational background is higher than the average land size of those with better educational status. Therefore, in the study area, there was the decreasing of land size with an increasing of educational status of the household. Therefore, in the study area, land size distribution shows decreasing trend as educational status goes upward. However, data obtained from FGD revealed that, educational status can also create an opportunity to access land through the better income derived from non-farm activities. There is also statistical significant association between educational status and land size of the household according to bivariate correlation conducted to know their relationship.

Year of continuous stay at the village also may have potential effect on the size of the land endowed by the household. The more years household live or stay at the village, the higher the probability of land size endowed by the household. As we see from the survey data, household who stay more in the village had more land size as compared to those who live for a short period of time. This variable also have significant relation with the land size endowment at $P<0.01$ level of significance in the study area according to chi square test of significant correlation computed from survey data.

Family size is another continuous detrimental factor of land size. It may have either positive or negative influence to land size endowment of the household according to the FGD conducted in the sample kebeles. Family size may have positive contribution toward land size endowment

when the working force of the family engaged in diverse portfolio of livelihood strategies and bring different income and when this income put in to share cropped in or renting land from others. However, large family size also had contribute to decrease the already available land of household head through transferring and inherited land in to member of the family when they got married especially male. Therefore, due to this fact family size may determine land size of the household.

Distance to city is also another factor which may have potential effect on the land size endowment of the household. According to the interview conducted with the administrative of the woreda, distance to nearby city may have negative effect on the available land size of the household. This is due to the fact that some land of the household was taken to constructed new institutions building and implement government projects like universities and other. Urbanization and industrialization also have an impact on the household land although they have the probability of diversifying livelihood strategies and broadening income source of the household. However, he added that this is not always the case, sometimes being near to city enhances household opportunities to get land through diversifying income source and conduct trades in the city. This in turn will have potential influence on getting land through renting from others, share cropped and other. However, the Pearson correlation test indicates there is significant relation between distance of the city and land size endowed by the household at 1% level of significance.

Last but not least, total livestock endowment by the household in TLU may also have an effect on the land size possessed by the household. This is due to the fact that livestock are not only source of food but also source of income. They bring income from different source like either through renting, selling livestock products and etc. Livestock rearing is also one form of agricultural practice. And agriculture also needs land to perform properly. Therefore, due to the income generated from livestock, household can either rent or sharecropped in (shared land from others). There is also statistical significance correlation between household livestock endowment and household total land size endowed at $p<0.01$ level of significance according to spearman correlation conducted from survey data obtained from the household.

4.2.4.5. Land Access and Wellbeing Status of the Household

Land in combination with other livelihood stets and mediating factors determine household choice of appropriate strategies and activities that in turn bring better livelihood outcomes. Improved wellbeing as an indicator of livelihood outcome is the ultimate objective of livelihood strategies pursued by the households. However, in densely populated area where land access is difficult, attainment of wellbeing can also be challenging. According to the study conducted by Lyatuu and Urassa (2015), in Tanzania out of the total impoverished rural people, 25% and 20% are land less and lack adequate land for wellbeing. This figure indicated that land access play a significant role in achieving better wellbeing by determining appropriate and most important livelihood strategies choice. Insecure and not reasonable in terms of size and access to land is the major factor behind the majority of households' failure to attain well-being (ib id).

Clear evidence that shows the importance of land access (land size) possessed by the household in the study area is to look at the mean land size of the three category of wellbeing. Accordingly, the average land size of the household showed a decreasing trend from well off to not well category of wellbeing status. According to the survey data, the average land size in hectare of well off household, moderately well and not well group of household was 1.171, 0.234 and 0.198 with respective standard deviation of 1.078, 0.297 and 0.105. statistically, there is significant association between land size and wellbeing status in the study are at $p<1\%$ of level of significance and chi square result of 142.1 Table below shows the mean land size of the three category of wellbeing.

Table 18: Land Size Holding by Wellbeing Status

	wellbeing status of the household								
	Well Off			Moderately well			Not Well		
	Count	Mean	Std. Dev.	Count	Mean	Std. Dev.	Count	Mean	Std. Dev.
land size in hectare	46	1.171	1.078	105	0.234	0.297	52	.198	.105

Source: Own Construct (2018)

Therefore, from this we can understand that possessing land size with a considerable size help household to improve their wellbeing status. Especially, for rural household land have special importance and is the main source of living and survival.

4.2.5. Livelihood Strategies in the Study Area

Household depend on diverse portfolio of livelihood strategies for survival and bringing better livelihood outcome. These activities helps household to provide with a better means of living and survival. Household may depend on engaging diverse livelihood strategies However, the selection of one or other type of livelihood strategies are highly determined by the availability of livelihood asset including human capital, natural capital, physical capital, social and financial capital and also other mediating factors like institutions, organizations and policies. Livelihood strategies were classified in most literature by the proportion of household income generating and share and the time spent in activities by the household members (Barrett et al., 2005: Krishna, 2000: Reardon et al., 1992). The use of income share of each livelihood activities for conceptualizing, determining and defining livelihood strategies had also been employed by Eneyew and Bekele (2012) in their study of determinant of livelihood strategies. Therefore, this study had employed both the income share and the time spent by member of households in given livelihood activities to determine and define livelihood strategies of a given household in the study are. This issue had also been raised during FGD by participant in that their livelihood strategies was categorized by the main source of income and duration of time stay to perform as well as frequency of participating in that activities.

Livelihood strategies in the study area was diverse and households engage in more than one livelihood strategies and income generating activities for their means of survival and source of income. According to the participant of the FGD, engaging in diverse portfolio of livelihood activities brought better income and livelihood outcome for the households. The diverse livelihood strategies of the household are according to the participant the better achievement of the livelihood outcome. Livelihood strategies in the study area were categorized roughly by the participant of FGD as agriculture which includes crop production and animal rearing, Off-farm activities, non-farm activities, migration as source of income and pursuing in combination of these livelihood strategies. Therefore, the main source of income for the household and the time spent on such activities were critical in classifying livelihood strategies of a household in this

study. Therefore, based on these criteria, household livelihood strategies could be agriculture, off-farm, non-farm, migration or combination of these livelihood strategies.

According to the survey data, the main source of income for the household in the study area was agriculture. Most of the time one or more member of the household engages in agricultural activities. Survey data showed that more than 70.8% income of the household derived from agriculture. From agriculture, more than 80% engage in crop production and the remaining depend on mixed agriculture which included crop production and livestock rearing. This survey data is also substantiated by the data obtained from FGD. According to the participant of the FGD, agriculture which is mainly crop production is the main and the general source of income for households. However, this is mainly for those who had access to land in one or other form. However, households had also be engaged in other form of livelihood strategies in addition to agriculture to generating better income and since agriculture is not enough source of income for the household. Regarding the source of income for the land less household in the study area according to the participant, there were different off-farm activities and non-farm activities as well as migrating to different area in search of better job and income that household engaged.

4.2.5.1. Types of Livelihood Strategies and Livelihood Diversification in the Study Area

Diversifying the source of livelihood for the rural household beyond depending on single livelihood strategy have an important role in bringing better livelihood outcomes and withstanding the adverse impact of poverty and climate change (Amogne, et al, 2017). Diversification of livelihood strategies is important to supplement the failure of dominant livelihood strategies i.e. agriculture and it will also help to fill the income generating gap by farm activities at time of hard ship and difficulty. Diversification of livelihood strategies in the study area had been widely practiced by the households. This is to mean that households in the study area depend on more than two livelihood strategies for their survival and source of income. Although agriculture is the dominant livelihood strategies, this was not to mean agriculture is the sole and the only livelihood strategies followed by the households. Rather, it was in combination with other livelihood strategies. In general, according to the survey data, only 27.58% of the respondents depend on single livelihood strategies and the remaining 72.42% practiced livelihood diversification in which they combined two and more livelihood activities at a given time for their means of living. According to FGD data obtained from the participants,

diversification of livelihood strategies in the study area was mainly due to insufficient land size endowment of the households and the unbalance between household expenditure and income source from one livelihood strategies. The participants were also pointed out challenges to diversification. According to them, among the challenges of livelihood diversification in the study area were lack of human capital mainly skills and experiences that need to join to well-paid jobs, lack of financial and startup capital to start new businesses, lack of available job opportunities and high population size and as a result land scarcity . The following table summarizes the different type of livelihood strategies pursued by the respondent households in the study area.

Table 19: Livelihood Strategies in the Study Area

Variable		Frequency	Percent
Livelihood strategy	Agriculture	31	15.27
	Off-Farm Activities	10	4.9
	Non-Farm Activities	16	7.9
	Agriculture and Off-Farm Activities	39	19.21
	Agriculture and Non-Farm Activities	74	36.42
	Agriculture, Off-Farm and Non-Farm Activities	33	16.3
	Total	203	100

1. **Agriculture**- Agriculture in the study area was widely practiced by the household and was the dominant source of income and livelihood. Agriculture involved the production of crops and rearing of livestock. It also involved the production of vegetable and fruits at a garden area near their home. When we see household distribution who practiced agriculture as a sole livelihood strategies, the survey data depicted that 31 (15.27%) of the respondents were depend on agriculture for their means of living and survival. Out of the type of agriculture, 57 %, 41% and 2% practiced crop and cereal production, mixed (crop and livestock production) and other like vegetable and fruit including root crop production respectively. Idea raised during FGD depicted that Agriculture plays an important role in sustaining livelihood of a household especially the food used to consume by the member of a household is derived from agriculture. However, depending on agriculture alone is not enough to cover with all what a household need and agriculture in most case was rain fed agriculture and cannot sustain its role to be a dominant livelihood strategy from time to

time. This is because according to the participant of the FGD, in the near year agricultural production showed decreasing due to climate change and other natural disasters. As a result some household changed their farm land toward planting eucalyptus tree for trading and this may take three to four years until it becomes ready for sell and bring income for the household. Therefore, they concluded that, although agriculture is important and dominant livelihood strategies, it is not the only one to sustain and cover household income and expenditure. Among the source of income from agriculture to the household includes selling of different agricultural products like wheat, barley, maize etc. selling of different livestock products like milk, butter and other farming and livestock byproducts were also among the source of income for the household in the study area.

2. **Off-Farm Activities-** off-farm activities are activities which includes employing as a wage labor on other farm land and farm activities for a short or long period of time. Ellis (2000) noted that off-farm activities may include the involvement of households in income generating practices either on other farms or collection and selling of fuel wood, thatch and other house building materials, wild plants etc. According to him off-farm activities are mainly practiced by those with low level of income and as a result by those with low wellbeing status. In the study area the practice of off-farm activities were used by 10 (4.9%) respondent household as their livelihood strategy. As of the FGD data, most of the time this livelihood strategy was followed by those who did not have enough land or no land at all. The income derived from this livelihood strategies according to the participant of the FGD, may include either cash or in kind.
3. **Non-Farm Activities-** Are activities which will be used by the household as a source of livelihood and living away from agriculture or farming. According to Davis (2003) and Gordon & Craig (2001) non-farm activities are non-agricultural (non-farm) activities which may include trade and other wage works or sell employment that generating income mainly in cash and sometimes in kind form to the rural households. and According to the survey data, the proportions of household who followed non-farm activities solely were very small. Accordingly, only 16 (7.9%) of households engage in non-farm activities. This result is in agreement with the finding of Amogne et al, (2017) who reported engagement in non-farm activities and as a result household income from such livelihood strategies were very low in their study of determinant of engagement of non-farm activities in north

central Ethiopia. There were different reasons that were raised by the participant of FGD and key informant interview for the low share of non-farm activities as a sole livelihood activities and source of household incomes. These include engaging in non-farm activities require to some existent financial capital in the case of trading mainly petty trade. According to the survey data, the most commonly practiced non-farm activities were petty trade, selling of man-made crafts like traditional blast or carpets, daily laborer and giving transportation service mainly using motorcycle by youth. With finding is in line with the finding of Bereket (2010) which stated among non-farm activities that were widely used to practice in Damote Gale woreda of Wolayita zone includes petty trade, handicrafts, wage employment in the formal sectors, wage (daily) laborer, broker and donkey or horse cat service. In some case selling of traditional liquors were also practiced in the study area practiced mainly by those female headed household. According to Chinwe (2015) as cited in Amogne et al, (2017) most female headed household engage in activities performed inside or around their home and this is mainly due to the ability of women to work outside the home is limited. However, this is not an exceptional. In the study area there were female headed household who engaged in petty trade, selling of wood and other products etc.

4. **Agriculture and Off-Farm (AG+OFF) Activities**- as a livelihood strategies this was followed by those who were used to practice agriculture and off-farm as their source of livelihood and survival. This was mainly done according to the FGD data, by households with relatively high size and extra labor force. According to the survey data, this type of livelihood strategies were followed by 39 (19.21%) of respondent households. As compared to the other figure, this is also a low share from the total. This is due to the fact that in most cases agricultural practices require labor force at a specific production season and not throughout the year.
5. **Agriculture and Non-Farm (AG+NF) Activities-** as compare to other type of livelihood strategies practiced in the study area, this livelihood strategy take a significant share out of the total. As it can be shown from the table above, 74 (36.42%) of household respondents depend on this type of livelihood strategies. In other word, they combine agriculture with that of non-farm activities to bring with the means of livelihood for their living. The reason as to why households choose this form of livelihoods according to data obtained

from FGD is the same with that of agriculture and off-farm activities. When there is extra labor force in the household which is beyond the capacity of household agriculture, there is a need to engage in non-farm activities and other income generating activities apart from agriculture.

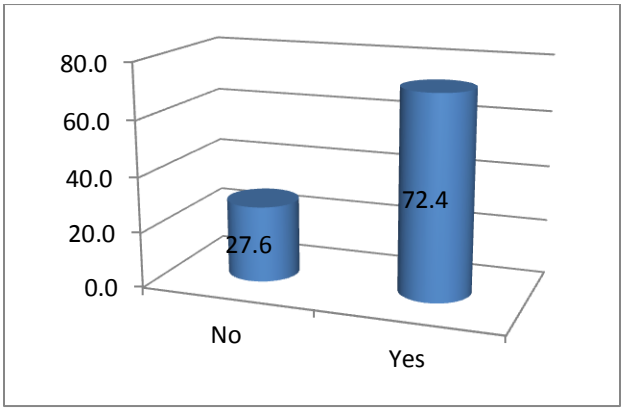
6. **Agriculture, Off-Farm and Non-Farm (AG+OFF+NF) Activities-** A significant proportion of household had also combined the three forms of livelihood strategies at a given time. This is the most diversified livelihood strategies followed by the household in the study area. According to the participant of FGD, this type of livelihood is important because it drive income to the household from different angles and sources. However, it is challenging in such it needs large number of family size and enough time (extra time) to undertake different activities. In rare cases, a single household member can engage in diverse livelihood strategies. According to the survey data, 33 (16.3%) of households were followed this type of livelihood strategies as their source of living.
7. **Migration and Remittance -** Migration either it could be temporary which involved moving from home in the morning to town in search of better job and income then returned back on the night, seasonal which is moving to other area after relieving from agricultural practices and return back to home for agricultural activities like harvesting and other or permanent which involved migrating from home area to different areas of the region and the country is also another source of income for the household in the study area. Significant number of household respondents relies on migration for source of income. There were considerable numbers of household heads and members who migrate to different area. These household members send remittance to the household. But in the study area, household head mainly migrate to other areas after they finish their agricultural activities and return back when agricultural products mainly crops became ready for harvesting. This finding was also confirmed by Bereket (2010) which stated that in Damote Gale woreda of Wolayita zone most household heads migrate to other rural and urban centers to engage in commercial farms located at awash valley. According to such study, household head mainly migrate from October to December when they finished their agricultural practices.

Seasonal and circular migration of labor for employment has become one of the most durable components of the livelihood strategies of people living in rural areas (Scoones, 1998;

Deshingkar and Start, 2003 as cited in Enyew and Bekele (2010). In the study area, significant numbers of labor force were migrated to Soddo town in search of daily wage employment. Both male and female youth were gathered at the morning in search of employers. However, according to the participant of FGD, since there ishigh population sizes in the woreda, it is difficult to obtain job for the growing and large number of daily wage employment seeker. Therefore, they are returned back to their home at the evening or stay at the town until they got possible employer. Although migration had some challenges of getting job, it is remained an important source of income and employment for the household. According to the interview conducted with key informants such as woreda and kebele administrators, there are different reasons as to why people migrate to other area. Among these in search of better employment and income, lack of job opportunities in their area, high population size and scarce land size, unable of agriculture to absorb the large number of family size are the most notable ones.

When we see the survey data which shows the level of migration in the study area almost 72.4 % of respondent households were used migration as a livelihood strategy and as a source of income in one or other form in addition to their dominant livelihood strategies. The remaining 27.6% of the respondents did not rely on migration for their source of livelihood. Figure 8 below shows the distribution of migration status in the study area when respondents asked the question of as whether the household or any member can migrate to other area in search of better employment and income.

Figure 8: Migration source of income

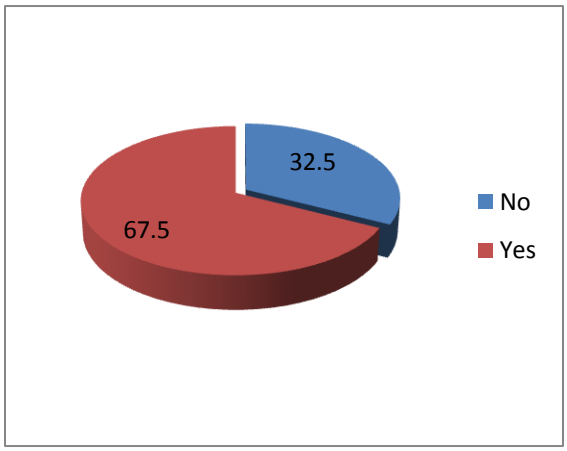


Source: Own Construct (2018)

As indicated in the above Figure more than half of the respondent household members engage in migration livelihood strategies. According to the data obtained from FGD, although migration has positive contribution to the diversification of household income, it is supportive livelihood strategies. This is to mean that no household entirely depend on migration as a livelihood strategies. They did so to increase and broaden their income base and either in addition to agriculture or other livelihood strategies.

Remittance is very important source of income for the household in the study are. Respondent household were asked whether their household receive remittance over the last one year. Accordingly, figure 9 below shows 65.7% of the respondents were receiving remittance from different area and source. And the remaining did not receive any remittance. According to the survey data, source from same woreda another kebeles and from different part of the country outside the region were the two largest source of remittance for the household. The following pie chart shows the distribution of household who receive remittances and who did not receive remittances in the study area.

Figure 9: Receive Remittance From Outside



Source: Own Survey data (2018)

Therefore, we can conclude that in addition to their main livelihood strategies, households in the study area also receive remittances from different area which help to sustain their living and improve their wellbeing.

4.2.5.2. Determinant of Livelihood Strategies

Bivariate analysis was also conducted to know the relationship of different independent variables that was hypothesized to have likelihood effect on livelihood strategies choice. Therefore, the result will present in the following tables which shows the distribution of different household characteristics by livelihood strategies choice and its correlation between them was also presented using chi square to show the level of relation.

Table 20: Bivariate Analysis of Household Dummy or categorical Social, Economic and Demographic characteristics with Livelihood Strategies

Variable	Category	Livelihood strategies followed by the household												
		AG (ONF)		OFF		NF		AG+OFF		AG+NF		AG+OFF+NF		Chi^2
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	test
Gender	Female	3	6.3	10	100	6	37.5	13	44.8	10	14.9	9	27.3	135.1***
	Male	45	93.7	0	0	10	62.5	16	55.2	57	85.1	24	72.7	
Marital Status	Divorced, Widowed or Single	3	6.3	10	100	8	50	13	44.8	10	14.9	9	27.3	50.3***
	Married	45	93.8	0	0	8	50	16	55.2	57	85.1	24	72.7	
Formal HH head Educational Status	illiterate	26	55.3	8	80	1	6.3	10	34.5	25	36.8	12	36.4	68.9***
	Read and write	0	0	0	0	2	12.5	0	0	3	4.4	2	6.1	
	1-4	5	10.6	2	20	5	31.3	8	27.6	10	14.7	6	18.2	
	5-8	9	19.2	0	0	5	31.3	10	34.5	24	35.3	11	33.3	
	9-10	5	10.6	0	0	2	12.5	1	3.4	4	5.9	1	3	
	11-12	2	4.3	0	0	0	0	0	0	1	1.5	1	3	
	Diploma or degree	0	0	0	0	1	6.3	0	0	1	1.5	0	0	
Frequency of Extension Contact	Once per month	4	8.2	0	0	3	18.8	1	3.4	2	3	0	0	46.1***
	Four and above	21	43.8	4	40	3	18.8	5	17.2	17	25.4	7	21.2	
	No contact	0	0	0	0	2	12.5	2	7	1	1.5	1	3	
	Three times	2	4.2	1	10	1	6.3	4	13.8	8	11.9	6	18.2	
	Twice	21	43.8	5	50	7	43.8	17	58.6	39	58.2	19	57.6	
Credit Receive	No	24	50	4	40	6	37.5	17	58.6	41	61.2	18	54.5	6.1
	Yes	24	50	6	60	10	62.5	12	41.4	26	38.8	15	45.5	
Use Agricultural Technology	No	4	8.3	9	90	12	75	13	44.8	15	22.4	11	33.3	46.82***
	Yes	44	91.7	1	10	4	25	16	55.2	52	77.6	22	66.7	
Agro-Ecology	dega	4	8.3	2	20	3	18.8	1	3.4	8	11.9	9	27.3	1
	woyna dega	44	91.7	8	80	13	81.3	28	96.6	59	88.1	24	72.7	

***, ** and* represents level of significance at p<0.01, p<0.05 and p<0.1 respectively

Source: own Construct (2018)

As it can be seen from the above table 18, sex of the household head is one determinant variable of livelihood strategies. This is due to the fact that male and female did not have equal opportunity to access basic livelihood asset and as a result pursue same livelihood strategies (Ellis, 200). When we see sex distribution among the different livelihood strategies, the number of male headed household engaged in diversified livelihood strategies overpass that of female headed household. Most female headed of household by far engaged in low paid off-farm or agricultural activities. The chi square statistical test also shows that there is statistical significant association between household sex and livelihood strategies choice at $p<0.01$ level.

Marital status was also among the determinant of livelihood strategies that have likelihood effect on livelihood strategies choice. This is mainly due to the fact that married household either male or female had the opportunity to engage most probably in agriculture livelihood strategy. Married household more likely engage in to agriculture livelihood strategies as compared to their counterpart marital status because they had more probability to access land through inheritance from parents as they got married. Chi square test were run to know whether there is correlation between livelihood strategies and marital status of the household. According to the result, there is statistical association between the two at Pearson chi^2 of 50.33 and $p<0.01$ level.

As education increase, the possibility to engage in non-farm and well-paid job is also increase. Not only this, education can also enable household to generate better income from better paid job and in turn invest such income in to land access either through rent, or sharecropped in according to FGD participants. Therefore, education can determine the possibility of household to engage in different livelihood strategies. Teklu (2016) stated educational attainment increase household the chance of gaining well paid job and better income. In the study area as the survey result shows households with low educational status were tends to engage in agriculture and off-farm activities. There is significant statistical relation between household educational status and livelihood strategies choice according to chi square statistical correlation at X^2 of 68.9 and $p<0.01$ level of significance.

Extension workers are supposed as a source of new idea and new agricultural technology and its frequency of contact with the household also determine the type of livelihood strategies followed by the household. In the study area as revealed from the above table, frequency of extension workers contact with the household is not fairly distributed. However, the chi square test shows

there is significant relation between the two at $p<0.1$ level of significance and chi square result of 46.1.

Credit is source of income for starting new livelihood strategies or solidification the one at hand. Household in the study area use credit for different purpose. According to the interview with the head of agricultural development office of the woreda, credit was given to the household not only in the form of cash but also in kind like agricultural inputs and improved seeds in collaboration to omo micro-finance. Therefore, in study area as the survey data shows households who use credit follow diversified livelihood strategies. Credit use did not have statistically significant association with livelihood strategies according to chi square test.

Agricultural technologies and inputs are most important to increase farm productivities. Data obtained from interview with the head of agricultural development office of each sample kebeles revealed that household in the study area were guided and supported to use new agricultural inputs and technologies. This is because it has positive relation with increasing agricultural productivity of the land. Due to this fact, the use of agricultural inputs and technologies through increasing agricultural productivity will have an effect on the livelihood strategies choice. This was mainly practiced by household who follow single livelihood strategies. According to the chi square test there is strong positive and significance relation between use of agricultural inputs and technologies and livelihood strategies at $p<0.01$ level.

Agro-ecology zone also have an effect on the livelihood strategies choice due to the fact that different agro-ecology have different production capacities and fertility of the land and weather condition (Enyew & Bekele, 2012). Therefore, as a result when household lies in highland or mid land, they follow different livelihood strategies that fit their weather condition and livelihood. However, the chi square test indicated that there is no significance association between livelihood strategies and agro-ecology.

In addition to these dummy or categorical variables, there are also continuous variables that have likelihood effect on the choice of livelihood strategies by the household. These include:

Age of the household: different age category of the household has different capacity, capabilities and skill. As a result they may follow also different livelihood strategies. For example in the study area those old aged household head had more land and follow agricultural livelihood

strategies whereas for the newly married household heads since getting land became difficult, they search alternative and available livelihood strategies. Therefore, they are more likely to diversify their livelihood base and strategies. Chi square test showed that there is strong and association between age and livelihood strategies at $p<0.01$ level of significance and chi square result of 416.8.

Land as one determinant factor of livelihood strategies is very important for the rural poor who depend on agriculture and related livelihood strategies. In the study area, land is fixed and barely supplied and the household suffered from insufficient arable land. As a result, it is mandatory for those household to look other possible livelihood strategies that will help them to sustain their household income and expenditure or their livelihood. As the survey data indicated, there is strong significant association between land size of the household and livelihood strategies choice at $p<0.01$ level of significance and chi square result of 759.9.

Family size is also among the determinant of livelihood strategies in the study area. This is due to the fact that more family number means more working force which is beyond a dominant livelihood strategy and forced members to search other means of income and living. And also more family size means demand for more food and other expenditure. Therefore, these surplus labor forces goes to new strategies or are more likely to diversify their livelihood strategies in order to diversify their income base and to get better source of living. Based on the spearman chi-square correlation for categorical and continuous variable, there is strong and significance association at $p<0.01$ and x^2 of 162.2 between household family size and livelihood strategies in the study area which was computed from the survey data.

Parallel to the size of family members, real dependency ratio which is the ratio of not working force to those of working multiplying by hundred is an important livelihood strategies. As dependency ratio increases, the burden of working force also increases and they will find different source of income and livelihood which will help to sustain their dependents. To do so it is must for the working force to look alternative livelihood strategies and diversify their livelihood outcome. Chi square correlation was conducted in order to know whether there is significant relationship between livelihood strategies and dependency ratio. Accordingly, there is significant association between livelihood strategies and dependency ration in the study area according to the computed chi square result ($x^2 = 84.6117$ and $p<0.01$).

Income derived by the household from different source is important to increase household choice of livelihood strategies. The more the income of the household is the better chance of engaging in diverse portfolio of livelihood strategies. More income is also important for household wellbeing which is also one indicator of livelihood outcome. Spearman correlation also showed that there is significance relation between household income and livelihood strategies choice.

Market distance and distance to nearby city were also the other determinants of livelihood strategies in their separate domain. As the distance to market decrease, household will engage in different non-farm livelihood strategies like petty trade, daily labor wage etc. the same is true for the distance to city. Cities are the place where different organizations and institutions found and the potential to engage in well paid job is better in cities than rural counterpart. Therefore, when the distance to city decrease, different employment opportunities were also available. Migration will also play its role when the distance to city is small. In contrast to this, the chi square test shows both distance to market and distance to city are not significantly correlated with livelihood strategies in the study area according to the survey data.

Total livestock unit is a unit of measurement based on the conversion factors of different livestock. When the aggregate TLU became large, it is important source of livelihood and survival. This is because livestock in rural area plays an important role in sustaining the life of the rural poor. First most agricultural activities were performed with the help of livestock. They are also source of food and income. As a result it is important determinant of livelihood strategies. In the study area, the average TLU possessed by households who follow different strategies was different. There is also significant association between total livestock endowment and livelihood strategies choice at $p<1\%$ and chi square of 84.611.

4.2.5.3. Livelihood Strategies and Wellbeing Status of the Household

Diverse activities performed by household to provide with better means of survival and living are called livelihood strategies. Household engaged in different livelihood activities in order to meet their demand for food, income and different expenditures. However, household choose diverse livelihood strategies based on their available livelihood asset and resource at their hand. Different livelihood strategies have different livelihood outcome. Diversification of livelihood strategies gives household better chance of achieving increased income and better wellbeing as

an indicator of livelihood outcome. Giving this in to account household in the study area engaged in different livelihood activities. As described above about diversification of livelihood strategies at the study area more than half of the respondent which accounts 64.6% replied as they practiced two and more livelihood strategies at their household level. The remaining 36.4% depend on single livelihood strategies for their source of living and survival.

In the study area, when we see the share of livelihood diversification status between the group of wellbeing status out of the total households who fall under well off categories which accounts 43 (93.47%) practiced diversification whereas the remaining 3 (6.53%) practiced only single livelihood strategy as their source of livelihood. This result indicated that diversified livelihood strategy play a paramount role in attaining wellbeing of the household in combination with other indicators. 96.19% of households under moderately well category of wellbeing also practiced diversification of livelihood strategies and the remaining 3.81% depend on sole livelihood strategy. When we see the diversification practice of household who are categorize as not well, only 5.77% of the household practiced diversification and majority of the household who accounts 94.23% depend on single livelihood strategy for their livelihood source. Chi square test revealed that there is significance correlation between livelihood strategies diversification and household wellbeing at Pearson chi square of 155.5 and $p<0.01$ level of significance. Table below shows the distribution of household livelihood strategies by wellbeing status in the study area.

Table 21: Descriptive Statistics of Livelihood Strategies by Household Wellbeing Status

livelihood diversification	wellbeing status of the household								
	Not well		Moderately		Well off				
	Count	%	Count	%	Count	%	Total	%	X^2
No	49	94.23	4	3.81	3	6.53	56	27.58	155.5***
Yes	3	5.77	101	96.19	43	93.47	147	72.42	
Total	52	100	105	100	46	100	203	100	
P<0.01 level of significance									

Source: Own Construct (2018)

4.3. Econometric Estimation and Analysis

In the previous descriptive part of this chapter, factors which encompass socio-demographic, educational as well as economic characteristics of the respondent household were presented and discussed. In addition the nature relationship among different respondents' characteristics with wellbeing status, land access and livelihood strategies was also determined by using chi square, t-test and other correlation test of statistical significance. In addition to the descriptive statistics, inferential statistics mainly econometric model were also used to estimate the effect of different explanatory variable over dependent variable and to determine the relationship that exist among dependent and independent variables. Therefore, this section will present the econometric analysis and discussion part of the study.

Under this section three models that were used to estimate the likelihood effect of independent variable over dependent variables will be discussed and their result will interpret accordingly. Hence, the first part of this section deal with ordinary least square model that estimate the effect of socio-demographic factors on land access followed by multinomial logistic model used for the estimation of the effect of different explanatory variables that was hypothesized to have effect on the livelihood strategies choice. Finally, order model that was used to test the effect of different socio-economic and demographic as well as institutional characteristics toward the already constructed wellbeing status of the household will be presented and its result will be interpreted and discussed.

4.3.1. Econometric Estimation of Land Access and Household Characteristics (OLS Model)

The Different demographic and socio-economic factors that had been hypothesized to have an influence on land access were estimated by using ordinary least square model. However, before going to OLS estimation result, it is better to conduct diagnostic test for the model.

4.3.1.1. Diagnostic Test

Before going to the model estimation and analysis, it is important to perform some important tasks of diagnostic test which includes testing the problem of multi-collinearity and contingency

coefficients among the selected explanatory variable (Gujarati, 2004). The following diagnostic tests were conducted for the ordinary least square model.

Test of Multi-collinearity

Multi-collinearity showed there is a relationship among the explanatory variables and it will occur when the correlation coefficient between two variables is greater than 0.8 and less than -0.8. When the correlation coefficient is greater than 10%, there is a serious problem of multi-collinearity (Stock & Watson, 2007). Accordingly, the test result indicated that the correlation coefficient between all variables under consideration is less than 10%, the maximum values are value is 0.9062 (see appendix 1). This implies that there is no serious problem of multi-collinearity and the explanatory variables can separately contribute to the variation in the dependent variable. In addition the mean VIF result of 4.45 which is below maximum value 10 also confirms that there is no serious problem of multi-collinearity.

Omitted Variable test

Regression analysis generates the best unbiased linear estimates of the "true" coefficients provided that some assumptions are satisfied. One assumption is that there are no missing variables in the model. In this research Ramsey RESET test using powers of the fitted values of land size and the result showed that the model has no omitted variables (where F (3, 190) = 2.13 and Prob> F = >0.23. . We fail to reject the null hypothesis which says there is no omitted variable bias.

Model Specification and Goodness of Fittest

Goodness of fit test evaluates how well a regression model fits the data. The usefulness of the model in indicating the amount of variation in the dependent variable was tested using Cox & Snell R Square and the Nagelkerke described as Pseudo R^2. And accordingly, if the R square value is greater than the standard value of 50%, there is better goodness of model fit data. Hence, in this research the R squared value is 0.7942 (see Appendix 2), which indicated the model was fitted well.

Link test was run to test the model specification error. The null hypothesis stated that there is no specification error. If the p value of hatsq is not significant then we fail to reject the null

hypothesis and concluded that our model is correctly specified. So the value of hatsq is the model was found to be insignificant with P value of 0.437 (see appendix 3). Thus, it is concluded that there is no specification in our model.

Test for Hetroscedasctisity

In principal way heteroskedasticity do not cause ordinary least squares coefficient estimates to be biased, although it can cause ordinary least squares estimates of the variance (and, thus, standard errors) of the coefficients to be biased(Gujarati, 2004). In connection to this hetroscedasctisity test was used through Breusch-Pagan / Cook-Weisberg test using hettest command and the result (H_o: Constant variance Variables: fitted values of land_size where chi2 (1) = 93.3 and Prob > chi2 = 0.0000) shows that there is heterorskedasticity which needs to be dealt with. Therefore, to have constant variance and address heteroskedasticity problems, the regression analysis was adjusted through robust. Hence, there is no heteroskedasticity problem.

Therefore as described above, OLS model was used to estimate the effect of different socio-demographic and economic characteristics of the household on land access (size of land household endowed). The following table shows the odds ratio, the p-value and the marginal effects of explanatory variables on the dependent variable i.e. land access.

Table 22: Ordinary Least Square estimation result for determinant of land access

Linear regression

Number of obs = 203
F(14, 188) = 16.26
Prob > F = 0.0000
R-squared = 0.7942
Root MSE = .32092

		Robust				
land_size	Coef.	Std. Err.	t	P>t	95% Conf.	Interval
Hhage	0.015597	0.004044	3.86	0.000***	0.007619	0.023574
Hhsex						
Male	0.007015	0.051471	0.14	0.892	-0.09452	0.10855
Native						
Yes	0.104827	0.050444	2.08	0.039**	0.005318	0.204336
formaeducgrade	-0.00034	0.007051	-0.05	0.962	-0.01425	0.01357
dista_hhtocity	0.038956	0.011381	3.42	0.001***	0.016506	0.061407
tlu_hh	0.00549	0.035787	-0.15	0.878	-0.07608	0.06511
credit_recieve						
Yes	0.05423	0.04402	-1.23	0.219	-0.14107	0.032603
wellbstatu						
moderately well	0.139137	0.052621	2.64	0.009***	0.035333	0.242941
well off	0.292095	0.092881	3.14	0.002***	0.108872	0.475319
hhfamilsize	0.023699	0.016481	1.44	0.152	-0.00881	0.056211
Deperat	0.024168	0.057242	0.42	0.673	-0.08875	0.137086
cooperativepartic	0.166603	0.077652	2.15	0.033**	0.013421	0.319785
Other	1.69E-08	1.97E-08	0.86	0.393	-2.20E-08	5.57E-08
Caw	2.23E-05	2.36E-05	0.94	0.347	-2.4E-05	6.88E-05
_cons	-1.05022	0.221163	-4.75	0	-1.4865	-0.61394

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Own Computation (2018)

As it can be seen from the above regression result, all independent variables together are important determinant and significantly affect the dependent variable of land size in the study area because the Prob > F is greater than 1%. Pseudo R2 which tells how much the independent variable explain the dependent variable in the model is 79.42% which greater than the standard value of 50%. This implies the variation in the dependent variable of land size can be explained by the variation in the explanatory variables by 79.42%. As far as individual explanatory variables included in the model is concerned, the aforementioned linear regression result showed that household age, native, distance to city, household wellbeing status and cooperative participation was found to be significance at 1% and 5% significance level. Significance

variables in the model had negatively or positively affecting the tendency of household access to land. Sex of the household head, credit received and formal educational status, family size and total livestock endowment in TLU become insignificant in predicting the likelihood of land access.

Age and Land Access

Age is one of the demographic variables which have implication on household head being access to land and determine the total hectare land possess. As it was hypothesized, age was found to have positive relationship with land access (size) with statistical significant at 1 %. The regression results revealed that as age increases, household predicted access to land increases by 0.01555 hectare. This implies that as people becoming older and older their tendency to access to land is also increase. The source of land for the old age household was mainly during land distribution and redistribution at previous time. Hence, household headed by adult and above have more land size than younger or youth generation.

Native and Land Access

The relationship between being native and land access has become positive and significant at 5% level of significance with coefficient value of 0.1048. In other word, native resident affect land access (size) of the household positively and which was significant at 5% of significant level. The regression result revealed that native household in the study area has more opportunity to access land. The predicted value of natives indicated that native household or being native in the study areas would increases access to land by 0.1048 hectares. This implies native population has more land access opportunity than that of not natives

Cooperative Membership and Land Access

Access to land through community/ social networks membership was another source of land and other resource to the household in the study area. This may take the form of access to land in common property such as common grazing land. In this case land can be accessed through becoming community membership and is allocated to individual through community governance structure (Wolf, 1996). In the study area, being member to cooperative had brought household with access to common land for the participation of different activities. As it was expected, cooperative membership and access to land has shown a positive and significant relationship at

5% level of significance. The result of the regression analysis shows that as household heads becoming member of cooperatives, their predicted land size/access increases by 0.1666 hectare, given other factors remain constant.

Household wellbeing Status and Land Access

Wellbeing is an indicator of desirable livelihood outcome. Land in rural areas is a big economic instrument for being well of, moderately well and not well. In this regard, household wellbeing and land access has positive association and significant at 1%. The regression result revealed that as household transferred to moderately well, their predicted land size which would be possed would increases by 0.139 hectare. In other word, the predicted land size for moderately well household is 0.139 higher than not well category of wellbeing household. Moreover, as household transferred to well off, their predicted access to land would increases by 0.292 hectare. In other word, the predicted land size (access) for well off household is 0.292 higher than not well category of household. From this we can understand that both wellbeing categories especially moderately and well off and land access had positive relationship.

Distance to City and Land Access

As a result of expansion of urbanization, rural land became gets scarce and the opportunity to get land became difficult. Therefore, rural areas who are near to city suffered from the process of urbanization and industrialization. As it was expected, distance to city and land access has positive association and significant at 10%. This is to mean that as the one independent increase by some unit, the dependent variable will also increase by some unit. The coefficient value of 0.3895 indicates that as household distance to city increases by one kilo meter, household predicted land size would increases by 0.3895 hectare. In other word, the predicted land size of the household increase by 0.3895 hectare for one kilometer increase in distance to city (town).

4.3.2. Econometric Estimation of Livelihood Strategies (Multinomial Model)

To estimate the determinant factors of household livelihood strategies choice, multinomial logistic regression model was used. Livelihood strategies supposed to be utilized and practiced by household in the study areas were first classified in to seven. However, According to the data obtained from survey and FGD, migration as an independent livelihood strategy was rarely practiced and it had supportive role for the income of the household. Therefore, this was reduced the number of livelihood strategies in to six. The first household group was those household who

are engaged in agriculture/farm livelihood strategies. The second group was households engaged in off-farm activities; the third categories of household are those who engaged in non-farm activities. The fourth group was households who engaged in off-farm and farm/agricultural activities (AG+OFF). The fifth group was households who engaged in agriculture and non- farm (AG+NF). The last group or category was households who are involved in diversified economic activities which is farm, non-farm and off-farm (AG+OFF+NF). Accordingly, determinates of each independent variable on choice of livelihood strategies has been illustrated in the table below using a multinomial logistic regression estimator.

The interpretation of the result was analyzed using coefficient and marginal effect of each explanatory variable. In connection to this, the marginal effect shows the percentage change in the odd ratio attributable to the unit of change in one of the variable. And the sign of the coefficient shows the way or direction of influence of the variable on the logit (Waweru, (2014). Therefore, positive and negative coefficients are associated with a higher and lower likelihood of the outcome compared to the reference category, other factors assumed constant. In nutshell, only significant explanatory variable were interpreted. Agriculture (on farm) livelihood strategy was served as a reference category or base outcome for this study. This is to understand the trend of diversification and households practice of other livelihood strategies apart from agriculture in the study area.

Table 23: Econometric estimated results of livelihood strategy (Multinomial Estimation Result)

Multinomial logistic regression — Number of obs =203
LR chi2(50) =589.46
Prob> chi2 = 0.000
Log likelihood = -55.876298 — Pseudo R2 =0.8406

Choice	OFF_FARM (OFF)				NON_FARM (NF)			
Variables	Coef.	dy/dx	z	P>z	Coef.	dy/dx	z	P>z
Land size	-5.257852	-0.0001487	-1.88	0.06*	-21.65743	0.011581	-0.000	0.998
HH head sex (Male)	-13.323	-0.1984975	-2.13	0.033**	11.8561	19.26452	0.000	0.999
HH head Age	-0.3585239	0.0014696	-1.69	0.092*	0.8184634	0.00115	0.000	0.998
Formal educa. grade	0.57076	-0.0153966	0.7	0.485	7.785872	0.003066	0.01	0.995
HH family size	0.9398285	-0.0047756	1.11	0.268	-0.8972352	0.003012	-0.000	0.999
Credit receive (Yes)	0.1604406	0.0127188	0.07	0.947	3.697393	0.000872	0.000	0.999
Income hh	0.0028031	0.00000225	1.56	0.118	0.0020045	6.26E-06	0.000	1.000
Total livestock (TLU)	-0.8448815	-0.0013527	-1.66	0.098**	0.0337234	0.001818	0.000	1.000
Freq. exten. contact	-0.1552688	0.0051172	-0.13	0.9*	-1.202586	0.00188	-0.000	1.000
Marital status (Married)	-7.351913	-0.1282489	-2.19	0.029**	5.988304	0.079267	0.000	0.999
_cons	30.5503		1.85	0.064*	-96.26876		-0.000	0.997
	AG and OFF_FARM (AG+OFF)				AG and NON _FARM (AG+NF)			
Variables	Coef.	dy/dx	z	P>z	Coef.	dy/dx	z	P>z
Land size	-7.745185	-0.0584969	-2.69	0.007***	-5.345056	-0.0385	-2.2	0.031**
HH head sex (Male)	-12.89193	-0.2358961	-2.01	0.045**	-7.978653	0.177808	-1.3	0.197
HH head age	-0.8202843	-0.0090582	-3.65	0.000***	-0.3905359	0.008906	-2.1	0.034**
Formal educa. grade	2.101542	0.0150865	2.38	0.017**	1.646821	0.022939	2.21	0.027**
Hh family size	1.516132	0.0016545	1.79	0.073**	1.303429	-0.02639	1.61	0.107
Credit receive (Yes)	-0.9398957	-0.0061228	-0.42	0.678	-0.6627902	0.019595	-0.3	0.732
Income hh	0.0028427	-0.0000025	1.63	0.102	0.0030998	0.0000463	1.84	0.066*
Total livestock (TLU)	-0.7993834	0.001364	-1.41	0.158	-0.8850432	-0.01126	-1.7	0.085*
Freq. exten contact	-0.7768734	-0.0089707	-0.65	0.515	-0.4779184	-0.01084	-0.4	0.671
Marital Status (Married)	-1.816786	0.0605822	-0.55	0.582	-3.181588	-0.06112	-1.1	0.264
_cons	40.28255		2.47	0.013	23.62572		1.63	0.103

AG,OFF_FARM and NON_FARM (AG+OFF+NF)					AG (ON_FARM) base outcome
Variables	Coef.	dy/dx	z	P>z	
Land size	-4.323335	0.0413749	-1.72	0.085*	
HH head sex	-5.649245	0.1406586	-0.9	0.37	
HH head Age	-0.5598687	-0.0058412	-2.75	0.006***	
Formal educa. grade	1.423085	-0.0071936	1.81	0.071*	
HH family size	2.367972	0.0450569	2.8	0.005***	
Credit receive (Yes)	1.451823	-0.0334141	-0.71	0.477	
Income hh	0.0025814	-0.0000139	1.5	0.133	
Total livestock (TLU)	-0.7879357	0.0018789	-1.44	0.15	
Freq. exten. contact	-0.2208162	0.010585	-0.19	0.849	
Marital Status (Married)	-0.3070059	0.0982297	-0.1	0.918	
_cons	17.46826		1.18	0.24	

Source: Own Computation (2018)

Reference group- AG

*** p<0.01, ** p<0.05, * p<0.1

The above multinomial regression table indicated that all independent variables together are significantly affects the dependent variable which is represented by Prob> chi2 which is less than 1% and concluded that all independent variables together are determinant factors. The Pesudo R2 measure which is around 84.06% which is far from the standard value of 50% implies that independent variables have the power to explain the dependent variable. As far as individual significant explanatory variables are concerned, from the total of ten (10) explanatory variables, nine (9) of them were found to be statistically significant at 1% ,5% and 10 % level of significance in a separate domain of each livelihood strategies. These are sex of the household head, age of the household head, family size, and educational status, and land size, marital status of the household and aggregate monthly income of the household and total livestock endowment, while the remaining one variable was found to be not significance.

Sex and Livelihood Strategies

Sex is one of the demographic variables which have an effect on the household livelihood strategies choice. Ellis (2000) stated that men and women have different access to resource and opportunities that enable them to pursue their livelihood strategies. As explained by Eneyew & Bekele, (2015) since most female headed household invest their time on unpaid domestic activities like children keeping, water fetching etc., they have less opportunity to engage in diversified or non-farm activities as compared to men.

As it was hypothesized, sex of the household head has a negative and significant association with both OFF (0.033) and AG+OFF (0.007) livelihood strategies choice at 5% and 1% level of significance choices. Looking at the sex parameter indicated that as the household head was being male headed, the multinomial log-odd for preferring off-farm (OFF) and agriculture and off-farm (AG+OFF) than agriculture (ONF) would be expected to decrease by 13.323 and 12.891 units respectively holding other things constant. This implies that male category of the population were not choose to engaged in AG+OFF and off-farm (OFF) livelihood activities than female counterparts. The value of the coefficient indicated that sex influence the choice of the two livelihood strategies choice OFF and AG+OFF categories in an inverse way compared to the reference group i.e. AG (ONF). The marginal effect value for sex which is -0.1984 for OFF and -0.05849 for AG+OFF livelihood strategies also indicated that the predicted probability of choosing OFF and AG+OFF livelihood strategies as compared to AG was decrease by 19.84% and 5.85 %

respectively as the sex of the household head being male assuming other factor constant. This finding is inconsistent (not in line) with findings of Enyew and Wegayehu (2015) which reported that being female headed household decrease the opportunity to engage in off-farm and agricultural activities.

Age and Livelihood Strategy

As confirmed by Eneyew and Bekele (2015) empirical studies, young household cannot get enough land to engage in agricultural activities and support their livelihood. As a result they could be pushed to engage in non-farm and off-farm activities. In contrast to this, older household head which are less active are more likely to depend on agriculture (ONF) than off-farm or non-farm activities for their source of livelihood (Reardon et al., 1992: Eneyew and Bekele (2015).

According to the multinomial regression result, age of the household head was found to have significant at 5%, 1% and 5% and 1% and negative relation with OFF, AG+OFF, AG+NF and AG+OFF+NF livelihood strategies respectively. In other word, as age of the household increase by one year, the tendency of household to engage in livelihood strategies away from agriculture or to diversify their livelihood strategies will decrease. The result of the regression reveals that if households were to increase age by one unit (year), the multinomial log odds foe household preference to engage in OFF, AG+OFF, AG+NF and AG+OFF+NF would be expected to decrease by 0.3585, 0.820, 0.3905 and 0.5598 unit respectively while holding other variables in the model constant. The value of marginal effect for age shows that with one year increment in age of the household head, the predicted probability of choosing OFF, AG+OFF, AG+NF and AG+OFF+NF livelihood strategies decreases by 0.146%, 0.905%, 0.89% and 0.58% respectively assuming other variables included in the model constant.

This implies that older people more focus on agriculture than other livelihood choices in rural areas. This is because older people have more land size than young people in the study area. In addition to this old age household head were unable to diversify their livelihood strategies because they were stable and have sustainable livelihood strategies. This finding is consistent with the finding of Enyew and Wegayehu (2015) which stated household engage in diversified activities at decreasing rate with increasing age.

Family size and Livelihood Strategies Choice

Most literature argued that as family size increase, the demand for food to sustain the family members also increases; and in turn result in surplus labor beyond the farm activities capacity to absorb. This surplus labor of family members may engage in non-farm, off-farm activities or may migrate to other place to get extra income and food for their livelihood. Therefore, family size has positive effect on the household to choose diversified livelihood strategies in order to sustain the demand for food and income for the member of the household. The result of econometric estimation depicts that family size has significant at 10% and 1% and positive relationship with both AG+OFF and AG+OFF+NF respectively (mix of farm, non- farm and off farm) livelihood strategies.

Assuming other thing remain constant, the coefficient result indicated that if the family size was to increase by one unit (member), the multinomial log odds for preferring AG+OFF and AG+OFF livelihood strategies than agriculture would be expected to increase by 1.5161 and 2.3679 unit while holding all other variables in the model constant.. The marginal effect value of 0.0016 for AG+OFF and 0.04505 for AG+OFF+NF indicates that the predicted probability of choosing AG+OFF and AG+OFF+NF over AG increase by 0.16% and 4.50 respectively as family size increase by one person, assuming other factor constant. This finding is in line with findings of Bozermer and Lerman (2003) and Khan (2007) which stated that the larger the family sizes, the higher the probability to participate in varied income sources apart from agriculture and off farming activities.

Land Size and Livelihood Strategy

Land is an important livelihood asset where majority rural people depend for their livelihood and survival. As expected, land size has negative relationship with off-farm (OFF), agriculture and off-farm (AG+OFF), agriculture and non-farm (AG+NF) and AG+OFF+NF (more diversified) livelihood strategies choices and significant at 5%, 1%, 5% and 10% level of significance respectively. In this regard, the coefficient value indicated that if household land (access) size was to increase by one hectare, the multinomial log-odds for preferring OFF, AG+OFF, AG+NF and AG+OFF+NF would be expected to decrease by 5.257, 7.745, 5.345 and 4.323 units respectively holding other variable included in the model constant. The marginal effect value of land size as explanatory variable indicated that the predicted probability of choosing OFF, AG+OFF, AG+NF and AG+OFF+ NF livelihood

strategies than agriculture (ONF) was decrease by 0.0148%, 5.849%, 3.85% and 4.137% respectively as household land size increase by one hectare while other variables in the model remained constant.

This is because when household have considerable land size, their reliance on farm (agriculture) livelihood strategy will also increase and they will be satisfied with the agricultural activities and production. This will make them not to diversify their livelihood strategies apart from agriculture due to the fact that agricultural practices with considerable land size enable them to have better outcome. Therefore, from this we can understand that land is paramount important for the rural household to deploy on agriculture. This finding is consistent with the finding of Adugna and Wegayehu (2012), Berhanu (2007), Mulat et al., (2006) and Khan (2007). Finding by Adugna and Wegayehu (2012) stated that there is significant and negative relationship between land size and off-farm and non-farm (diversified livelihood strategy). In other word, they stated that household with more land tends to follow agriculture or on-farm livelihood strategy through agricultural intensification. In addition study by Berehanu (2007) identified that he participation in agriculture livelihood strategy is influenced by size of land owned by the household

Marital Status and Livelihood Strategy Choice

Marital status has a negative association with off-farm livelihood strategy and significant at 5%. This is to mean that as household head being married, engaging in to off-farm activities than engaging in agriculture will decrease. This is because married household head both male and female can access land either though inheritance from parents or access land through their husband. As a result married household head had more opportunity of accessing land and subsequently engage in to agricultural activities as compared to other marital status. The coefficient result -7.351 indicated that as household head being married, the multinomial log odds for preferring to engage in off farm (OFF) livelihood strategy than agriculture (ONF) would be expected to decreases by 7.351 unit, assuming all other variables in the model constant. On the other hand, the marginal effect value of -0.12824 for marital status under OFF livelihood strategy indicates that the predicted probability of preferring OFF (Off-farm) livelihood strategy over AG (agriculture) decreases by 12.82% as household became married than other marital status, assuming other variable in the model constant. This implies that married headed household has high tendency to engage in agricultural livelihood strategies.

Household Income and Livelihood Strategy

Income obtained from different source will have positive impact on livelihood strategies choices especially to diversification of livelihood strategies and in turn it has also positive outcome to household wellbeing. As it was expected, income of the household was found significant at 5% and had positive relationship with AG+NF livelihood strategy. The coefficients value indicated that if household income was to increase by one unit (ETB), the multinomial log-odd for choosing AG+NF livelihood strategy than agriculture would be expected to increase by 0.00309 units while holding all other variables in the model constant.

The value of marginal effect for income which is 0.0000463 indicates that while other variables held constant, the predicted probability of choosing AG+NF livelihood strategy over agriculture increases by 0.00463% with one unit (ETB) increase of household income. This implies household with more income will more preferring to engage in diversified livelihood strategies than single livelihood activity i.e agriculture.

Education status and livelihood strategy choice

Educational status has significant at 5%, 10% and 5% and positive association with AG+OFF, AG+NF and AG+OFF+NF livelihood strategies respectively according to the estimation result. In general, education and diversification of livelihood strategies were goes hand in hand and both had positive relationship. This is because as education status of the household increase, income derived from different source will also increase and such income in turn will also invest by the household in to diverse portfolio of activities. The coefficients result showed if education status of the household head was to increase by one year of schooling, the multinomial log-odds for preferring AG+OFF, AG+NF and AG+OFF+NF to agriculture would be expected to increase by 2.101, 1.646 and 1.423 units respectively while assuming other variable in the model constant.

The value of marginal effect for educational status of the household as an explanatory variable indicates that with one year increase in educational status, the predicted probability of choosing AG+OFF, AG+NF and AG+OFF+NF over agriculture also increases by 1.51%, 0.72% and 2.34% respectively while holding other variable in the model constant. This implies that educated people are not more engaged in agriculture alone as means of livelihood. This finding

inconsistent with findings or arguments of enyew and Wegayehu (2015) which reported that education and diversification had negative relationship.

Livestock Endowment and Livelihood Strategy Choice

Agricultural activities in most developing countries assist by animal specially oxen and livestock holding have influence on the household choice to engage in agricultural activities or other non-farm/off-farm activities. In contrast to prior expectation, livestock endowment in TLU was found significant at 10% for each and negative correlation with OFF (off-farm) and AG+NF livelihood strategies. The regression result revealed that if the household livestock endowment was to increase by one unit (TLU), the multinomial log-odds for choosing OFF and AG+NF than AG (agriculture or on-farm) livelihood strategies would be expected to decrease by 0.8448 and 0.885 units respectively while holding all other variables in the model constant.

The marginal effect value for livestock endowment in TLU indicates that the predicted probability of choosing OFF and AG+NF than AG decreases by 0.135% and 1.126% respectively as household livestock endowment increases by one TLU. This result revealed that livestock endowment and livelihood diversification had negative relationship. This is because household will become satisfied with their agricultural activities and income derived from it.in general, number of livestock has big impact in leading household to engage in agricultural activities. This finding agree with the findings of Adugna (2007), Tesfaye (2003), Berhanu (2007) and Khan (2007) which stated that households with lower livestock endowment in TLU were forced to diversify their livelihood strategies apart and in addition to agricultural activities.

4.3.3. Order Logistic Model (Econometric Estimation for Household Wellbeing Status)

In the previous descriptive part, the relationship between different household characteristics with wellbeing status of the household was analyzed using descriptive statistics. In order to better understand determinant of wellbeing status, order logistic model was also employed. The table below shows order logistic estimation result which involves also the odd ratio, the standard error of variables and the level of significance in the model.

Table 24: Econometric estimated results of household Wellbeing status (Order Logistic Estimation Result)

Ordered logistic regression — Number of obs =203
LR chi2(11) =297.39
Prob> chi2 =0.000
Log likelihood =-59.639859 — Pseudo R2 =0.7137

wellbstatu	Coef.	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
land_size	2.363427	10.62731	1.118057	2.11	0.035**	0.1720765	4.554778
Marital dummy							
married	-2.277595	0.1025304	1.082551	-2.1	0.035**	-4.399356	-0.15584
HH Age	0.0269981	1.027366	0.0401998	0.67	0.502	-0.0517922	0.105788
HH Sex							
Male	-0.7565317	0.4692912	0.5936149	-1.27	0.203	-1.919996	0.406932
Formal educ. grade	0.2865276	1.331795	0.0826277	3.47	0.001***	0.1245802	0.448475
HH family size	-0.4067551	0.6658072	0.1633024	-2.49	0.013**	-0.726822	-0.08669
Year cont. stay	0.1321059	1.141229	0.0592651	2.23	0.026**	0.0159484	0.248264
livelihdiversification							
yes	6.035294	417.9217	0.9002428	6.7	0.000***	4.270851	7.799738
Credit receive							
yes	2.981988	19.72699	0.6732846	4.43	0.000***	1.662374	4.301601
finanasset4 (Income)	0.0007672	1.000768	0.0003308	2.32	0.02**	0.0001189	0.001416
HH economi. active							
yes	1.743303	5.716194	1.112282	1.57	0.117	-0.4367286	3.923335
/cut1	8.923785	8.923785	2.58625		3.854829	3.854829	13.99274
/cut2	17.02142	17.02142	3.098777		10.94793	10.94793	23.09491

*** p<0.01 (1%), ** p<0.05 (5%), * p<0.1 (10%)
Source: Own Computation (2018)

Like the above model discussed so far, all independent variable in this model together were significant and are important determinant of wellbeing status because prob>chi2 is less than 1%. Pseudo R also tells us the variation in the dependent variable can be explained by the variation in independent variables by 71.37%. Out of the total 11 explanatory variables that was hypothesized to have effect on the wellbeing status of the household, eight of them became significance at p<0.01, p<0.05 and p<0.1 level of significance. These are formal educational status, marital status, household family size, livelihood strategies, and year of continuous stay, credit access, financial asset and land size. Independent variables that were significant had positive or negative association with household wellbeing status.

Land Access and Wellbeing Status

As it was hypothesized, land access status of the household was among the determinant variable that have positive significance relation with the household wellbeing status at $p<0.1$ level of significance in the study area. The coefficient result indicates that if household land size was increase by one hectare, household order log-odd of being in a higher wellbeing category would increases by 2.363 while other factors remain constant. Similarly, for one hectare increases of household in the land size of the household, the odd ratio of being in a higher wellbeing category versus the combined lower wellbeing categories are 10.627 times greater, given that all of the other variable in the model are held constant. This finding was consistent with the finding of Patricia and Justin (2016) which stated that per capita land size and wellbeing being status of the household had positive and significant relation at p-value of 1%. They concluded that per capita land size of the household makes a significant contribution to the attainment of household wellbeing.

Educational Status and Household Wellbeing

As it was expected, education of the household was found to be positive and statistically significance that determine wellbeing status of the household at $p<0.05$ level of significance in the study area. According to the estimated regression result as indicated in the above table, if households were to increase years of school (education) by one point (year), the order log-odds of being in higher wellbeing status category would increases by 0.286, given other factors constant. On the other hand, for a one year increases in the education (school) of the household, the odd ratio of high category of wellbeing versus the combined lower categories of wellbeing are 1.3317 times greater, given that the other variable in the model constant.

Marital Status and Wellbeing

As it was hypothesized, marital status was found significant factor that affect the household wellbeing status in the study area negatively with p-value of 0.035 ($p<0.05$ level of significance) and odd ratio of 0.1025. This is because in the study area, even if marital status especially married enable household to access land, it increase the level of responsibility and burden with an increase number of family when they got married. The result indicated that as household heads becomes married marital status, his or her order log-odd of being in higher wellbeing

category would decreases by 2.277595, given other factors remain constant. In other word, as household head is being married marital status, the odd ratio of high wellbeing status (category) versus the combined lower wellbeing categories are 0.102 times less , given other variables in the model remained constant.

Livelihood Strategy and Wellbeing Status

A livelihood strategy is among the determinant of wellbeing status in the study. Livelihood strategies diversification by the household was also found to be positive and statistically significant factor at 1% that determines wellbeing status in the study area. According to the result as household diversified its livelihood strategies, their order log odd of being in high wellbeing category would increases by 6.035 greater. In other word, as household diversified its livelihood strategies, the odd ratio of high wellbeing category versus the combined lower wellbeing categories are 417.92 times greater, given that all the other variables in the model held constant. From this we can understand that diversification of livelihood strategies contribute significantly to the well-off category of wellbeing status and both diversification and wellbeing status had positive relationship. This finding was consistent with the finding by Patricia and Justin (2016) which stated that diversification of livelihood strategies can enhance household wellbeing positively and was significant at 1% level of significance.

Household Family Size and Well being

Having more family member is challenging to the overall wellbeing status of the household especially when the number of inactive members exceeds those of active members. The problem gets worse when the household depend on single livelihood strategy for survival and living. The regression result indicated that family size was found to have significant at 5% level of significance and negative association with wellbeing status of the household in the study area. Accordingly, the result of the regression indicated that as extra members of household added by a one number, household order log-odd of being in a higher wellbeing category would decreases by 0.1321. On the other hand, when extra one members of the household added, the odd ratios of high wellbeing category versus the combined lower wellbeing categories are 1.1412 times lesser assuming all other variables in the model constant. This finding agree with finding of Patricia and Justin (2016) household with more family size especially dependent was difficult to attain

wellbeing and number of dependent and wellbeing status were found negatively correlated and significant at p-value of 5%.

Years of Continuous Stay and Household Well being

As it was expected, year of continuous stay and wellbeing status had positive relationship in the study area. Year of continuous stay was found positive relation and significant at 5% level of significance. This means if the household head year of continuous stay increase by one unit (year), the household order log-odds of being in a higher wellbeing category would also increase. To make more specific, as years of continuous staying increases by one year, household order log-odds of being in a higher wellbeing category would increases by 0.1321 while the other variables in the model are held constant. Furthermore, for a one year continuous staying increases, the odd-ratio of high category of wellbeing versus the combined lower wellbeing categories are 1.141229 times greater, given other factors remain constant.

Credit Access and Household well being

Credit access has significant and positive association with household wellbeing. The result of the regression indicates that as household access to credit services increase by a unit (move from 0 to 1 or not access to yes), the household order log-odds of being in higher category of wellbeing would also increase by 2.9819 while other things remained constant. On the other hand, as household access to credit services increase by one unit (move from 0 to 1), the odd ratio of high category of wellbeing versus the combined lower wellbeing categories are 19.726 times greater, given other factors remain constant.

Household Income and Wellbeing Status

Aggregate income of the household derived from different source was found significant at 5% and positive relation with wellbeing status of the household. The result of regression indicates that as income or financial asset of the household was increases by a unit (ETB), household order log-odds of being in higher wellbeing category would increase by 0.0007 while the other variable in the model are held constant. In other words, for one unit increase in the aggregate monthly income of the household, the odd ratio of high wellbeing category versus the combined lower wellbeing categories are 1.00076 times greater while all other variables in the model remain constant.

CHAPTER FIVE

CONCLUSION AND RECCOMMENDATIONS

5.1. Conclusion

In country where the majority of the people lives in rural area and depends on agriculture, assessing their access to land is very important. This is because land which is the most important livelihood assets is very important to determine their livelihood strategies and as a result brought their livelihood outcome. Bringing household wellbeing is one indicator of better livelihood outcome. However, household wellbeing which is multidimensional cannot be easily achieved especially for rural people where their life is closely related to land and in which land is highly scarce. In many developing country,

Considering this in to account, this research was focused on the nexus between land access-livelihood strategies and household wellbeing with special focus on land scarce and densely populated area of wolayita zone, soddo zuria woreda. More specifically, the research tried to examine the effect of land on the household choice of livelihood strategies and its implication toward the overall livelihood outcome indicator of wellbeing. In order to answer its specific objective, the research employed mixed research method where both quantitative and qualitative data were collected. More specifically, sequential mixed research in which a quantitative study approach with a complementary qualitative approach was applied for this study. As a result, Multi stage stratified sampling technique was employed to select sample household. Therefore, a total of 203 sample household was employed to collect relevant primary data. Qualitative data was also collected through FGD, key informant interview and own filed observation and analyzed concurrently and thematically with quantitative data. Both descriptive and econometric analysis method were employed after relevant quantitative and qualitative data were collected using survey questionnaire, interview and field observation. Secondary data were also incorporated with the analysis of primary data.

Out of the total 203 household respondents 46, 105 and 52 household were found under well off, moderately well and not well category of wellbeing respectively categorized by adopting Alkire-Foster method of measuring multi-dimensional poverty. Different socio-economic and

demographic characteristics of the respondents were discussed and their relation with dependent variables was also determined using different correlation methods like chi-square.

Land as one livelihood asset in the study area was highly scarce which makes the average land size in the study area was 0.45 hectare. The main source of land for the household is inheritance from parents which accounts 77.3% for both male and female headed households. Land scarcity and high population growth in the study area makes the livelihood of the household very difficult and forced them search alternative source of income and livelihood outcomes. Sustainable livelihood framework evoked that pursuing diversified livelihood strategies based on the available livelihood asset help households to attain better livelihood outcome. Accordingly, there were different livelihood strategies in the study area followed by the household to meet their livelihood outcome. Among the strategies, agriculture takes the highest share followed by different off-farm and non-farm activities.

Result from ordinary least square regression model showed that five out of the ten explanatory variables were found significant and important determinant of land access (size) in the area. These are age of the household head, native, distance to nearby city, wellbeing status of the household and cooperative membership of the household. Therefore, different factors have an effect on the household land access and the size of land possessed by the household.

Out of the significant variable for land size, age, native, household wellbeing status and cooperative membership were found to have positive relationship and an increase in one unit of these explanatory variables leads to increase land access (size) by hectare. Distance to city also had positive relation with different interpretation. This means as the distance of rural resident to nearby city (town) increase by one km, the probability of getting land (accessing land) also increase by one hectare. This is because nearby city tends to decrease the size of land possessed by the household due to that fact that different urban expansion practices and construction of different institutions need land. Consequently, they took land from the household and perform different governmental and non-governmental activities. Therefore, nearness of household resident area to nearby city will have impact on their livelihood and land positively and negatively.

Result from multinomial model which was used to examine the effect of different household characteristic on the choice of livelihood strategies showed that several variables affect livelihood strategies choice of the household significantly and positively and negatively. Age of the household head, sex of the household head, land size, marital status and livestock endowment in TLU were among the independent variables which were significant and negatively influence livelihood strategies diversification as compare to the base outcome of agriculture. These variables were inverse relationship with livelihood strategies diversification. On the other hand, family sizes, income of the household and educational status of the household head were variables that were significant and positively affect following livelihood strategies apart from agriculture. This means as these variables increase by unit, the probability or multinomial log-odd of livelihood strategies away from agriculture also increases vice versa.

Sex of the household was found to have inverse relationship with household choice of off-farm livelihood activities as compare to the base outcome of agriculture. This means male household head had less probability of following off-farm livelihood activities as compared to female headed household in the study area. Therefore, in the study area off-farm livelihood activities that includes labor at other farm was mainly practiced by female household heads.

Age of the household was also among the significant explanatory variable which affect livelihood strategies choice especially diversification of livelihood strategies. According to the result, as age increase the probability of choosing off-farm, agriculture and off-farm livelihood activities decrease. Land size was also among variables which had negative relationship with livelihood diversification apart from agriculture. As land access (size) by the household increase their probability or multinomial log odd of following different diversified livelihood strategies was decrease. This indicated that land which is significant livelihood asset was very important for household to follow agriculture as their livelihood strategies. Most households who practice livelihood diversification in the area were those with small land size or no land at all. Marital status and livestock endowment were also negatively affecting livelihood strategies diversification choice. As household head was being married, his/her log of following off-farm activities as compare to on-farm also decreases. And as family livestock endowment increase by unit (TLU), the multinomial log of following livelihood strategies apart from agriculture decreases.

The result of order logistic model also revealed from the total explanatory variables livelihood diversification, education of the household head, credit access, income of the household, land access and year of continuous stay at the village were found to be significant that positively influence wellbeing status of the household. On the other hand, family size and marital status were among significant variables that negatively affect wellbeing status of the household in the study area. Livelihood diversification and land size as it was hypothesized enhance household wellbeing positively. Their increase by unit leads the odd of household to be well of to increase by some unit. Therefore, from this we can understand that in order for household to enhance their wellbeing status, they need to have significant land size and also to diversify their livelihood strategies in to different livelihood strategies so as to increase their income source and their livelihood.

5.2. Recommendations

Having good knowledge of determinant of wellbeing and livelihood strategies diversification is important for proper intervention and support of the rural poor household. Since land is fixed supply and population increase at an alarming rate, the imbalance between the two should be aware by policy make and other development agencies to forward different curative and preventive measures which help to reduce likelihood occurrence of poverty and food insecurity in the long run. Based on cross sectional survey result through using different regression method this study has investigated the effect of land access on livelihood strategies choice and its implication to household wellbeing. Thus, the finding reveals that land access and livelihood diversification were important determinant of household wellbeing that positively influence it in the study area Hence, the following recommendations were forwarded based on the whole findings of the study.

Recommendation with Regard to Land Access

In the study area, land is fixed asset with fixed supply which is very scarce as compared to the growing population size. The main source of land in the study area was inheritance, therefore, the government and other concerned bodies should consider other form (source) of land. As it was raised during FGD repeatedly, resettlement which should be voluntary and minimization of family size through providing different family planning programs and trainings are important to

balance the problem of land scarcity and population growth. Therefore, intervention is needed by the government and other group to balance the problem of land scarcity and high population growth through operating different voluntary settlement to areas with potential land and low population density as it was done before some years in the area. Different family planning programs and trainings as well as awareness creation about the adverse effect of unbalanced natural resource endowment and family member should be given by extension workers with special focus to the resource poor and newly engaged household head in the study area.

Cooperative membership was among determinant of land access in the study area which positively affects land size of the household. Therefore, since cooperative is one mechanism through which household can access common land for common benefit, its practices should be given prominent attention and equip with the needed materials and resources by the government and other concerned bodies.

The system of land tax and distribution in the study area was not fairly distributed according to the FGD participants during data collection. Both those who have large land size and small one pay taxes equally and even sometimes household with small land size pay more tax than those with large land size due to arbitrary deciding land taxes. On the other hand, land distribution and redistribution system taken place before left many household with small land size and benefited some with large land size. Accordingly, such system should need to reconsidering and revision by the concerned body with special focus to land scarce area such as wolayita.

Recommendation with regard to livelihood strategies

Pursuing appropriate and most benefited livelihood strategies require assessing the different livelihood assets on hand. In the study area, the dominant livelihood strategy was agriculture which is mainly rain fed agriculture. However, since there is high shortage of land in the area, such livelihood practice was not sufficiently enough to meet basic household requirements and bring with the desire livelihood outcomes. In addition to this, irrigation practices were almost absent with some exceptional. Therefore, in order to reduce relying on rain fed agriculture, different governmental and non-governmental development intervention should be give attention to irrigational practices from Gilgel Gibe River which is near to wolayita zone.

Diversification of livelihood strategies is the most important source of livelihood outcome and among the determinant of household wellbeing which affect it positively. Therefore, in order to face with the income gap and shock arise out of single livelihood strategies mainly agriculture, there is a need to diversify source of livelihood. Thus, there is a need for continuous training and information provision about the benefits and means of diversifying livelihood activities so as to enhance households' knowledge. Not only training and information but also different source of income and jobs should be that created involve and benefit household from it with a good example as safety net programs.

Special attention should also be given to female headed household during intervention and support. This is because women's tendency to diversify and hold natural resources as compare to their counterpart male headed household was poor in the study area. Education of the household head according to the multinomial estimation result was among the determinant of livelihood diversification which was found to have positive influence on the diversification of livelihood strategies of the household. This means household with better educational background had the probability of diversifying livelihood strategies than households with low educational status. Therefore, it is important to strengthen both formal and informal education as well as technical and vocational training in the study area. This will help households in the study area to have better knowledge of diversifying livelihood strategies and equip them with skill that enables them to get better paid jobs and incomes.

The finding of this study indicated also that income of the household had positive and significant relation with livelihood strategies diversification. Thus, efforts should be made so that households engage in different income generating activities so as to improve their income level and thereby enhance their livelihood diversification activities and reduce depending on single livelihood strategies at household level.

In general, with regard to rural development interventions by government and non-government development agencies, there is a need to focus not only on enhancing and enlarging agricultural activities as a livelihood strategy but also need special focuses on different off-farm and non-farm activities that help households to generate better income and better livelihood outcome in addition to their dominant livelihood strategy of agriculture. This will help household to cope with adversary and shock arise out of the failure of agricultural practices.

Recommendations with Regard to Household Wellbeing Status

As described above, the objective of every human being and government and non-governmental activities was to bring with better livelihood outcome. Household wellbeing is one indicator of better livelihood outcome and is not easily achieve. This is due to its broad and multi-dimensional nature. As of the finding of the study, there were different important determinant of household wellbeing in the study area. Land access (size) of the household was among the significant variable that positive affect household wellbeing. This is due to the fact that it is the most important livelihood asset rural people depend for their survival and living. Therefore, different source of land especially common land should be considered and distributed fairly to the rural poor household.

Result of this study indicated that there was a strong, positive and significant association between livelihood strategies diversification and household wellbeing. This suggests that diversification of livelihood strategies by the household should be supported by government and non-government development agencies through creating different off-farm and non-farm income generating activities. In addition to this, training and awareness creation should also be given to the household concerning the risk of depending on single livelihood strategies especially when the livelihood strategy is agriculture.

The finding of the study also indicated that education of the household head, credit access by the household and income derived from different source were found to be significant and had positive influence on the household wellbeing in the study area. The need for strengthening institutions engaged in providing credit service to the household should also be given priorities by the government. Creating different employment opportunities especially to the youth and young household head is also important as it diversify the income source of the household and reduce the level of migration which is very high in the area.

Family size of the household was found to have negative impact on the overall wellbeing of the household when the number of dependent exceeds those of active working force. Therefore, care should be given for such problem and trainings and different awareness creation activities should be done by extension workers, concerned organizations either governmental or non-governmental.

Recommendation for Further Studies

Although there are many studies carried out on livelihood strategies and its relationship with land, most of them have mainly targeted on determinant of livelihood strategies given land as one variable. However, the objective of every human and different government and non-governmental activities is to bring better livelihood outcome, there should be a need to combine the three pillars of livelihood asset (land), livelihood strategies and livelihood outcome. This will have positive contribution to the knowledge gap that was left unfilled. Since this research focuses on land-livelihood strategies-wellbeing nexus, further studies are needed by broadening livelihood assets, livelihood strategies and livelihood outcome concepts. Therefore, future researchers are recommended to use this finding as a base and make further investigation on related topic to test its reliability and fill its gap through investigating the effect of different livelihood assets on the choice of livelihood strategies and different livelihood outcomes.

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Appendixes

Appendix 1: Correlations Coefficient and VIF Tests for OLS Model

```
. corr land_size hhage  hhsex  native formaeducgrade dista_hhtocity tlu_hh credit_recieve wellbstatu hhfamilsize deperat  cooperativepart
> ic other caw
(obs=203)
```

	land_s~e	hhage	hhsex	native	formae~e	dista_~y	tlu_hh	credi~ve	wellbs~u	hhfami~e	deperat	cooper~c	other
land_size	1.0000												
hhage	0.6334	1.0000											
hhsex	0.1621	0.0620	1.0000										
native	0.2750	0.2815	0.2871	1.0000									
formaeducg~e	0.1796	-0.1267	-0.1148	-0.0059	1.0000								
dista_hhto~y	0.5567	0.3967	0.0672	0.1846	0.1322	1.0000							
tlu_hh	0.5975	0.3865	0.0802	0.1834	0.3660	0.4384	1.0000						
credit_rec~e	0.2441	0.1160	0.1258	0.0001	0.2651	0.1800	0.2958	1.0000					
wellbstatu	0.4816	0.2004	0.0305	0.0607	0.4959	0.3448	0.5205	0.5529	1.0000				
hhfamilsize	0.3535	0.5242	0.0987	0.2103	-0.2110	0.1523	0.1264	-0.0332	-0.1486	1.0000			
deperat	-0.2016	-0.2165	-0.0720	0.0299	-0.2470	-0.1529	-0.2793	-0.2512	-0.3394	0.0304	1.0000		
cooperativ~c	0.1465	-0.0319	0.1184	-0.1621	0.0352	-0.0770	0.0224	0.2177	0.0761	0.0135	-0.0081	1.0000	
other	0.7770	0.4804	0.1759	0.1697	0.1776	0.3354	0.4869	0.1954	0.3930	0.2866	-0.1452	0.1802	1.0000
caw	0.8205	0.5319	0.1691	0.1899	0.2921	0.4184	0.7604	0.2645	0.5066	0.2803	-0.2225	0.1398	0.9062

	caw
caw	1.0000

```
. vif
```

Variable	VIF	1/VIF
hhage	2.30	0.435339
1.hhsex	1.25	0.802754
1.native	1.31	0.763964
formaeducg~e	1.68	0.595346
dista_hhto~y	1.44	0.693461
tlu_hh	5.68	0.175950
1.credit_r~e	1.58	0.633907
wellbstatu		
2	1.99	0.502282
3	3.84	0.260300
hhfamilsize	1.64	0.609311
deperat	1.26	0.796743
1.cooperat~c	1.17	0.851231
other	12.64	0.079111
caw	24.46	0.040891
Mean VIF	4.45	

Appendix 2: OLS Regression Estimation Result

```
. regre land_size hhage i.hhsex i.native formaeducgrade dista_hhtocity tlu_hh i.credit_recieve i.wellbstatu hhfamilsize deperat i.coopera
> tivepartic other caw, robust

Linear regression                               Number of obs =     203
                                                F( 14,   188) =   16.26
                                                Prob > F      =  0.0000
                                                R-squared     =  0.7942
                                                Root MSE      =  .32092
```

land_size	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
hhage	.0155965	.004044	3.86	0.000	.0076191	.0235738
hhsex						
male	.0070149	.0514711	0.14	0.892	-.0945201	.10855
native						
yes	.1048272	.050444	2.08	0.039	.0053181	.2043363
formaeducgrade	-.0003398	.0070513	-0.05	0.962	-.0142495	.01357
dista_hhtocity	.0389563	.0113808	3.42	0.001	.0165058	.0614067
tlu_hh	-.0054855	.0357866	-0.15	0.878	-.0760805	.0651095
credit_recieve						
yes	-.0542345	.0440202	-1.23	0.219	-.1410716	.0326025
wellbstatu						
moderately well	.139137	.0526212	2.64	0.009	.0353332	.2429409
well off	.2920954	.0928812	3.14	0.002	.1088721	.4753186
hhfamilsize	.0236988	.0164814	1.44	0.152	-.0088133	.056211
deperat	.0241675	.0572415	0.42	0.673	-.0887506	.1370856
cooperativepartic						
yes	.1666029	.0776522	2.15	0.033	.0134214	.3197845
other	1.69e-08	1.97e-08	0.86	0.393	-2.20e-08	5.57e-08
caw	.0000223	.0000236	0.94	0.347	-.0000243	.0000688
_cons	-1.050221	.2211628	-4.75	0.000	-1.486501	-.6139417

Appendix 3 OLS Model (Goodness-of-Fit Test), linktest, hettest and ovtetst

```
. ovtest

Ramsey RESET test using powers of the fitted values of land_size
       Ho:  model has no omitted variables
                 F(3, 185) =     35.01
                  Prob > F =      0.0000
```

```
. linktest
```

Source	SS	df	MS	Number of obs =	203
				F(2, 200) =	387.39
Model	74.7789697	2	37.3894849	Prob > F =	0.0000
Residual	19.3031701	200	.096515851	R-squared =	0.7948
				Adj R-squared =	0.7928
Total	94.0821399	202	.465753168	Root MSE =	.31067

land_size	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	.9359367	.0894641	10.46	0.000	.7595227	1.112351
_hatsq	.0260749	.033346	0.78	0.435	-.0396799	.0918298
_cons	.0134155	.0318808	0.42	0.674	-.0494501	.076281

Appendix4: Multinomial Regression Result

```
. mlogit livelihoodstrate land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldum
> my

Iteration 0:   log likelihood = -350.60564
Iteration 1:   log likelihood = -119.13843
Iteration 2:   log likelihood = -86.700045
Iteration 3:   log likelihood = -63.911987
Iteration 4:   log likelihood = -58.196995
Iteration 5:   log likelihood = -56.301032
Iteration 6:   log likelihood = -55.929184
Iteration 7:   log likelihood = -55.888487
Iteration 8:   log likelihood = -55.878948
Iteration 9:   log likelihood = -55.876864
Iteration 10:  log likelihood = -55.876429
Iteration 11:  log likelihood = -55.876328
Iteration 12:  log likelihood = -55.876303
Iteration 13:  log likelihood = -55.876298

Multinomial logistic regression                 Number of obs     =        203
                                                LR chi2(50)       =     589.46
                                                Prob > chi2       =     0.0000
Log likelihood = -55.876298                     Pseudo R2         =     0.8406
```

livelihoodstrate	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
ag	(base outcome)					
off_farm						
land_size	-5.257852	2.792295	-1.88	0.060	-10.73065	.2149466
hhsex	-13.323	6.258238	-2.13	0.033	-25.58892	-1.057077
hhage	-.3585239	.2125526	-1.69	0.092	-.7751194	.0580715
formaeducgrade	.57076	.817769	0.70	0.485	-1.032038	2.173558
hhfamilsize	.9398285	.8481833	1.11	0.268	-.7225802	2.602237
credit_recieve	.1604406	2.392274	0.07	0.947	-4.52833	4.849211
income_hh	.0028031	.001794	1.56	0.118	-.0007131	.0063192
tlu_hh	-.8448815	.5100638	-1.66	0.098	-1.844588	.1548251
freqextentioncontac	-.1552688	1.235454	-0.13	0.900	-2.576715	2.266177
maritaldummy	-7.351913	3.356989	-2.19	0.029	-13.93149	-.7723354
_cons	30.5503	16.50433	1.85	0.064	-1.797601	62.8982
non_farm						
land_size	-21.65743	9048.75	-0.00	0.998	-17756.88	17713.57
hhsex	11.8561	8855.138	0.00	0.999	-17343.9	17367.61
hhage	.8184634	344.9034	0.00	0.998	-675.1797	676.8166
formaeducgrade	7.785872	1281.701	0.01	0.995	-2504.301	2519.873
hhfamilsize	-.8972352	1172.859	-0.00	0.999	-2299.659	2297.864
credit_recieve	3.697393	4828.703	0.00	0.999	-9460.387	9467.782
income_hh	.0020045	3.75496	0.00	1.000	-7.357582	7.361591
tlu_hh	.0337234	1143.564	0.00	1.000	-2241.311	2241.378
freqextentioncontac	-1.202586	2184.557	-0.00	1.000	-4282.856	4280.451
maritaldummy	5.988304	5672.325	0.00	0.999	-11111.56	11123.54
_cons	-96.26876	25369.49	-0.00	0.997	-49819.55	49627.01
ag_and_off_farm						
land_size	-7.745185	2.883826	-2.69	0.007	-13.39738	-2.092991
hhsex	-12.89193	6.423625	-2.01	0.045	-25.482	-.3018562
hhage	-.8202843	.2247345	-3.65	0.000	-1.260756	-.3798127
formaeducgrade	2.101542	.8812551	2.38	0.017	.3743138	3.82877
hhfamilsize	1.516132	.8471132	1.79	0.073	-.1441795	3.176443
credit_recieve	-.9398957	2.262683	-0.42	0.678	-5.374674	3.494882
income_hh	.0028427	.0017402	1.63	0.102	-.0005681	.0062535
tlu_hh	-.7993834	.5663754	-1.41	0.158	-1.909459	.310692
freqextentioncontac	-.7768734	1.192197	-0.65	0.515	-3.113538	1.559791
maritaldummy	-1.816786	3.302902	-0.55	0.582	-8.290355	4.656784
_cons	40.28255	16.27987	2.47	0.013	8.37459	72.19051
ag_and_non_farm						
land_size	-5.345056	2.481181	-2.15	0.031	-10.20808	-.4820305
hhsex	-7.978653	6.183613	-1.29	0.197	-20.09831	4.141006
hhage	-.3905359	.1839124	-2.12	0.034	-.7509976	-.0300741
formaeducgrade	1.646821	.7460807	2.21	0.027	.1845296	3.109112
hhfamilsize	1.303429	.807707	1.61	0.107	-.2796479	2.886505
credit_recieve	-.6627902	1.937067	-0.34	0.732	-4.459372	3.133791
income_hh	.0030998	.0016873	1.84	0.066	-.0002073	.0064069
tlu_hh	-.8850432	.5144591	-1.72	0.085	-1.893364	.123278
freqextentioncontac	-.4779184	1.123743	-0.43	0.671	-2.680413	1.724577
maritaldummy	-3.181588	2.849799	-1.12	0.264	-8.76709	2.403915
_cons	23.62572	14.46993	1.63	0.103	-4.73482	51.98626
ag__off_farm_and_non_farm						
land_size	-4.323335	2.509119	-1.72	0.085	-9.241118	.5944481
hhsex	-5.649245	6.301831	-0.90	0.370	-18.00061	6.702116
hhage	-.5598687	.2038206	-2.75	0.006	-.9593496	-.1603877
formaeducgrade	1.423085	.7872778	1.81	0.071	-.119951	2.966121
hhfamilsize	2.367972	.8464292	2.80	0.005	.7090015	4.026943
credit_recieve	-1.451823	2.041507	-0.71	0.477	-5.453103	2.549457
income_hh	.0025814	.0017187	1.50	0.133	-.0007871	.0059499
tlu_hh	-.7879357	.5478517	-1.44	0.150	-1.861705	.285834
freqextentioncontac	-.2208162	1.15988	-0.19	0.849	-2.494139	2.052507
maritaldummy	-.3070059	2.988176	-0.10	0.918	-6.163723	5.549711
_cons	17.46826	14.85481	1.18	0.240	-11.64664	46.58316

```
.
```

Appendix 5: Marginal Effect Estimate for Multinomial Model

```
. margins, dydx (*) predict (outcome(off_farm))

Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(livelihoodstrate==off_farm), predict(outcome(off_farm))
dy/dx w.r.t. : land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
```

	Delta-method dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	-.0001487	.0478168	-0.00	0.998	-.0938679	.0935704
hhsex	-.0816705	.1061743	-0.77	0.442	-.2897684	.1264274
hhage	.0014696	.0092038	0.16	0.873	-.0165695	.0195086
formaeducgrade	-.0153966	.0163175	-0.94	0.345	-.0473783	.0165851
hhfamilsize	-.0047756	.0169386	-0.28	0.778	-.0379747	.0284234
credit_recieve	.0131876	.0338066	0.39	0.696	-.0530721	.0794473
income_hh	2.25e-06	.0000264	0.09	0.932	-.0000495	.000054
tlu_hh	-.0013527	.0083047	-0.16	0.871	-.0176295	.0149242
freqextentioncontac	.0051172	.0138031	0.37	0.711	-.0219364	.0321707
maritaldummy	-.0778836	.0332366	-2.34	0.019	-.1430262	-.0127411

```
.
. margins, dydx (*) predict (outcome(ag_and_off_farm))

Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(livelihoodstrate==ag_and_off_farm), predict(outcome(ag_and_off_farm))
dy/dx w.r.t. : land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
```

	Delta-method dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	-.0584969	.0318307	-1.84	0.066	-.1208839	.0038901
hhsex	-.1005608	.0328326	-3.06	0.002	-.1649116	-.0362101
hhage	-.0090582	.002502	-3.62	0.000	-.013962	-.0041544
formaeducgrade	.0150865	.0096305	1.57	0.117	-.0037889	.0339619
hhfamilsize	.0016545	.0052952	0.31	0.755	-.008724	.012033
credit_recieve	-.0059339	.0276822	-0.21	0.830	-.0601901	.0483223
income_hh	-2.50e-06	.0000101	-0.25	0.805	-.0000223	.0000173
tlu_hh	.001364	.0058969	0.23	0.817	-.0101938	.0129217
freqextentioncontac	-.0089707	.0093724	-0.96	0.338	-.0273403	.0093989
maritaldummy	.0338312	.034134	0.99	0.322	-.0330702	.1007326

```
.
. margins, dydx (*) predict (outcome(ag_and_non_farm))

Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(livelihoodstrate==ag_and_non_farm), predict(outcome(ag_and_non_farm))
dy/dx w.r.t. : land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
```

	Delta-method dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	-.0384996	.0824054	-0.47	0.640	-.2000113	.1230122
hhsex	-.0134038	.1252367	-0.11	0.915	-.2588633	.2320557
hhage	.0089062	.0072265	1.23	0.218	-.0052576	.0230699
formaeducgrade	.0229394	.0189948	1.21	0.227	-.0142897	.0601685
hhfamilsize	-.0263859	.0180234	-1.46	0.143	-.0617111	.0089394
credit_recieve	.0181592	.0600169	0.30	0.762	-.0994717	.1357901
income_hh	.0000463	.0000406	1.14	0.254	-.0000332	.0001258
tlu_hh	-.0112579	.0150902	-0.75	0.456	-.0408341	.0183183
freqextentioncontac	-.0108415	.0242468	-0.45	0.655	-.0583645	.0366814
maritaldummy	-.1003587	.0826833	-1.21	0.225	-.2624149	.0616976

Continued

```
. margins, dydx (*) predict (outcome(ag__off_farm_and_non_farm  ))

Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(livelihoodstrate==ag__off_farm_and_non_farm), predict(outcome(ag__off_farm_and_non_farm ))
dy/dx w.r.t. : land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
```

	Delta-method					
	dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	.0413749	.0299051	1.38	0.166	-.017238	.0999878
hhsex	.1034094	.055041	1.88	0.060	-.004469	.2112878
hhage	-.0058412	.0044293	-1.32	0.187	-.0145225	.0028401
formaeducgrade	-.0071936	.0123585	-0.58	0.561	-.0314158	.0170286
hhfamilsize	.0450569	.0083404	5.40	0.000	.02871	.0614037
credit_recieve	-.0326738	.0359429	-0.91	0.363	-.1031207	.0377731
income_hh	-.0000139	.0000165	-0.84	0.399	-.0000462	.0000184
tlu_hh	.0018789	.0086991	0.22	0.829	-.015171	.0189288
freqextentioncontac	.010585	.0122968	0.86	0.389	-.0135162	.0346862
maritaldummy	.1076332	.0485913	2.22	0.027	.0123959	.2028705

```
Average marginal effects                        Number of obs   =        203
Model VCE    : OIM

Expression   : Pr(livelihoodstrate==non_farm), predict(outcome(non_farm))
dy/dx w.r.t. : land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
```

	Delta-method					
	dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	.0000386	.0115813	0.00	0.997	-.0226603	.0227374
hhsex	.0000918	.0205977	0.00	0.996	-.0402789	.0404626
hhage	5.31e-06	.0011496	0.00	0.996	-.0022478	.0022584
formaeducgrade	-.0000104	.0030664	-0.00	0.997	-.0060205	.0059997
hhfamilsize	-.0000135	.0030122	-0.00	0.996	-.0059172	.0058902
credit_recieve	9.71e-06	.0040953	0.00	0.998	-.0080169	.0080364
income_hh	-2.55e-08	6.26e-06	-0.00	0.997	-.0000123	.0000122
tlu_hh	7.70e-06	.0018182	0.00	0.997	-.0035559	.0035713
freqextentioncontac	4.10e-06	.0018803	0.00	0.998	-.0036813	.0036895
maritaldummy	.0000277	.0068448	0.00	0.997	-.0133879	.0134433

Appendix 6: Correlation Coefficient for Multinomial Model

```
. corr livelihoodstrate land_size hhsex hhage formaeducgrade hhfamilsize credit_recieve income_hh tlu_hh freqextentioncontac maritaldummy
(obs=203)
```

	liveli~e	land_s~e	hhsex	hhage	formae~e	hhfami~e	credi~ve	income~h	tlu_hh	freqex~c	marita~y
livelihood~e	1.0000										
land_size	-0.5083	1.0000									
hhsex	0.1040	0.3866	1.0000								
hhage	-0.5870	0.7044	0.3525	1.0000							
formaeducg~e	0.4850	-0.5319	0.0594	-0.4811	1.0000						
hhfamilsize	0.5429	-0.2286	0.0406	-0.2386	0.1716	1.0000					
credit_rec~e	0.0279	-0.0964	0.0722	-0.0255	0.0793	-0.0541	1.0000				
income_hh	0.1707	-0.1125	-0.0324	-0.0814	0.0339	0.3016	0.2595	1.0000			
tlu_hh	-0.3780	0.3314	0.0906	0.3454	-0.2537	-0.1578	0.2083	0.3249	1.0000		
freqextent~c	-0.0648	0.0306	-0.0035	0.0927	-0.1270	0.0009	-0.0976	-0.1005	-0.1357	1.0000	
maritaldummy	0.1945	0.1132	0.2340	0.0637	0.1756	0.0007	0.1129	0.0461	-0.0004	-0.0490	1.0000

Appendix 7: Order logistic Model Regression result

```
. ologit wellbstatu land_size   i.maritaldummy hhage i.hhsex formaeducgrade hhfamilsize yearcontstay i.livelihdiversif i.credit_recieve f
> inanasset4 i.hhecoactive

Iteration 0:   log likelihood =  -208.3328
Iteration 1:   log likelihood = -78.750386
Iteration 2:   log likelihood = -61.543239
Iteration 3:   log likelihood = -59.653936
Iteration 4:   log likelihood = -59.639864
Iteration 5:   log likelihood = -59.639859

Ordered logistic regression                     Number of obs   =        203
                                                LR chi2(11)     =     297.39
                                                Prob > chi2     =     0.0000
Log likelihood = -59.639859                     Pseudo R2       =     0.7137
```

wellbstatu	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
land_size	2.363427	1.118057	2.11	0.035	.1720765	4.554778
maritaldummy						
married	-2.277595	1.082551	-2.10	0.035	-4.399356	-.1558353
hhage	.0269981	.0401998	0.67	0.502	-.0517922	.1057883
hhsex						
male	-.7565317	.5936149	-1.27	0.203	-1.919996	.4069322
formaeducgrade	.2865276	.0826277	3.47	0.001	.1245802	.448475
hhfamilsize	-.4067551	.1633024	-2.49	0.013	-.726822	-.0866882
yearcontstay	.1321059	.0592651	2.23	0.026	.0159484	.2482635
livelihdiversif						
yes	6.035294	.9002428	6.70	0.000	4.270851	7.799738
credit_recieve						
yes	2.981988	.6732846	4.43	0.000	1.662374	4.301601
finanasset4	.0007672	.0003308	2.32	0.020	.0001189	.0014155
hhecoactive						
yes	1.743303	1.112282	1.57	0.117	-.4367286	3.923335
/cut1	8.923785	2.58625			3.854829	13.99274
/cut2	17.02142	3.098777			10.94793	23.09491

.

Appendix 8: Correlation Coefficient for Order Model

```
. corr wellbstatu land_size     maritaldummy hhage  hhsex formaeducgrade hhfamilsize yearcontstay livelihdiversif  credit_recieve finanas
> set4  hhecoactive
(obs=203)
```

	wellbs~u	land_s~e	marita~y	hhage	hhsex	formae~e	hhfami~e	yearco~y	liveli~f	credi~ve	finana~4	hhecoa~e
wellbstatu	1.0000											
land_size	0.4816	1.0000										
maritaldummy	-0.0141	0.1909	1.0000									
hhage	0.2004	0.6334	0.2967	1.0000								
hhsex	0.0305	0.1621	0.0843	0.0620	1.0000							
formaeducg~e	0.4959	0.1796	-0.0844	-0.1267	-0.1148	1.0000						
hhfamilsize	-0.1486	0.3535	0.1924	0.5242	0.0987	-0.2110	1.0000					
yearcontstay	0.4080	0.7643	0.5126	0.6035	0.3030	0.0789	0.3369	1.0000				
livelihdiv~f	0.7041	0.1326	-0.0561	-0.0135	-0.0348	0.3218	-0.2827	0.0747	1.0000			
credit_rec~e	0.5529	0.2441	-0.0710	0.1160	0.1258	0.2651	-0.0332	0.2095	0.3436	1.0000		
finanasset4	0.4634	0.7891	0.1088	0.4777	0.1734	0.2200	0.3082	0.5893	0.1622	0.2595	1.0000	
hhecoactive	0.2648	-0.1017	-0.1239	-0.2409	-0.0080	0.2550	-0.2707	-0.0960	0.3053	0.1294	-0.0475	1.0000

Appendix 9: Conversion Factor for Tropical Livestock Unit (TLU)

Animal Category	Tropical Livestock Unit (TLU)
Ox	0.7
Cow	0.7
Heifer	0.5
Bull	0.6
Calves	0.2
Sheep	0.01
Goat	0.01
Donkey	0.5
Horse	0.8
Camel	1
Chicken	0.01

Source: Behnke and Osman (2012).

Appendix 10: Formula for Real Dependency Ratio

$$\textbf{Real Dependency Ratio} = \frac{\text{Number of Economically inactive workers}}{\text{Number of Economically active workers}} \times 100$$

Appendix 11

Questionnaires Designed for Household Heads

Good Morning/Afternoon my name is Tkue Hayate. Currently I am conducting my MA degree in Addis Ababa college of Development studies center for Regional and Local Development Studies. As a partial fulfillment for my MA program, I am conducting a thesis Entitles the effect of land access on livelihood strategies choice and its implication toward household welling in wolayita zone with special focus in Soddo Zuria Woreda. Therefore, this questionnaire will be designed to collect data in requirement for partial fulfillment of the thesis paper' 'in Regional and Local Development Studies at Addis Ababa University. I would like to emphasis that your response is extremely significant for uninterrupted achievement of this paper and I would like to appreciate your genuine response for all of the questions. I would also like to assure that the information you will provide is confidential and will only be used for an academic purpose. I heart fully like to thank for your willingness and cooperation to provide information by sacrificing your invaluable time without which the objective of the study would not be achieved.

General instruction

1. No need of writing your name
2. Please tick (√) mark in the appropriate answer box for close ended question and write your ideas or opinion on the space provided for open ended question.
3. For the questions in which your answer is more than one alternative you can thick an additional (√) mark
4. If you need extra information or explanation you can contactme through cell phone 0985473816

Sector one: Socio-demographic characteristics

1.1. Household Code: _____ (1=Gurmukoyis,2=Mentgerera,3=Kutosarfia, 4= shola kodo)

1.2. Name of kebele:_____

1.3. Date and time of interview respectively:_____

1.4. Gender of household head: A .male ☐ B. female ☐

1.5. Age of Household head: - _____

1.6. A. Education level of household head (Formal):

A. Illiterate ☐ B. Read and write ☐ G. grade 1- 5 ☐

C. Grade 6-10 ☐ D. Grade 10-12 ☐ F. First Degree and above ☐

B. Have you attended Informal Educational level (religious Education)? Yes ☐ No ☐

If household attend formal education Please write the exact formal educational levelhere_____

1.7. Marital status of the Household head

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

1.8. Are you native in this area? Yes ☐ No. ☐

1.9. If your answer for question no 1.8 is No, where did you came from? _____

1.10.What are the reasons for coming to this area?

A. By marriage ☐ B. Join relative ☐ C. Displacement by drought ☐

D. To get access to land E. Divorce ☐ F. War/conflict in previous area ☐

G. Other ☐

1.11. If your answer is other please Specify _____

_____

1.12. Year of continuous stay at current place of residence (year)_____

1.13. Household family size/ Number of permanent household members at the time of survey:

Total=_____ (Male=_____Female=_____)

1.14. Number of children who are<15 and above 65 yrs_____

1.15. Is household head is economically active/ capable to work/healthy at current time?

Yes ☐ No. ☐

1.16. If your answer is No, Who is responsible to take the responsibility of the household head?

A. Relative

B. Elder Brother/sister

C. Other, Please Specify_____.

Summary on characteristics of other permanent members of household

No.	Name	Relations with household head	Sex	Age	Marital status	Two main occupation		Educational Status (those over 7 years	Economically active
						first	second		
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
			1. male 2.female		1. single 2. married 3. divorced 4.widowed	1. farmer 2. herder 3. housewife 4. daily laborer 5. weaving 6. pottery 7. student 8. carpenter 9. trader 10.selling firewood 11.grow vegetables and fruit 12. hairdresser 13. other 14. unemployed	1. farmer 2. herder 3. housewife 4. daily laborer 5. weaving 6. pottery 7. student 8. carpenter 9. trader 10.selling firewood 11.grow vegetables and fruit 12. hairdresser 13. other 14.unemployed	1. illiterate 2. read and write 3. primary education 4. secondary education 5. special training	1. yes 2. no

Section Two: Questions Related to Land Access

2.1. Do you have land? **A**. Yes ☐ B. No ☐

2.2. If yes what is the source of your land? Or how did you get access to it? (Multiple responses are possible):

A. Through land redistribution in previous ☐ B. Shared with relatives ☐

C. Inherited from parents ☐ D. Sharecropped in ☐

E. Purchased ☐ F. Rented from others ☐

G. Others (specify) _____

2.3. Household Land Size (hectare) or other local unit_____

A. Cultivated land_____(Hectare or other local unit)

B. Fallow land_____(Hectare or other local unit)

C. Grazing land_____(Hectare or other local unit)

D. Forest land_____(Hectare or other local unit)

E. Settlement land_____(Hectare or other local unit)

F. Others_____(Hectare or other local unit)

2.4. Do you have communal grazing land in the kebele? A. Yes ☐ B. No ☐

2.5. What has happened to the size of your landholding over the last ten years?

A. Increased ☐ B. Decreased ☐ C. No change ☐

2.6. What was/were the reason(s) for increase or decrease? _____

_____

2.7. How many parcels of land do you use for farming from the total? _____

2.8. What is the walking distance (in hours or minutes) between your homestead and your farm plot? _____

2.9. Have you sharecropped out your plot to other peasants on "*ye-ekul"* basis?

1. Yes ☐ 2. No ☐

2.10. If yes, why did you sharecrop out? (Multiple responses are possible):

A. Because the household head is Female ☐ B Lack of seeds ☐ C. Illness ☐

D. Elderly and unable to operate it ☐ E. Unable to purchase technological inputs ☐

F. Having extra land ☐ G. Lack of Oxen ☐

G. Others, specify _____

_____

2.11. Who do not own land in this household?

A) Children below 18 years of age ☐ B) Disabled ☐ C) Women ☐ D) Girls ☐ E) Men ☐

f) Boys ☐

2.12. What type of land right do you have?

a) Customary certificate of occupancy ☐ b) Legislative certificate of occupancy ☐

c) None ☐ d) others, specify _____

2.13. Is the land you own sufficient to meet all the family food and other needs?

a) Yes ☐ b) No ☐

2.14. If the answer in number 13 above is No, how do you manage to meet other needs?

A) Sale of labor ☐ B) Receive remittances ☐

C) Petty business ☐ D) Reduce consumption and expenditure ☐

E) Migration to other area ☐ F) others, specify_____

_____

2.15. What limitations do you face resulting from insufficient arable land supply?

a) Cultivating for self and landlords ☐ b) Failure to access credit ☐

c) Cannot cultivate perennial crops ☐ D. Others, specify_____

_____

2.16. If you do not have land, what are your livelihood strategy/ activity?

A. Government Employee ☐ D. Migrating to the city to get job and income ☐

B. Share cropping from other land owner ☐ E. Non-farm Activities ☐.

C. Getting employed at other farm ☐ F. Other, Please specify_____

_____

2.17. What is your general view concerning land access in your area?

_____

Section Three- Related to Livelihood Strategies

3.1. What kind of farm activities is the household involved in? Please tick if you involve

A. Crop production ☐ C. Mixed (crop and Livestock) ☐

B. Livestock rearing and breeding ☐ D. Other (specify)_____

3.2. Do any of your household members work in activities apart from Farm activities/Agriculture?

A. Yes ☐ B. No ☐

3.3. If yes, would you tell us about the types of activities, persons engaged in, amount of income from the job, and the purpose for which you use and the money using the following table?

Activity type	Member participated	Time spent on work per month	Estimated annual income from the job		Cash equivalent	Earning used for		
			Cash	In kind				
						First	Second	
1. shakal 2.government employee 3. FFW (Food for Work scheme) 4. military 5. guard 6.selling grass 7. selling crop residue 8. selling dung (kubat)↓	1. head 2. spouse 3. child one 3. child two 4. hired worker or laborer	Days/ hours	birr	Mention the item	birr	1. buy food 2. saving 3. build a house 4. purchase farm tools 5. buy clothes 6. purchase modern farm inputs 7. pay loan 8. petty trading 9. pay tax 10 others, specify_____		
9. Selling firewood 10. Selling charcoal 11. Trading grains 12. Trading livestock 13. fatting stock 14. Butter trading 15. Trading chickens 16. Renting camels 17. Timber production 18. lumber trading 19. Chat trading 20. Petty trading 21. Papaya trading 22. Hired as herder 23. Hired as a farmer 24. Tailoring 25. Carpenter 26. Spinning 27. Weaving 28. Blacksmithing 29. Pottery 30. Herbalist 31. Traditional physiotherapist 32. Renting ox 33. Leasing out land 34. Selling food 35. tea trading 36. Leading rituals 37. Sugarcane trading 38. Begging 39. Honey trading 40. thatching grass roofs								

3.4. What problems do you encounter in diversifying livelihood activities?

I_____

II_____

III_____

IV_____

3.5. If none of your members work in non-farm activities, what are the reasons for them not taking the opportunity?

No	Reason for not working	1. Yes 2. No
1	Lack of spare time from agriculture	
2	Lack of awareness about its contribution value	
3	Lack of work skills	
4	Lack of job possibilities	
5	Unable to work due to old age	
6	Health problems	
7	Lack of start-up capital	
8	Others, specify	

3.6. Do any members of your household migrate to other area in search of employment?

A. Yes ☐ B. No ☐

3.7. If Yes, How many times did you or any member of your household migrant for employment in 2009/10?_____

3.8. In general what is your main source of income for the household?

A. Agriculture ☐ B. Trade ☐ C. Daily wage ☐

D. Monthly Salary 1. Government ☐ 2.Private employed ☐

E. If others, please_____

3.9.Assessing Portfolio of Assets

A. Human capital in the household

S/N		QUANTITY
1	Number of years in school of the most educated household member	
2	Whether any adult member has labor skills (1=yes,0=No	
3	Whether any household member has disability, (1=yes,0=No)	
4	Size of labor force (Number of working people) Financial	

B. Financial Assets

S/N		**Tick if√ yes and x if No**
1	Whether household members operate a bank account	
2	Whether a household member is accessing credit/loan	
3	Have certificate of land occupancy	

Income per Month (In Birr)

S/N		QUANTITY
1	<10000	
2	10000-20000	
3	20000-30000	
4	30000-40000	
5	>40000	

C. 1. Social Capital (Type of social network and cooperative a household member involved in)

S/N	Type (Credit groups Welfare group School committees Religious association If Others Specify,)	Formal	Informal
Involved		Yes No	Yes No
Not involved			
Do they/does It strengthens your LS			
Are you satisfied with its/their services?			
What social networks are lacking?			

C. 2. Membership to cooperatives

1. Do you or member of your family participated in any formal cooperatives?1= Yes;2=No
2. If yes, would you mention the name of the cooperatives? _____
   _____
   _____
3. What benefits did you gain by being membership of such cooperatives?1) Income increased 2) labour Shared 3) credit used 4) others specify_____
4. If no, what is the probable reason 1) No information 2) No interest3) No cooperatives in my PA 4) other specify_____

D. EMPOWERMENT

1. Do women including wife have made decision and play role in marketing the product and other income generating activities to the household?

   A. Yes ☐ B. No ☐

2. If your Answer for Q. No.1 is yes, in what ways_____
   _____

3. Do you believe that education have equal importance for male and female?
   A. Yes ☐ B. No ☐

4. Please justify your response if your answer for Q. No. 3 is No._____
   _____

5. School for girl or marriage? Please tick 1 if your answer is school to girls and 0 if marriage to girls
   1. ☐ 0. ☐

E. Land capital

1. Please indicate the amount of land (in hectares) that you currently own and have rented in/out

Category	**2. Area**	**2. Ownership** *(code-tenure)*	**Main products grown/harvested in the past 12 months Max 3 (code-product)**		
			Rank1	Rank2	Rank3
Forest:					
1. Natural forest					
2. Managed forests					
3. Plantations					
Agricultural land:					
4. Cropland					
5. Pasture (natural or planted)					
6. Agroforestry					
7. Silvipasture					
8. Fallow					
9. Other vegetation types/land uses (residential, bush, grassland, wetland, etc.)					
10. Total land owned (1+2+3+…+9)					
11. Land rented out (included in 1-9)					
12. Land rented in (not included in 1-9					

2. Who owns land in this household?

A) Father only ☐ B) Father and mother ☐

C) Each adult aged above 18 years old ☐ D) Each male adult aged 18 years old ☐

3. Is all the land you own on one plot?

A) Yes ☐ B) No ☐

4. If the answer in question 3 above is No; how many plots do you own? _____

_____

5. Are any members of the household migrate to other area to get employment and job?

A. Yes ☐ B. No ☐

6. Has the importance of migration and remittances from migrant for the household1) Increased 2) Decreased 3) stayed the same over time

7. In general do you believe that migration is better alternative to escape from foodshortage?1=Yes, 0=No

8. If yes, justify your reason _____

_____

9. Has your household been receiving remittances? 1. Yes ☐ 2. No ☐

10. If you have received remittances, would you tell us about the source, the relationship you have with the person/organization who remitted you, the average amount in cash or kind per annum, and the purpose for which you use(d) the remittance in the following table

Source	Who remitted?	**Amount per annum**		**Use of the remittance**		
		Cash	In kind			
				First	Second	Third
1. in the same *wereda* from other kebele 2. from another *Wereda* in the same zone 3. from other zone 4. from abroad (specify country)	1. father 2. mother 3. brother 4. sister 5. child 6. grandchild 7. non-relative 8. organization (specify)	Birr	Mention	1. for building a house 2. for purchasing ox 3. for buying food 4. for buying clothes 5. for purchasing farm implements 6. for purchasing inputs 7. for petty trading 8. others, specify		

11. Would you tell us the number of livestock you possess?

No.	Type	Number	Equivalence in cash (in birr)
1	Cows		
2	Oxen		
3	Bulls		
4	Heifers		
5	Calves		
6	Sheep		
7	Goats		
8	Mules		
9	Horses		
10	Donkeys		
11	Chicken		
12	Camels		
13	Bee hives		

12. 12. Did you use any agricultural technologies for example fertilizer, high yield variety, chemicals, etc for the last 12 months? 1=Yes, 2=No

13. If yes, give details

Name of agricultural technologies	Quantity used	Unit price	Total price	Sources

14. Agricultural Extension Services

14.1. Is there development agent in your PAs? ____ 1= Yes; 2 =No

14.2. If yes, how many contacts did you had in the year?

1) Every day 2) Every week 3) Twice in a month

4) every month5) Sometimes 6) Other (specify)_____

14.3. What were the purpose of this visits ___ (Multiple answer is possible).

1) To give advice on crop production 2) To give advice on animal production

3) To give advice on soil conservation 4) to collect taxes

5) to collect other debts6) other (specify) _____

14.4. Did you get any training from extension organization Yes=1; 2 =No

14.5. If yes, specify the kind of training_____

15. Access to Credit and credit use

15.1. Have you received any type of credit in 2009/10? 1= Yes; 0=No

15.2. If yes fill the following table

Source borrowed	Purpose borrowed	Amount borrowed	Interest amount paid	Amount Paid/returned Birr
1) Service cooperative 2) Commercial banks 3) Development banks 4) Friends and relatives 5) Micro finance institutes 6) Local moneylenders 7) NGOs 8) Others_____ _____	1. Purchase of oxen 2. Purchase of seeds 3. Purchase of fertilizer 4. Purchase of chemicals 5. Purchase of farm implements 6. For consumption 7. For social obligation 8. Other, specify			

15.3. If no why? (Multiple answers are possible)

1) Fear of ability to pay2) Lack of asset for collateral3) No one to give credit
4) High interest rate5) No need for credit
6) Others (specify) _____

16. Market access

16.1. Is there a nearby market place? _____ 1= Yes; 2=No

16.2. The distance of nearby market from your residence is _____Km.

16.3. Where do you sell your farm products? (Multiple answer possible)

1) On farm (local assembler) 2) Taking to the local market
3) Through service cooperatives 4) others (specify)_____

16.4. What means of transport do you use to transport your product?

1) Trucks 2) Animal power 3) Human power 4) Others_____

16.5. When do you sell most part of your produce? _____ Months

16.6. What are the problems in marketing your products?

1) Transportation problem 2) Too far from market place
3) Low barging power4) Low price of Agricultural produce
5) Other specify_____

16.7. .Do you get reasonable price for your produce at this particular time? _____1= Yes; 0=No

16.8. If no, what are the reasons? (Multiple answerers possible) _____

1) No (demand) for the produce 2) More supply of the produce
3) Lack of access to potential market 4) others (specify) _____

16.9. Why did you sell at that particular time of lower (unreasonable) price?

1) To settle debts 2) To pay tax3) Social obligations (wedding, funeral, iddir, etc)
4) To meet family requirements 5) others (specify) _____

16.10. What do you think should be done to solve this problem? _____
_____

Section Four- Related to household wellbeing

4.1.Assessing household wellbeing

4.1.1. Housing Condition

1. Observe and record the number of buildings present in compound _____

For each building assess the following;

No.	Roof Material				Wall material					Floor material			Number
	Thatch	Iron Sheet	Concrete	Earth	Wooden Poles	Wood and Mud	Bunt bricks	concrete	Plant Residues	Earth	Wooden	Concrete	

4.1.2. Access to Education

Item	Indicate
Number of school aged children	
Number of children who are not in school	
Reasons for being out of school (tick the answer in the next column)	Cost implication Not interested Others, specify

4.1.3. Access to Water and Sanitation, electricity and modern household tools?

No.	Item	Indicate
1	Do you access to clean water? 1=Yes, 0=No	
2	Distance from the source of clean water (meters)	
3	Season when you lack clean water(Months)	
4	Possess and use modern latrine 1=Yes,0 =No	
5	Do you have access to Electricity? 1= Yes – solar, 2= Yes – generator, 3=Yes – other, 0=No	
6.	Do you have modern household tools like refrigerator, stove etc? 1=Yes , 0= No	

4.1.4. Assessing Heath service and household heath condition

1. Do you have human health facilities in your community? 1= Yes; 0=No
2. How far do you travel to get the health services? _____ Km
3. Do you have any sanitation facilities? 1= Yes; 0=No
4. Has anyone in your home been seriously sick during the last one year? 1= Yes; 0=No
5. If yes, how many of your family members were got sick? _____
6. What were the diseases that affect your family? _____
7. At what time of the year is these sicknesses are worse? _____
8. Who do mostly affected by these sicknesses in the household? 1= children; 2= wifeand daughters; 3= husband; 4= elderly; 5= others (specify) _____
9 Is the problem disease changed over time? 1= less severe; 2= not changed;3= severe; 4= got worse
9. Is anyone died from your family members during the last one year? 1= Yes; 0=No,

11. If yes, indicate the age, sex and reasons for the death.

Person died	Age	Sex	Causes for death

12. Where do you get treatment in the time of sickness?
    a) Health centers b) Herbalists
    c) Buy medicine from shop d) Just stay home
    e) Traditional Health Service
13. If the answer in question 1 is not (a), what is the reason behind your option?
    a) Lack of enough money b) Herbalists offer better service/ credit
    c) Others, specify_____

14. How much did you spend on health costs in the year 2009/2010? _____
15. If the answer in question number 1 is (a), what is the main source of funds for that service? (Please specify at least the three main source of income_____
    _____

16. How often do household members fall sick and attend health centers?

No.	Indicate how often member(s) fall sick				Indicate how often You visit health centers				Reasons for not visiting health centers often			
	Never	Once per year	2-3 times per year	>4 X per year	Never	Once per year	2-3 Xper year	>4 X per year	Cannot afford	Distance	Poor service	Other (specify)

17. Do you have access to clean and protected drinking water in your vicinity?
1= Yes 2=N

18. If no, what is the source of your drinking water?
1. Traditional well 3) Ponds
2. Aquifers in the sands of riverbeds (unprotected) 4) Springs
5) Others (specify)_____

19. How far you travel to fetch water? _____ Km

Thank You Very Much!!!!!!!

Appendix 12

አዲስ አበባ ዩኒቨርሲቲ
በሀገር ልማት ጥናት ኮሌጅ
የክፈለሀገራዊና አካባቢ ልማት ጥናት ማዕከል

ይህ መጠይቅ የተዘጋጀው በአዲስ አበባ ዩኒቨርሲቲ በክፈለሀገራዊና አካባቢያዊ ልማት ጥናት ማዕከል ለመመረቂያ የማሟያ ጥናት መረጃ ለመሰብሰብ ነው፡፡ ጥናቱ የሚሰራው መሬት የማግኘት ሁኔታ በሰዎች የአኗኗር ዘይቤ ምርጫ ላይ የሚኖረውን ተፅእኖ እና ተያይዞም በቤተሰብ ደህንነት ላይ የሚኖረውን እንድምታ ተኩረቱን በወላይታ ዞን ሶዶ ዙሪያ ወረዳ ያደረገ ነው፡፡ የምትመልሷቸው መልሶች ለዚህ ጥናት በጣም ጠቃሚ መሆኑን ልገልፅላችሁ እወዳለሁ፡፡ ለሁሉም ጥያቄዎች ለምትመልሷቸው ትክክለኛ መልሶች ላደንቅ እወዳለሁ፡ የምትመልሷቸው መልሶች ሚስጥረነታቸው እንደተጠበቀ ሆኖ ለትምህርት አላማ ብቻ እንደሚውል ላረጋግጥላቸሁ እወዳለሁ፡፡

ውድ ጊዜያችሁን መስዋት አድርጋቸው መረጃ ለመስጠት ፍቃደኛ ስለሆናቸው እና ለትብብራችሁ ከልብ አመሰገናለሁ፡፡ ያለ እናንተ ፍቃድ እና ትብብር የዚህ ጥናት አላማዎች አይገኙም፡፡

አጠቀላይ መመሪያ

1. ስምዎን መፃፍ አይጠበቅቦትም
2. እባኮትን ምልክት (✓) ትክክለኛ ለምትሏቸው መልሶች በተሰጡት ሳጥን ዝግ ለሆኑ ጥያቄዎች እና ክፍት ለሆነ ጥያቄዎች ሀሣቦንና አስተያየትን በተቀመጡት ባዶ ቦታዎች ላይ ይሙሉ፡፡
3. ለጥያቄዎች ከአንድ በላይ አማራጮችን ከመረጣችሁ ተጨማሪ ምልክት (✓) ማድረግ ትችላላችሁ
4. ተጨማሪ መረጃ ወይም ማብራሪያ ከፈለጋችሁ በሚከተሉት ቁጥር ልታገኙኝ ትችላላችሁ 0985 473816/09 21 05 50 34

ክፍል አንድ

1.1 የቤተሰብ መለያ ቁጥር _____/1፡ጉሙ ኮይሻ 2. ሜንቴጌሬሪአ 3.አቶሳሀፊ 4. ሾላ ኮዶ

1.2 የቀበሌው ስም_____

1.3 ቀን እና ጊዜ ቃለ መጠይቅ የተካሄደበት

1.4 የቤተሰብ አስተዳዳሪ ፆታ A. ወንድ ☐ B. ሴት☐

1.5 የቤተሰብ አስተዳዳሪ እድሜ_____

1.6 የቤተሰብ መሪ/አስተዳዳሪ የትምህርት ደረጃ /መደበኛ/

ሀ. ያልተማረ ☐ ለ. መፃፉና ማንበብ የሚችል ☐ ሠ. ከ1-5 ክፍል ☐

ሐ. ከ6-10 ክፍል ☐ መ. ከ10-12 ክፍል ☐ ረ. ዲግሪ እና ከዚያ በላይ ☐

ለ. መደበኛ ያለሆነ ትምህርት ተከታትሏል/ሻል (የሀይማኖት ትምህርት)? ሀ. አዎ ☐

አይደለም☐

ሐ. የቤተሰቡ አባወራ መደበኛ ትምህርት ከተማረ እባኮትን ትክክለኛውን የመደበኛ ትምህርት ደረጃ እዚህ ያስፈሩ _____

1.7. የቤተሰቡ መሪ የጋብቻ ሁኔታ

ሀ. በጋብቻ የሚኖር ☐ ለ የተፋታ ☐ሐ. ባሏ የሞተባት ☐ መ. ያላገባ ☐

1.8. በዚህ አካባቢ ነባር ነዋሪ ኖት ሀ.አዎ ☐ ለ አይዳለም ☐

1.9. ለጥያቀ ቁጥር 1.8 መልሶዎ አይደለም ከሆነ ከየት አካባቢ ነው የመጡት? _____

1.10. ወደዚህ አካባቢ ለመምጣቶ ምክንያቶ ምንድ ነው?

ሀ. በጋብቻ ምክንያት ☐ ለ. ዘመድ ለመቀላቀል ☐ ሐ. በድርቅ ምክንያት የነርኩበትን ቦታ☐

ለቅቄ☐ መ. የመሬት ይዞታ ለማግኘት ☐ ሠ. በፍቺ ምክንያት ☐

ረ. ጦርነት/ግጭት ቀድሞ በነበርኩበት ቦታ በ. ሌላ_____

1.1.1 መልስዎ ሌላ ከሆነ እባኮትን ይጥቀሱ_____

1.1.2 አሁን ባሉበት ስፍራ በተከታታይ ለስንት ጊዜ ቆይተዋል /በአመት/?_____

1.1.3 የቤተሰብ አባላት ብዛት /ቋሚ የቤተሰብ አባላት ብዛት ይህ መጠይቅ በሚካሄድበት ጊዜ

አጠቃላይ= _____ /ወንድ= _____ሴት=_____

1.1.4 ከ15 አመት በታች የሆኑ የህፃናት ብዛት እና ከ65 ዓመት በላይ የሆኑት_____

1.1.5 የቤተሰቡ አባወራ/እማወራ በስራ ላይ ይገኛል/መሰራት ይችላል/ አሁን ባለው ሁኔታ ጤነኛ ነው?

ሀ.አዎ ☐ አይደለም ☐

1.1.6 ምላሽ አይደለም ከሆነ ማነው ቤተሰብ የማስተዳደር ኃላፊነት ያለው

ሀ. የቅርብ ዘመድ ☐

ለ. ታላቅ ወንድም/እህት ☐

ሐ. ሌላ ከሆነ እባኮትን ያስፍሩ_____

የሌሎች ቋሚ የቤተሰብ አባላት ባህሪያት ጠቅላላ መረጃ /ማጠቃለያ/

ተ.ቁ	ስም	ከቤተሰቡ መሪ/አባዎራ/አማወራ ጋር ያለው ግንኙነት	እድሜ	ፆታ	የጋብቻ ሁኔታ	የሚሰሯቸው ሁለት ዋና ስራዎች		የትምህርት ደረጃ (ከ7ዓመት በላይ ለሆኑ)	በመስራት ላይ ይገኛል
						አንደኛ	ሁለተኛ		
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
				1.ወንደ 2.ሴት	1.ያላገባ 2.ያገባ 3.የተፋታ	1ግብርና 2 እረኛ/አለት ጠባቂ 3 ከቤት እመቤት 4 የቀን ሰራተኛ 5 ሽመና 6 እደ ጥበብ 7 ተማሪ 8 የጋራዥ ሰራተኛ 9 ነጋዴ 10 የእንጨት ነጋዴ 11 አትክልትና ፍራፍሬ 12 ፀጉር አስተካካይ 13 ሌላ 14 ስራ አጥ	1. ግብርና 2. እረኛ/አለት ጠባቂ 3. ከቤት እመቤት 4. የቀን ሰራተኛ 5. ሽመና 6. እደ ጥበብ 7. ተማሪ 8. የጋራዥ ሰራተኛ 9. ነጋዴ 10. የእንጨት ነጋዴ 11. አትክልትና ፍራፍሬ 12. ፀጉር አስተካካይ 13. ሌላ 14. ስራ አጥ	1. ያልተማረ 2. ማፃፍና ማንበብ 3. የመጀመሪያ ደረጃ ትምህርት 4. ሁለተኛ ደረጃ ትምህርት 5. ልዩ ስልጠና	1. አዎ 2. አይደለም

ክፍል ሁለት፡- ከመሬት ይዞታ እና አጠቃቀም ጋር የተያያዙ ጥያቄዎች

2.1. መሬት አሎት ሀ.አዎ ☐ ለ.የለኝም ☐

2.2. መልስዎ አዎ ከሆነ የይዞታዎ ምንጭ ምንድ ነው ወይም ይዞታው እንዴት ሊያገኙት ቻሉ? /ከአንድ በላይ መልስ መመለስ ይቻላል፡፡

ሀ. መሬት በሚከፋፈልበት ወቅት ☐ መ. ከዘመዶቼ በጋራ በመጠቀም ☐

ለ. ከወላጆቼ ወርሼ (ውርስ) ☐ ሠ. ከሎሎች ተጋርቼ ☐

ሐ. በግዢ ☐ ረ. ከሌሎች ተከራይቼ ☐

ሰ. ሌላ /እባኮትን ይጥቀሱ/_____

1.3 የቤተሰብ የመሬት ስፋት /በሄክተር/ አሊያም በሌላ መንደሩ በስፈሩ መለኪያ መሰረት_____

ሀ. የእርሻ መሬት _____(በሄክታር ወይም በመንደሩ መለኪያ መሰርት)

ለ. ያልዳበረ መሬት _____(በሄክታር ወይም በመንደሩ መለኪያ መሰርት)

ሐ. የግጦሽ መሬት_____(በሄክታር ወይም በመንደሩ መለኪያ መሰርት)

መ. በደን የተከበበ መሬት _____((በሄክታር ወይም በመንደሩ መለኪያ መሰርት)

ሠ. የመኖሪያ መሬት _____ (በሄክታር ወይም በመንደሩ መለኪያ መሰርት

ረ. ሌላ _____ (በሄክታር ወይም በመንደሩ መለኪያ መሰርት)

2.4. የጋራ የሆነ የግጥሽ መሬት በቀበሌ ውስጥ አላችሁ? ሀ. አዎ ☐ ለ. አይ ☐

2.5. ላለፉት አስር አመታት የመሬት ይዞታዎ ስፋት ምን ይመስላል?

ሀ. እየጨመረ ነው ☐ ለ. እየቀነሰ ነው ☐ ሐ. ለውጥ የለውም_____

2.6 የመሬት ይዞታ ስፋት እንዲጨምር ወይም እንዲቀንስ ምክንያት/ቶች ምን ነበር/ሩ? _____

_____

2.7. ከጠቅላላ የመሬት ይዞታዎ ምን ያህል ጥንድ መሬት ነው ለእርሻ የሚጠቀሙት? _____

2.8. በመኖሪያዎ እና በእርሻዎ ማሳ መሀከል ያለው ርቀት በእግር ምን ያህል ያስኬዳል /በሰዓት ወይም በደቂቃ/? _____

2.9. ማሳዎትን በከፊል ለሌሎች ገበሬዎች በጋራ አዝርዕት ለመዝራት አከራይተው ያውቃሉ?

ሀ.አዎ ☐ ለ.አይ ☐

2.10. መልሶዎ አዎን ከሆነ ለምንድ ነበር ለጋራ አገዛዕርት ለመገዛራት የወሰኑት? /ከአንድ በላይ ምላሽ መስጠት ይቻላል/

ሀ. ምክንቱም የቤተሰቡ መሪ ሴት ስለሆነች ☐

ለ. የሚዘራ ዘር ስለሌለ/ስላጣሁ ☐

ሐ. በህመም ምክንያት ☐

መ. በእርጃና ምክንያት መንቀሳቀስ ስላልቻልኩ ☐

ሠ. የዘመናዊ መሣሪያዎች ግብዓቶችን መግዛት ስላልቻልኩ ☐

ረ. በጣም ሰፊ መሬት ስላለኝ/ተጨማሪ መሬት ስላለኝ ☐

ሰ. ማረሻ በሬ ስለሌለኝ ☐

ሸ. ሌላ ከሆነ ይገለፅ_____

2.11. በቤተሰብዎ ውስጥ ማነው የመሬት ይዞታ ባለቤት ማይሆነው?

ሀ. ከ18 ዓመት በታች የሆኑ ህፃናት ☐ ለ. አካል ጉዳተኞች ☐

ሐ. ሴቶች ☐ መ. ልጃ ገረዶች ☐ ሠ. ወንዶች ☐

ረ. ወንድ ልጆች ☐

2.12. በመሬት ይዘታዎ ላይ ምን ዓይነት መብት ነው ያለዎት?

ሀ. የጊዜያዊ ፍቃድ ☐ ሐ. ምንም የለኝም ☐

ለ. በህግ እውቅና ያለው ይዞታ ማረጋገጫ ☐ መ. ሌላ ከሆነ ይግለጽ_____

2.13. ያሎት መሬት ቤተሰቦን ለመመገብ እና ሌሎች መሠረታዊ ነገሮችን ለማሟላት በቂ ነው?

ሀ. አዎ ☐ ለ. አይደለም ☐

2.14. ለጥያቄ ቁጥር 2.13 መልስዎ አይደለም ከሆነ እንዴት ነው ሌሎች መሰረታዊ ፍላጐቶችን የሚያሟሉት?

ሀ. ተቀጥሮ በመስራት ☐ ሐ. ጥቃቅን ንግድ በማካሄድ ☐

ለ. ከውጭ በሚላክ ገንዘብ በመጠቀም ☐ መ. ፍጆታን እና ወጪን በመቀነስ☐

ሠ. ወደ ሌሎች አካባቢዎች በመሰደድ /በመሄድ/ ☐

ረ. ሌላ ከሆነ ይግለፁ_____

2.15. በቂ የሆነ የሚታረስ መሬት ባለመኖሩ ምን ዓይነት ተግዳሮት ገጠመዎት?

ሀ. ለራሴ እና ለመሬት ባለቤቶች ማረስ (መጋራት) ☐ ለ. ብድር መበደር አልቻልኩም ☐

ሐ. በረዥም ጊዜ የሚያፈሩ አገዛዕርቶችን አላርስም ☐

መ. ሌላ ከሆነ ይግለፅ_____

2.16. መሬት ከሌለህ በምን ዓይነት የአኗኗር ዘይቤ ነው የምትደዳደረው?

ሀ. በመንግስት ስራ ☐ መ. ስራና ገንዘብ ለማግኘት ወደ ከተማ በመስዳድ /በመሄድ/ ☐

ለ. የመሬት ባለቤት ከሆኑ ሰዎች ጋር በጋራ በማረስ ☐ ሠ. ከእርሻ ውጪ ባሉ ስራዎች ☐

ሐ. በሌሎች ሰዎች እርሻ ውስጥ ተቀጣሪ በመሆን ☐ ረ. ሌላ ከሆነ አቦኮን ያስፍሩ_____

_____

2.17. በአካባቢያችሁ ያለውን የመሬት ይዞታ አስመልክቶ በአጠቃላይ ምን ዓይነት እይታ/አስተያየት ነው ያሎት?_____

ክፍል ሶሶት ከአኗኗር ዘይቤዎች ጋር በተያያዘ

3.1 በየትኛው የእርሻ መስክ ነው ቤተሰቦዎ የተሳማራው? እባክዎትን ከተሳተፉ ምልክት ያድርጉ

ሀ. በሰብል ምርት ☐ ለ. በአንስሳት እርባታና ማዳቀል ☐ ሐ በሰብል ምርትና እንስሳት እርባታ ☐

መ. ሌላ ካለ ይግለፁ _____

3.2 ከቤተሰብም አባላት መካከል ከእርሻ ምርት /ግብርና ውጭ የሚሰራ አለ?

ሀ.አዎ ☐ ለ.የልም ☐

3.3 መልስዎ አዎን ከሆነ የተሰማሩበትን መስክ፣ የተሰማሩትን ሰዎች፣ ከስራቸው የሚያገኙትን የገቢ መጠን እና የሚያገኙትን ገቢ ለምን አላማ እንደሚያውሉ የሚከተለውን ሰንጠረዥ ተጠቅማችሁ አስቀምጡ

የሰራው ዓይነት	በስራው ላይ የተሰማሩ ሰዎች	በወር ውስጥ በስራው ላይ የሚያሳልፉት ጊዜ	ከስራው የሚያገኙት አመታዊ የገቢ ሂሣብ ተመን		የጥሬ እቃው ተመን በብር ሲተመን	የተገኘው ገቢ የሚውለው		
			ብር	ጥሬ እቃዎችን ዝርዝር		አንደኛ	ሁለተኛ	

1 የቀን ስራ 2የመንግስትሰራተኛ 3. የምግብ ስራ ለስራ እቅድ 4. ውትድርና 5. ጥበቃ 6. የሳር ግጦሽ መሸጥ 7. የሰብል ቅሪት 8. የእንሰሳት ንቃት (ኩበት) ሽያጭ (kubat)↓	1. አባወራ 2. ባል ወይ ሚስት 3.የመጀመሪያ ልጅ 4.ሁለተኛልጅ 5.ተቀጣሪሰራተኛ	ቀናት/ስአታት	ብር	እቃዎችን ይዘርዝሩ	ብር	1. ምግብ ለመግዛት 2. ለቁጠባ 3. ለቤት ግንባታ 4. የእርሻ መሳሪያዎችን ለመግዛት 5. ልብስ ለመግዛት 6. ዘመናዊ የእርሻ ግብዓቶችን ለመግዛት 7. እዳ ለመክፈል 8. ትንሽዬ ሱቅ (ንግድ) 9. ግብር ለመክፈል 10. ሌላ ይገለፅ
9. ደረቅ እንጨት ሽያጭ 10 ከሰል ሽያጭ 11 ጥሬ ሰብል ንግድ 12 የቀንድ ከብት ሽያጭ 13 በከብት ድለባ 14 በቅቤ ንግድ 15. በዶሮ ንግድ 16. ግመል ወይም ሊላ እንስሳት ማከራየት 17. የእንጨት ምርት 18. በጣውላ ንግድ 19.የጫት ንግድ 20. ጥቃቅን ንግድ 21. ፍራፍሬ (የፖፖያ) ንግድ 22. ተቀጣሪ እረኛ 23. ተቀጣሪ ገበሬ 24. ልብስ ስፌት 25. አናጢ 26. ፊትል መፍተል 27. ሽመና 28. ወርቅ አንጣሪ 29. ዕደ ጥበብ 30. መደሃኒት ቅመማ 31. ወጌሻ 32. በሬ ኪራይ 33. መሬት አከራይ 34. ምግብ ሻጭ 35. የሻይ ንግድ 36.የሀይማኖት ስርአት መምራት 37. የስኳር ንግድ ደንች ንግድ 38. ልመና 39. የማር ንግድ 40. የሣር ጣሪያዎች መሸጥ						

3.4 የአኗኗር ዘይቤን በተለያዩ የስራ መሰኮች እንዳያስፋፉ ችግር የሆነቦት ምንድነው?

I_____

II_____

III_____

IV_____

3.5. ከቤተሰቦዎ አባላት ከግብርና ውጪ በሆነ ስራ ካልተሰማሩ፤ ያልተሰማሩበት ምክንያቶች ምንድን ናቸው?

ተ.ቁ	የማይሰማሩባቸው ምክንያቶች	1. አዎ	2. አይደለም
1	ከግብርና ውጭ ለሌላ ስራ ትርፍ ጊዜ አለመኖሩ		
2	ለሚያበረክተው ዋጋ (ስራው) ግንዛቤ አለመኖር		
3	የስራ ክህሎት አለመኖር		
4	የስራ አማራጮች አለመኖራቸው		
5	እድሜዬ በመግፋቱ መስራት ባለመቻሌ		
6	በጤና ችግሮች		
7	ንግድ ለመጀመር የሚያስፈልግ መነሻ ገንዘብ ባለመኖሩ		
8	ሌላ ካለ ይገለጽ		

3.6. እርስዎ ወይም ከቤተሰበዎ አባላት መካከል ለስራ ፍላጋ ወደ ሌላ ቦታ የተሰደደ አለ?

ሀ. አዎ ☐ ለ.አይደለም/የለም ☐

3.7. መልስዎ አዎን ከሆነ በ2009/10 ምን ያህል ጊዜ የቤተሰቦዎ አባላት ወይም እርሶ ለስራ ፍለጋ ተሰደዋል?_____

3.8 በአጠቃላይ የቤተሰዎ የገቢ ምንጭ በዋናነት ምንድ ነው?

ሀ. ግብርና ☐ ለ. ንግድ ☐ ሐ. የቀን ገቢ ☐ መ. ወርሀዊ ደሞዝ ☐ ከመንግስት መስራያ ቤት ☐

2. የግል ተቀጣሪ ☐ ሠ. ሌላ ከሆነ ይጠቀስ_____

3.9 የሀብት መዝገቦን መዳሰስ

ሀ. በቤተሰብ ውስጥ ያለ የሰው ሀብት

S/N		ብዛት
1	ከቤተሰቦዎ አባላት መካከል በጣም የተማረው/ችው በትምህርት የቆየበት/ችበት በዓመት	
2	ከጉልማሳ የቤተሰብ ዓባላት መካከል የስራ ችሎታ አላቸው (1=አዎ,0=የለም)	
3	ከቤተሰበዎ ዓባላት መካከል አካለ ጉዳተኛ አለ, (1=አዎ 0=የለም)	
4	የሰራተኛ ቁጥር /በስራ ላይ የሚገኙ/ በገንዘብ የሚያገኙት	

ለ. የገንዘብ ሀብት

ተ.ቁ		አዎ ካሉ (✓) ምልክት አይደለም(×)
1	የቤተሰብዎ አባላት የባንክ ደብተር ያንቀሳቅሳሉ	
2	የቤተሰቦዎ አባላት ብድር ተጠቅመው ያውቃሉ	
3	ለመሬት ይዞታ ማረጋገጫ የምስክር ወረቀት አሎት	

ለ. የገንዘብ ሀብት (የገቢ ሁኔታ) በወር /በብር የሚተመን/

S/N		ብዛት
1	<10000	
2	10000-20000	
3	20000-30000	
4	30000-40000	
5	>40000	

ሐ1. የማህበራዊ ሀብት /የግንኙነት መረብ ዓይነት እና የቤተሰብዎ አባልት በህብረተ ስራ የተሳተፉበት/

ተ.ቁ	ዓይነት/እቁብ፣እድር፣ የትምህርትቤትኮማቶ፣ የሀይማኖት ተቋማት፣ አበዳሪ ቡድኖች፣ የማህበራዊ ደህንነት ቡድን፣ ሌላ ካለ ይጥቀሱ	መደበኛ	መደበኛ ያልሆነ
የተሳተፉበት		አዎ ☐ አይደለም ☐	አዎ ☐ አይደለም ☐
ያልተሳተፉበት			
የአኗኗር ዘይቤን/ባላቸው/ ያጠናክራል/ሉ			
በሚሰጡት አገልገሎት ደስተኛ ነህ			
የትኛው ማህበራዊ ትስስር ነው የሚጐድለው			

ሐ2. በህብረት ስራ ውስጥ አባልነት

1. መደበኛ በሆኑ ማንኛውም የህብረት ስራ ከቤተሰብዎ መካከል የተሳተፉ አሉ

   ሀ.አዎ ☐ ለ. አይደለም/የለም ☐

2. መልስዎ አዎ ከሆነ የህብረት ስራ ማህበሩን ስም ሊጠቅሱልን ይችላሉ?_____

3. በእንደዚህ ዓይነት የህብረት ስራ ማህበራት ውስጥ በመሳተፉ ምን ጥቅም አገኙ?

   ሀ. ገቢዬ ጨምሯል ☐ ለ. የብድር ተጠቃሚ ሆኛለሁ ☐ ሐ. ሌላ ይግለጽ_____

   _____

4. መልስዎ የለም ተሳትፌ አላውቅም ከሆነ ምክንያተ ምን ሊሆን ይችላል?

ሀ.መረጃ ስለሌለኝ ☐ ለ. ፍላጎቱ ስለሌለኝ ☐ ሐ. በአካባቢዬ የህብረት ስራ ማህበራት አለመኖሩ ☐ መ. ሌላ ከሆነ ይጥቀሱ_____

መ. የመሬት ሀብት

1. እባኮትን አሁን ያሎትን የመሬት ይዞታዎን መጠን /በሄክታር/ ወይም የተከራዩት / ያከራዩት ካለ ያመላክቱ

ምደባ	የቦታ ስፋት	ባለቤትነት	ላለፉት 12 ወራት የተመረተ ዋና ምርት /የተሰበሰበ ከፍተኛ 3 /መለያ ቁጥር ለምርቶቹ/		
			ደረጃ 1	ደረጃ 2	ደረጃ 3
ደን					
1. የተፈጥሮ ደን					
2. ጥብቅ ደን					
3. የአዝዕርት መሬት					
የግብርና መሬት					

4. የሰብል መሬት					
5. የግጦሽ መሬት (የተፈጥሮ ወይም የተተከለው)					
6. አግሮ-ፎረስት					
7. Silvipasture					
8. የሚታረስ ግን አሁን ጥቅም ላይ ያለዋለ					
9. ሌላ የቅጠላ ቅጠል አይነት/የመሬት አጠቃቀም ወዘተ…					
10. አጠቃላይ የመሬት ይዞታዎ (1+2+….+9)					
11. ያከራዩት መሬተ /ከ1-9 ውስጥ የተካተተ					
12. የተከራዩት መሬት /ከ1-9 ውስጥ የተካተተ					

1. በቤተሰቦዎ ውስጥ መሬት በማን ይዞታ ነው?

ሀ. አባት ብቻ ☐ ለ. እናት ብቻ ☐ ሐ. እያንዳንዱ ጐልማሳ ከ18 ዓመታት በላይ ☐

መ. እያንዳንዱ ወጣት 18 ዓመት የሞላሀ ☐ ሠ. ሌላ ካለ ይግለፁ_____

2. በአንድ መሬት ውስጥ በአንድ ባለቤትነት የተያዙት መሬት በሙሉ አለ?

ሀ. አዎ ☐ ለ. አይደለም ☐

3. ለጥያቄ ቁጥር 2 መልሶዎ አይደለም ከሆነ ምን ያህል ቁራሽ መሬት ይዞታ አሎት?_____

4. በቤተሰቦዎ አባል መካከል ወደ ሌላ ቦታ ስራ ለማግኘት የተሰደደ አለ?

ሀ.አዎ ☐ ለ. አይደለም/የለም ☐

5. ለቤተሰቦዎ ከስደትና እና ከውጭ ሚላክ ገቢ ጠቀሜታ ከግዜ ወደ ግዜ ምን ይመስላል?

ሀ.ጨምሯል ☐ ለ. ቀንሷል ☐ ሐ. ከጊዜ በኋላም ለውጥ አይታይም ☐

6. በአጠቀላይ ስደት የምግብ እጥረትን ለመከላከል /ለማምለጥ የተሻለ አማራጭ ነው ብለው ያምናሉ

1. አዎ ☐ 2. አይደለም ☐

7. መልስዎ አዎን ከሆነ ምክንያቶን ይግለፁ_____

_____

8. ቤተሰብዎ ከውጭ የሚላክ ገንዘብ እያገኙ ነው ሀ.አዎ ☐ ለ.አይዳለም ☐

9. ከውጭ የሚላክ ገንዘብ የሚቀበሉ ከሆነ፤ ስለሚላክሎት የገንዘብ ምንጭ፣ ከሚልክሎት ሰው/ድርጀት ጋር ያለዎት ግንኙነት፣ በአማካይ በገንዘብ የሚያስገኙት ወይም በጥሬ ሲተመን በአመት እና ለምን አላማ እንደሚያዎሉት

10. ስለማላክሎት ገንዘብ በሚከተሉው ሳጥን

ምንጭ	ከማን ነው የተላከው	መጠን በዓመት		የሚለካው ገንዘብ ጠቀሜታ		
		ብር	በጥሬእቃ			
				አንደኛ	ሁለተኛ	ሶስተኛ
1. በተመሳሳይ ወረዳ ውስጥ በሌላ ቀበሌ 2. ከሌላ ወረዳ በተመሳሳይ ዞን 3. ከሌላ ዞን 4. ከውጭ ሀገር /ከየትኛው ሀገር እንደሆነ ይገለጽ/	1. አባት 2. እናት 3. ወንድም 4. እህት 6. የልጅ ልጅ 7. ዘመድ ያልሆነ 8.ድርጅት /ይገለፀ	ብር	እቃውን ይጥቀሱ	1. ቤት ለመገንባት 2. የቀንድ አባት ለመግዛት 3. ምግብ ለመግዛት 4. አልባሳት ለመግዛት 5. የእርሻ መሬት ለመግዛት 6. ጥሬ ግብዓቶችን ለመግዛት 7. ለሱቅ ንግድ 8. ሌላ ከሆነ ይገለጽ		

11.ያሎትን የቀንድ ከብት ብዛት ሉነግደን ይችላሉ

	አይነት	ብዛት	በገንዘብ /በብር/ ሲተመን
1	ላሞች		
2	በሬዎች		
4	ጥጃዎች		
5	በጎች		
6	ፍየሎች		
7	በቅሎዎች		
8	ፈረሶች		
9	አህያዎች		
10	ዶሮዎች		
11	ግመሎች		
12	የንብ ቀፎዎች		

12. ለአለፉት 12 ወራት ግብርናን ሊያዘምኑ የሚችሉ መሣሪያዎችን ለምሳሌ ማዳበሪያ፣ የተሻሻለ ምርጥ ዘር፣ መድሃኒቶች ወዘተ ተጠቅመዋልን?

ሀ. አዎ ☐ ለ. አይደለም ☐

12.መልስዎ አዎ ከሆነ ዝርዝሩን ከታች ያስቀምጡ

የግብርና መሣሪያዎች ስም	የተጠቀሙት ብዛት	የአንዱ ዋጋ	ጠቅላላ ዋጋ	ምንጭ/የመግዣ

14. የግብርና ማስፋፊያ አገልገሎት

14.1. በአካባቢዎ የግብርና ባለሙያ (የልማት ወኪል) ሰራተኞች አሉ?

ሀ. አዎ ☐ ለ. አይደለም/የሉም ☐

14.2. መልስዎ አዎ ከሆነ በዓመት ውስጥ ስንት ጊዜ ተገናኝተዋል?

1. በየቀኑ ☐ 2. በየሳምንቱ ☐ 3. በወር ሁለቴ ☐
4. በየወሩ ☐ 5. አንዳንዴ ☐ 6. ሌላ ከሆነ ይግለጽ_____

14.3 የጉብኝቱ አላማ ምንድ ነበር? (ከአንድ በላይ መልስ መመለስ ይቻላል)

1. በስብል ምርት ዙሪያ ምክር ለመስጠት ☐ 2. በእንሰሳት እርባታ ዙሪያ ምክር ለመስጠት ☐
3. በአፈር ጥበቃ ምክር ለመስጠት ☐ 4. ግብር ለመሰበሰብ ☐
5. ሌሎች ቡድሮችን ለመሰብሰብ ☐ 6. ሌላ ከሆነ ይገለጽ_____

_____

14.4. ከኤክስቴሽን አገልግሎት ሰጪ ድርጅት/ ከግብርና ማስፋፍያ ተቋማት ስልጠና አግኝተው ያውቃሉ? ሀ. አዎ ☐ ለ. አይ ☐

14.5. መልስዎ አዎ ከሆነ, የስልጠና አይነት ይጥቀሱ _____

_____

15. ብድር የማግኘትና የመጠቀም ሁኔታ

15.1. በ2009/2010 ማንኛውም ብድር ተበድረው ያውቃሉ? ሀ. አዎ ☐ ለ. አይ ☐

15.2. መልስዎ አዎ ከሆነ የሚከተለውን ሰንጠረዥ ይሙሉ

የብድር ምንጭ	የተበደሩበት ምክንያት	የተበደሩት መጠን	የተከፈለው የወለድ መጠን	አጠቃላይ የተመለሰው/የከፈሉት ብር
1) ከአገልግሎት ማህበራት 2) የንግድ ባንኮች 3) ከልማት ባንኮች 4) ከጓደኞች እና ዘመድ አዝማድ 5) ከማይክሮ ፋይናንስ ተቋማት 6) ከአካባቢያዊ ካሉ ገንዘብ አበዳሪዎች 7) መንግስታዊ ያልሆኑ ድርጅቶች ተቋማት 8) ሌሎች _____ _____ _____	1. ለበሬ ግዢ 2. የምርጥ ዘር ግዢ 3. ማዳበሪያ ለመግዛት 4. የኬሚካሎች ግዥ 4. የኬሚካሎች ግዥ 5. የእርሻ መሳሪያዎችን መግዛት 6. ለምግቦች (ለፍጆታ) 7. ለማኅበራዊ ግዴታ 8. ሌላ, ይግለጹ_____			

15.3. ለጥያቄ ቁጥር 15.1. መልስዎ የለም አልወሰድኩም ከሆነ ለምንድነው?

ሀ. መልሶ ለመክፈል ስለሚፈሩ ☐ ለ. ማስያዣ ሀብት ስለሌሎት ☐

ሐ. ብድር የሚሰጥ ስለሌለ ☐ መ.ከፍተኛ የወለድ መጠን ስላለው ☐

ሠ. ብድር ለመበደር ስላልፈለጉ ☐ ረ. ሌላ ካለ ይግለፁ _____

16. የገበያ ተደራሽነት

16.1. በአቅራቢያዎ የገበያ ቦታ አለ? ሀ. አዎ ☐ ለ. የለም ☐

16.2. የመኖርያ አድራሻዎ/ቤትዎ አቅራቢያዎ ከሚገኝ የገበያ ቦታ ያለው ርቀት /በኪ..ሜ/_____

16. የግብርና ምርትዎን የት ነው የሚሸጡት?

ሀ. ማሳ ላይ (በአካባቢ ደላሎች አመካኝነት ☐ ለ. በአከባቢ በሚገኝ የገበያ ቦታ በመሄድ ☐

ሐ. በአገልግሎት ማህበራት በኩል ☐ መ. ሌላ ካለ ይግለፁ _____

16.4. ምርትዎን ለማንቀሳቀስ ምን አይነት ሚጓጓዣ ነው የሚጠቀሙት?

ሀ. በጭነት መኪና/ተሽከርካሪዎች ☐ ለ. በእንስሳት ሀይል ☐ ሐ.በሰው ሀይል ☐

መ. ሌላ ካለ ይግለፁ_____

16.5. አብዛኛው ምርትዎን በየትኛው ወር ነው የሚሸጡት?_____ወር

16.6. ምርትዎን በአግባቡ እንዳይሸጡ ከሚያረጉ ችግሮች ምንምን ናቸው?

ሀ. የመጓጓዟ ችግር ☐ ለ. የመከራከር አቅምዎን ዘቅተኛ መሆን ☐

ሐ. የገበያ ቦታ በጣም ስለሚርቅ ☐ መ.ግብርና ምርቶች ዝቅተኛ መሆን ☐

16.7. ለሚያመርቱት ምርት በገበያ ላይ ተመጣጣኝ ዋጋ ያገኛሉ?

ሀ = አዎን ☐ ለ = አይ ☐

16.8. መልስዎ አይደለም ከሆነ, ምክንያቶች ምንድን ናቸው? (ብዙ ምላሽ ይቻላል)

ሀ. ለምርትዎ ገበያ አለመኖር ለ. የምርት መትረፍረፍ

ሐ. በቂ የሆነ የገበያ ቦታ አለመኖር መ. ሌላ ከሆነ ይግለፁ _____

_____

16.9. የገበያ ሁኔታ ተመጣጣኝ በማይሆንበት ግዜ ምርትዎን ለመሸጥ የሚያስገድዱ ምክንያቶች ምንድ ናቸው?

ሀ. ብድር ለመመለስ ☐ ለ. ግብር ለመክፈል ☐ ሐ. ለማህበራዊ ግዴታዎች (ለሰርግ፣ ለለቅሶ፣እድር ወዘተ) ☐ መ.ለቤተሰቡ ፍላጎት ለሚሚላት ☐

ሌላ ከሆነ ይግለፁ _____

16.10. ይህን ችግር ለመፍታት ምን መደረግ ያለበት ይመስላችኋል? _____

_____

ክፍል አራት፡ -ከቤተሰብ ደህንነት ጋር በተያያዘ

4.1 የቤተሰብ ደህንነት መዳሰስ

4.1.1 የቤት ሁኔታ

1. በግቢ ውስጥ የሚገኙትን ህንፃዎች ተመልከትና መዝግብ?

ስለ እያንዳንዱ ህንፃ የሚከተሉትን ዳስስ

ተ.ቁ.	ጣራው የተሰራው				ግርግዳው የተሰራው					የቤቱ መሬት ሁኔታ			ቀጥር
	የሳር ክዳን	የቆርቆሮ ጣርያ	ኮንክሪት	መሬት	የእንጨት ምሰሶዎች	እንጨት ና ጭቃ	የጡብ	ኮንክሪት	የእፅዋት ምርት	መሬት	እንጨት	ኮንክሪት	
5.													
6.													
7.													
8.													

8.1.2. ስለትምህርት አቅርቦትና ተደራሽነት

ዝርዝር	አስቀምጥ/አመለክት/አሳይ
ዕድሜያቸው ለትምህርት ያለደረሱ ልጆች ቁጥር	
ትምህርት ያልገቡ የህፃናት ቁጥር	
ከትምህርት ውጭ የሆኑበት ምክንያት(በሚቀጥለው ሰንጠረዥ ላይ መልሰን ያስቀምጡ)	በክፍያ ምክንያት ☐ ፍላጎቱ ስለሌለኝ ☐ ሌላ ከሆነ ያስቀምጡ_____

8.1.3. የውሃ እና ሳኒቴሽን፣ የኤሌክትሪክ እና ዘመናዊ የቤት እቃዎች በተመለከተ

ተ.ቁ.	ዝርዝር	አስቀምጥ/አመለክት/አሳይ
1	ንፁህ ውሃ አቅርቦት አለህ 1=አዎ, 0=የለም	
2	ከንፁህ ውሃ ምንጭ ያሎት ርቀት /በሜትር/	
3	ንፁህ ውሃ የማያገኙበት ወቅት (ወራት)	
4	ዘመናዊ ሽንት ቤት ተጠቃሚ ኖት 1=አዎ,0 =አይ	
5	የኤሌክትሪክ ተጠቃሚነዎት 1= አዎ - ሶላር 2= አዎ ጄኔሬተር3= አዎ - ሌላ 0= አልጠቀምም	
6.	እንደ ፊሪጅ፣ ስቶቭ የመሳሰሉ ዘመናዊ የቤት እቃዎች አሎት 1= አዎ 0= የለኝም	

4.1.4. የጤና አገልግሎትና የቤተሰብን የጤና ሁኔታ መዳሰስ

1. በአካባቢያችሁ የጤና መሰረተልማቶች አላችሁ 1. አዎ ☐ 0=የለንም ☐

2. የጤና አገልገሎት ለማግኘት ምን ያህል ርቀት ይጓዛሉ? በኪሎ ሜትር _____

3. የንፅህና መሰረተ ልማቶች አላችሁ? 1. አዎ ☐ 0= የለንም ☐

4. በአለፉት አንድ ዓመታት ውስጥ ከቤተሰብም መካከል በጠና የታመመ ነበር? 1. አዎ ☐0= አልነበረም ☐

5. አዎ ካሉ ከቤተሰቦም መካከል ስንት ሰው ነበር የታመመው? _____

6. ምን ያይነት በሽታ ነበር ቤተሰቦን የጉዳው?_____

7. በየትኛው ወር ውስጥ ነው በሽታው በጣም የከፋው እና ለምን? _____

8. ከቤተሰበዎ በህመሙ ማን ነው በጣም የተጎዳው /በተለየ መልኩ/?

ሀ.ልጆች ☐ ለ. ባልቴትና ሴት ልጆች ☐

ሐ. ባል ☐ መ. ሽማግሌ /ትልልቅ ሰዎች ☐ ሠ. ሌላ ከሆነ ይገለጽ_____

9. የበሽታው ችግር በጊዜ ሂደት ተቀይሯል? ሀ. ብዙም አይጎዳም ☐ ለ. ይጐዳል ☐

ሐ. ለውጥ የለውም ☐ መ. በጣም ብሶ ነበር ☐

10. በመጨረሻዎቹ አንድ አመታት ውሰጥ ከቤተሰብዎ መከከል የሞተ ሰው አለ? ሀ. አዎ ☐ የለም ☐

11. አዎ ካሉ የሞተበትን ምክንያት፣ ዕታ እና እድሜ ያስቀምጡ

የሞተው ስውዬ	እድሜ	ዕታ	የሞተበት/ችበት ምክንያት

13. ህመም በታመሙ ወቅት ህክምናዎን የት ያገኛሉ?

ሀ. በጤና ማዕከላት ☐ ለ. መድሃኒት ቀማሚያን ጋር በመሄድ ☐

ሐ. ከሱቅ መድሃኒት በመግዛት ☐ መ. ቤት ነው የተቀመጥኩት ☐

ሠ. የባህል ህክምና ማእከላት በመሄድ ☐ ረ. ሌላ ካለ ይግለፁ_____

14. ለጥያቄ ቁጥር 1 መልሶዎ የለም ከሆነ ምክንያቶ ምንድ ነው?

ሀ. በቂ ገንዘብ አለመኖር /አለማግኘት ☐ ለ. መድሀኒት ቀማሚዎች የተሻለ አገልግሎት ስለሚሰጡ ☐

ሐ. ሌላ ከሆነ ይገለጽ_____

15. በ2009/2010 ምን ያህል ወጪ ለህክምና አወጡ?_____

16. ለጥያቄ ቀጥር 1 መልካም አዎ (ሀ.) ከሆነ ለአገልግሎቶ ተጠቃሚነት ዋና የገቢ ምንጭ ከየት ነው /እባኮትን ቢያንስ ሶስት የገቢ ምንጮችን ያስቀምጡ/_____

17. ምን ያህል የቤተሰቦዎ አባላት ሲታመሙ በጤና ማዕከላት ይከታተላሉ

ተ.ቁ	የቤተሰቦዎ ብዛት ስንት ጊዜ አንደሚታ ያመላክቱ				ስንት ጊዜ የጤና ማዕከላትን እንዲሚጉበኙ ያመላክቱ				በተደጋጋሚ የጤና ማዕከላት የማይሄዱበት ምክንያት			
	በፍፁም	በአመት አንድ ግዜ	በዓመት ከ2-3 ጊዜ	በአመት ከ4 ግዜ በላይ	በፍፁም	በአመት አንድ ግዜ	በዓመት ከ2-3 ጊዜ ግዜ	በአመት ከ4 ግዜ በላይ	መክፈል ስለማልች ል	ርቀት ስላለው	አገልግሎቱ ዝቅተኛ ስለሆነ	ሌላ ከሆነ ይገለጽ

18. በአቅራቢዎ ንፅህናው የተጠበቀ የመጠጥ ውሃ ያገኛሉ 1. አዎ ☐ 2. አይደለም/አላገኝም ☐

19. አላገኝም ካሉ የመጠጥ ውሃ ከየት ነው የሚጠቀሙት

ሀ. ባህላዊ ጉድጓድ ሐ. ከኩሬ

ለ.በወንዝ ዳርቻዎች ውስጥ የሚገኙ የአባይ መጭመቂያዎች (ያልተጠበቁ) መ. ከምንጭ

ሠ. ሌላ ከሆነ ይግለጽ _____

19. ውሃ ለመቅዳት ምን ያህል ይጓዛሉ? በኪሜ _____

በጣም አመሰግናለሁ!!

Appendix 13
Checklist of Items for Guiding Focus Group Discussions

Dear participant of this discussion, the aim of this discussion is to collect data regarding the effect of land access on livelihood Strategies choice and its implication toward household wellbeing. To this end, the data gathered will be solely used for academic purpose and its confidentiality be assured. Therefore, I kindly request you to raise important issue to the point raised for discussion cognizant to the fact that the study will make contribution toward the attainment of household wellbeing by providing policy implication and recommendations

A. points related to Land Access

1. Are all people equally considered during land allocation process?
2. If no, please explain the reasons
3. How poor people are assisted to get access to agricultural land?
4. During the past five years how many poor people were assisted to get access to agricultural land
5. What are the Means through which household acquire arable land?
6. Who own and control land at household level (husband, wife, sons, and daughters)?
7. Whether land is possessed on single plot
8. Average number of separate plots per household if any
9. Average time taken to reach the main farms by majority of households
10. Average size of household farms
11. Common opportunities associated with arable land
12. Common constraints associated with arable land
13. Reasons for farming outside the villages
14. Reasonable per capita land size
15. Reasonable number of plots per household
16. General views on arable land in the village
17. Reasonable time taken to trek to farm

B. Related to Livelihood Strategies

1. Identification of the main economic activities.

1.1. What are the main economic activities that are the source of livelihood for the household?

2. Other economic activities undertaken by villagers apart from the main ones.

3. Main sources of income.

4. Main sources of food.

5. Opportunities attached on each economic activity.

6. Constraints associated with each economic activity.

7. Types of high paying livelihood strategies.

8. Opportunities and constraints attached to engaging in high paying livelihood strategies.

9. General views on the pursuit of economic activities in the village.

C. Related to household Well-Being

1. Qualities of a well-off household

2. Qualities of a household considered not well

3. Whether majority of households have the mentioned qualities of well-off household

Appendix 14

Checklist for Key Informant Interview

1. What looks like the nexus between land access and population size of the study area?
2. How land is administered in this area?
3. Are all people equally considered during land allocation process?
4. If no, please explain the reasons
5. How poor people are assisted to get access to agricultural land?
6. During the past five years how many poor people were assisted to get access to agricultural land?
7. What happen the size of land especially cultivated land of this area over the last five years?
8. What are the challenges for accessing land by the household in the study area?
9. What are the dominant livelihood strategies that most dominantly practiced in this area?
10. In your opinion what are the effect of land access on the choice of livelihood activities pursued?
11. How is the availability of different off-farm and non-farm employment opportunities of this area?
12. What is the effect of land access through the choice of livelihood strategies on household wellbeing?

Appendix 15

Checklist for field observation

1. Related to land access
   1.1. Agro-climatic, land use and coverage will be observed.
   1.2. Distance of farm land to the house of household
2. Related to population density
   2.1.Population density per square kilometer
   2.2.Level of migration
3. Related to source of livelihood (Livelihood strategies)
   3.1.Type of livelihood strategies followed in the area
   3.2.Most important dominant livelihood strategies
4. Related to household wellbeing
   4.1.Whether household have access to iron sheeted house
   4.2.Whether household have access to electricity, telephone, safe drinking water etc.
   4.3. Whether household have access to important modern household tools (Refrigerators...)

Appendix 16
Livelihood strategies in Partial






Appendix 17

Process of Data Collection at the field