ADDIS ABABA UNIVERSITY

COLLEGE OF DEVELOPMENT STUDIES

INSTITUTE OF REGIONAL AND LOCAL DEVELOPMENT STUDIES (IRLDS)

LIVELIHOOD STRATEGIES AND FOOD SECURITY OF LANDLESS HOUSEHOLDS IN DEHANA WOREDA OF THE AMHARA NATIONAL REGIONAL STATE

By

Moges Tamene Temesgen

Approved by Board of Examiners:

1) Woldeab Teshome ____________________ ____________________
Chairman, Graduate Committee Signature

2) Ignatius Mberengwa ____________________ ____________________
Academic Advisor Signature

3) Aklilu Amsalu ____________________ ____________________
Examiner Signature

July, 2009

Addis Ababa

Acknowledgments:

First and foremost I thank the Almighty God who gave me the wisdom and strength to endure all the ups and downs I faced in the course of the study program. I also acknowledge, with cordial thanks, Dr. Ignatious Mberengwa, my academic advisor, for his invaluable support and encouragement to get me writing on this very interesting, yet very vast and complex subject. Without his tireless and constructive suggestions, indeed with patience and diligence, this Thesis would have not come to fruition.

I am very grateful to my family members, specially my wife Selamawit Tsega, who bore all the responsibilities of taking care of our children and managing all other household affairs during my absence. My children Zelalem, Keariam, and Yeabsira who managed to adjust to my absence also deserve thanks. I am also indebted to other family members, Habtamu Tamene, Saba Tesema , Shitaw Dagne, Betizaz Hailu, Mesfine, Abeba, Kidist, Mulugojam, Kassa, Fantu, and others for the love and company they showed to my family during my absence.

My special gratitude also goes to Aklilu Dufera, Moges Alemu, Teferi Abegaz, Belay Agegnehu, for their unrelenting support and encouragement in the course of my study. My friends Desta Demena and Moges Alemu further deserve gratitude for their professional comments on the draft manuscript and all-round encouragement to proceed working on the subject. Similarly, I am also indebted to the following personalities; Paivi Antilla, Cristine Bjorkskog, Pirko Numela, Birhanu Asseffe, Dirb Yimer and all the staff members of EECMY-NCES for their unreserved support and encouragement during my study. I also greatly appreciate the following Dehana Project Staff members: Million, Addisu, Gashaw, Tesfaye, Mahile, Abate and the guards for their welcome and company during data collection. I would also like to thank the field assistant and the enumerators who painstakingly execute data collection work in Dehana. I also owe a deep debt of gratitude to Dehana Woreda ARDO and Administration offices for facilitating me the data collection work from their tight schedule.

Finally, my graduate study was largely made possible by the financial support of the Finland Evangelical Lutheran Mission through the Ethiopian Evangelical Church Mekane Yesus North central Ethiopia Synod. I am therefore very grateful to these organizations for giving me the opportunity to pursue one of the things that have special place in my life.

Table of Contents

CHAPTER III: RESEARCH METHODOLOGY:

CHAPTER IV: DESCRIPTION OF THE STUDY AREA:

CHAPTER V: RESULT AND DISCUSSION

CHAPTER VI: SUMMARY, CONCLUSION AND RECOMMENDATION

List of Tables:

List of Maps and Figures

Acronyms:

AAU	Addis Ababa University
ADLI	Agricultural Development Led Industrialization
ANRS	Amhara National Regional State
ARDO	Agricultural and Rural Development Office
asl	above sea level
CSA	Central Statistics Authority
DA	Development Agent
DFID	Department for International Development
DPPC	Disaster Prevention and Preparedness
EECMY NCES	the Ethiopian Evangelical Church Mekane Yesus North Central Ethiopia Synod
EGS	Employment Generation Scheme
EPLAUA	Environmental Protection Land Administration and Use Authority
EPRDF	Ethiopian People's Revolutionary Democratic Front
FAO	FOOD and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FEDO	Finance and Economic Development Office
FGD	Focus Group Discussion
FSCDPO	Food Security Coordination and Disaster Prevention Office
IDS	Institute of Development Studies
Kcal	Kilocalorie
KII	Key Informant Interview
MEDaC	Ministry of Economic Development and Cooperation
MOE	Ministry of Education
MOH	Ministry of Health
MoPED	Ministry of Planning and Economic Development

NGO	Non Governmental Organization
PRA	Participatory Rural Appraisal
PAs	Peasant Associations
PRA	Participatory Rural appraisal
SERA	Strengthening Emergency Response Ability
TLU	Tropical Livestock Unit
USD	United States Dollar

Abstract:

Land constitutes one of the most critical factors of production in subsistence farm based rural households. Its significance stems from the role it plays as a primary source of food, feed, access to credit, and social legitimacy and entitlement to development intervention by different actors. Hence, lack of access to land can easily make life complicated; and increase vulnerability to poverty and food insecurity.

This study investigates the coping livelihood strategies and food security situation of landless farmers in Dehana Woreda of the Amhara National Regional State. Dehana in particular and the northeastern part of Amhara Region in general is known for its structural food insecurity caused by an adverse combination of various environmental, demographic and institutional factors. On the other hand, though access to land is a constitutional right in the region, with increasing population pressure and virtually fixed amount farm land available in the area, the number of landless households has been building up since the last redistribution in 1990/91. The landless households are thus suffering from the double specter of landlessness and repeated drought induced famine. In the midst of these difficult situations, the landless have to devise certain strategies to continue to survive, which this research is supposed to pinpoint.

The study was conducted in three purposefully selected PAs by randomly selecting 181 sample households from whom the major quantitative data and information has been elicited through structured modular questionnaire. Similarly, participatory rural appraisal tools such as focus group discussion, key informant interview and researcher's field observation were used to generate qualitative data and information. Data generated from primary sources has been complemented by secondary sources. Quantitative Data processing was done using the Statistical Package for Social science (SPSS 12) computer software program. Descriptive statistics such as frequencies, mean, percentages, as well as inferential statistics like correlations, appropriate univariate and bivariate analysis using cross tabs and other models were applied to understand the relationship and associations between variables.

The result of the study indicated, inter-alia, nearly 35% of the total household heads in the sample PAs are landless. And 48% of the total landless sample households are food insecure unable to meet the minimum recommended calorie requirement per day for health functioning of an adult person. On the other hand, these people are still heavily dependent on agricultural activities to derive up to 78.2% of their annual income. Their inadequate endowment of necessary capitals such as marketable skill, seed money, lack of effective demand, and poor infrastructure and marketing development constrain the contribution of the nonfarm sector

On the ground of these and other findings various actions , inter-alia, strengthening the nonfarm sector through improving access to subsidized credit, provision of marketable skill, marketing and infrastructure development; proper targeted public employment generation schemes; distribution of closed areas; promotion of apiculture and small scale irrigation are recommended.

CHAPTER I
INTRODUCTION

1.1. Background of the Study

Food is one of the basic necessities of life; and access to it, as affirmed by various universal declarations, is a basic human right.

> *"We pledge our political will and our common and national commitment to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015." (Rome Declaration, 1996 ; cited in FAO, 2005: 1)*

The United Nations declaration of 1988 states that men, women and children have an inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties. Despite these intriguing promises, however, given the importance of hunger as a cause of poverty, illiteracy, disease and mortality, globally 800 million people are still hungry, 121 million children do not attend school, 11 million children die before reaching the age of five, 530 000 women die during pregnancy and childbirth, more than 1 million malaria deaths each year (FAO, 2005).

Maxwell (2003) indicated that out of the total hungry people in the world, the developing regions bore the brunt share of 95%. The situation in Sub-Saharan Africa where more than 35% of the population is undernourished is even much worse than anywhere in the world. Every year 175 million Africans suffer from shortage of food and absence of reliable access to food (ibid).

Ethiopia is endowed with enormous potential for agricultural production: 2.3- 3.7 million hectare or 20-30% of the current crop land is potentially irrigable; the country has abundant labor force and relatively fertile land, and it also has diversified ecosystem and biodiversity with huge potential of diversification (World Bank, 2007). The country had been self-sufficient in food production and was classified as net exporter of food grain till the late 1950s. According to Alemayehu (cited in Tesfaye, 1995), the annual grain export of the country to the world market

in 1947/48 was as high as 150,000 tones. Since the 1960s, however, the country's food production begun to fail to cope with the growing population; and particularly since the beginning of the mid 1980s, food production in the country begun to grow very slowly with the consequent decline in the per capita food production. Sharp decline in per capita food production has been observed in years 1984/85 (116 Kg), 1985/86 (124 Kg), 1991/92 (123Kg); and the average per capita food production during the period 1994 to 2000 was 135 Kg (Berhanu, 2004; Tesfaye, 1995). The figure indicates the wide gap between the food available in the country and the minimum amount of food (225Kg/person/year) required for healthy functioning of an individual.

In 1959, Ethiopia received the first food aid from the USA to avert the critical food shortage caused by drought and locust infestation (Alemayehu, 1988 cited in Getnet, 1995). Despite some fluctuations, flow of food aid has been increasing continuously since then .Currently the country is the largest food aid consumer in the world where on average 720,000 metric tons of food aid is delivered each year to bridge the gap between the food supply and demand (World Bank, 2007b). Furthermore, the country is forced to import on average 400,000 metric tons of food per annum to close the food gap (Berhanu, 2004).

About 5- 7 million Ethiopians are chronically food insecure in need of food aid every year. Over the past 20 years, this cycle has repeated itself, again and again. Each time, the numbers of hungry and destitute get larger, along with the amount of human suffering and disease; and compromising future generations of children (USAID, 2003). According to FDRE (2002), Food insecurity remains the most important problem in rural Ethiopia. Particularly the moisture deficit northeastern highland plateaus wherein the study 'Woreda' is found, and some pastoral areas are affected by chronic food insecurity. In general food poverty incidence in Ethiopia is about 50% (52% in rural areas and 36% in urban areas) (FDRE, 2002; Workeneh, 2008).

According to (World Bank, 2005; Devereux, 2000) failure of Ethiopian agriculture to meet the food demand of the population is attributed to various multifaceted factors including: natural disaster (un-reliable rainfall, flood); economic (poor marketing and infrastructure development, inadequate access to credit by farmers ; technical (low adoption rate of modern agricultural inputs); institutional (land tenure insecurity); political (civil conflict and war); demographic (high population growth and land fragmentation); and environmental (land degradation and soil erosion).

At any available poverty standard, Ethiopia has now become one of the poorest countries in the world. The following figures depict the grim picture of poverty in Ethiopia- under five mortality 123/1000 live births; infant mortality 77/1000 live births, maternal mortality 670/100,000, life expectancy at birth 54 years, access to safe drinking water 27% ; percentage of population below poverty line 44.2 (national poverty line); adult literacy rate is 49% for males and 34% for females, per capita income US$100 or US$720 in purchasing power parity terms in 2002, and 47% and 11% of the under 5 children are stunted and wasted respectively (USAID, 2003; MoH, 2005; DHS, 2005; World Bank, 2007a; Sosena, 2008).

Nearly 34% of the population of the Amhara National Regional State is estimated to have some sort of food security problem (ANRS: FSCDPO, 2007). Particularly, the north eastern part of the region, wherein the study area Dehana is located, is one of the most structurally food insecure areas in the country suffering from year after year relief aid embarrassment. The relentless rise of landless people in rural areas is one of the major challenges that currently confront the region's makers.

1.2. Statement of the Problem

Low input low output subsistence oriented rain fed agriculture still remains the dominant economic activity in Ethiopia contributing for 85% of employment, 45% of the national income, and more than 90% of the export revenue (World Bank, 2005). Nearly 90% of the poor in Ethiopia live in rural areas primarily engaged in agricultural activities (ibid).

In Ethiopia land is a major socio-economic asset and crucial factor of production. Access to land, particularly good quality land increases production significantly than any other factor inputs (Yared, 2002). As the majority of the farmers are subsistence producers, food security problem is closely linked to food production and hence to land. In the same way, lack of access to land also limits people's access to credit ; cash income from renting land; basic social services (education and health), and social networks (Tesfaye, 2003; Yared, 2002).

Both the 1995 constitution of the FDRE and the 2000 Amhara land administration and land use proclamation guarantees eligible rural households free access to land only with certain conditions. Land availability, however, is demographic sensitive; and given the over-riding population growth and relatively fixed nature of land, the demand for land by new claimants significantly exceeds the available land (Dessalegn, 2003; World Bank 2007a; Tesfaye, 2003). Rural population in Ethiopia grew from 15 million in the early 1950s, to 34 million in 1980 and to 54 million in 2000 (Dessalegn, 2003). On the other hand, the per capita landholding of rural people declined from 0.5 ha in 1960s to 0.21 ha in 1999 and 0.11 at present (World Bank, 2007a). Consequently, a land poor class is emerging with 20% of the rural population(ibid). Different studies come up with different figures on the size of landless population in different parts of Ethiopia ranging from 53% in Arsi (Degefa, 2003; cited in Tesfaye, 2003) to 7% in Waghimra, North Wollo and South Wollo (IDS, 2002; cited in Dessalegn, 2003). According to Birhanu and Feyera (2004) 12.8% of the households in Amhara region do not have access to land. Similarly Waghimra zone EPLAUA estimated the proportion of landless households in Dehana ''Woreda'' to be 40% of the total households.

Although there is still a hot debate among scholars concerning the long-term implication of the 1997 land redistribution in Amhara region, one point of consensus seems the distribution has achieved socially equitable outcomes by helping the landless to have access to this crucial productive asset (Devereux, 2000; World Bank, 2007b). However, the debate on the impact of periodic land redistribution on agricultural productivity seems unrelenting. Many Ethiopian and foreign scholars criticize government's inflexible tenure security and periodic land

redistribution as a cause for low agricultural productivity by discouraging investment on land (Dessalegn, 2004; Tesfaye, 2003; Devereux, 2000; World Bank, 2007b). Contrary to this, there are scholars who argue that the recent land redistribution in Amhara region had positive contribution on land productivity by increasing access to land of farmers who are interested or able to use purchased inputs such as seed or fertilizer (Benin and Pender, 2001).

Unlike most of the 'Woreda's in Amhara region where there has been land redistribution recently in 1997, the last land redistribution in Dehana 'Woreda' was conducted in 1990/91 just before EPRDF took power. EPRDF distributed to all men above 24 and women above 18 years old (Yared, 2003). All men and women who were below this age limits were not entitled to land during this redistribution. Most of these people have now formed their own families, yet lack access to one of the most crucial factor of production, land.

With poorly developed nonfarm sector, vulnerability in rural Ethiopia is associated with access to and control over productive resources such as land, the landless constitute one of the most food insecure portion of the community (FDRE, 2002). Landlessness poses a serious social, economic, and even political and intergenerational challenge to the country.

Despite the diversity and critical nature of landlessness problem, however, local level qualitative and quantitative scholarly literatures on the coping livelihood strategies and food security situation of the landless, as well as the institutional mechanisms through which these cold be strengthened are generally lacking. As far as the researcher's knowledge, most of the studies (Dessalegn, 2004; Tesfaye, 2003; Yared, 2002; Yared, 2003; Devereux, 2000; World Bank, 2007b; Dessalegn, 1984) give more emphasis to existing land tenure arrangements and its impact on agricultural investment and productivity. And research attempts on the scale of landlessness and the various survival strategies of these groups of the community, particularly in Amhara districts that did not undertake the 1997 land redistribution is often brief and lacks thoroughness. Hence, coping livelihood strategies and food

security situation of the landless households is still least understood and documented.

This study utilizes a cross-sectional research design to investigate the coping livelihood strategies, and food security situation of the landless households in Dehana 'Woreda'. The study area, Dehana, is chosen for the reasons, *inter-alia*, clear lack of research works on the subject in view of its remoteness and inaccessibility; absence of land redistribution in 1997 in the 'Woreda'; its chronic food insecurity; and long years of familiarity of the researcher with the area.

1.3. Objectives of the Study

General Objective:

The overall objective of the research is to explore the coping livelihood strategies and food security situation of landless households in Dehana 'Woreda', and to forward some achievable recommendations pertaining to the problem.

Specific Objectives:

The specific study objectives are:

- Assess the nature and cause of landlessness in the study area; and who are the primary victims of the problem
- Investigate whether the landless have any other mechanism through which they can fill the gap of lack of access to land
- Explore the different livelihood strategies and income diversifications pursued by the landless
- Assess the extent of food insecurity of the landless households
- Identify the major social and institutional opportunities and constraints that affect their endeavor to achieve food security
- To suggest alternative measures that could be instituted to support the coping livelihood strategies and food security of the landless

To meet the objective of the study, the following basic questions will be addressed as guides in treating the problem.

1. What is the nature, magnitude and cause of landlessness in Dehana 'Woreda'?
2. What alternative means of land acquisition the landless have other than through the formal institutional land redistribution by the PA?
3. What is the level of vulnerability of landless households to food insecurity? Is the level of vulnerability varying with different sexes?
4. What livelihood strategies are employed by the landless households in pursuit of their food security?
5. How coping livelihood strategies are differentiated between women headed and man headed?
6. What are the formal and informal institutions in the area to support the landless households in their effort to achieve food security?
7. What alternative measures can be instituted to support the coping livelihood strategies and food security of the landless?

1.4. Significance of the Study

Although chronic food insecurity is generally rampant in the country in general and in Amhara region in particular, the degree of vulnerability to food security varies among different groups of the society based on their social, economic, institutional, demographic, political backgrounds. This study focuses on the vulnerability, coping livelihood strategies and food insecurity of one of the most vulnerable group of the society, the landless. On account of this, the finding of the research will have relevance for development policy makers, practitioners, researchers, and academicians in making informed decision based on realities on the ground.

The research findings will further serve as a source of information and literature review for other researchers interested to conduct their study on livelihood strategies of landless people in the study area. More importantly, the research will narrow the knowledge gap that exist on the different livelihood strategies pursued

highlights empirical evidences on the factors influencing livelihood strategies and food security of rural people in Ethiopia. Chapter three presents methodology and procedure of the study including the design of the study, sampling technique, techniques of data collection and method of data analysis. Chapter four provides an overview of the study area including its demographic, biophysical, and socioeconomic information. Current policies and strategies of the country and the region are also highlighted in this chapter. Chapter five is devoted to the presentation, interpretation and discussion of the findings of the study; while the sixth and the final chapter recapitulates the study in terms of summary, conclusions and recommendations. Relevant information used in the study are also Annexed in the final part of the thesis.

CHAPTER II
REVIEW OF RELATED LITERATURE

This chapter analyses the major theoretical concepts and empirical findings of the two core issues of the study, livelihood and food security. For the purpose of smooth flow of ideas, operational definitions of key terms are also included in the first section. The second and third sections mainly concentrate on the discussion of the major theoretical issues regarding rural livelihood and food security. The fourth section explores some empirical evidences based on the findings of various studies in different parts of the country.

Generally, this chapter is intended to provide theoretical and empirical foundation for the subject under study and serve as a basis for the discussions in the coming chapters.

2.1 Operational Definition Words and Phrases

There are some words and phrases that are frequently used in this chapter. These words and phrases can be interpreted in different way depending on the context in which they are used. Thus to avoid ambiguity, this section presents the contextualized definition of words and phrases frequently used, yet not properly defined in the text.

Landless Households:- for the purpose of this study, landless households are households that do not access farm land through the formal institutional mechanism i.e. through the PA administration

Disaster: - natural or manmade phenomenon which may cause physical damage, economic lose, or threaten human life and well-being if it occurs in an area of human settlement (ANRS-DPPC, 2002).

Farm income:- refers to income generated from own-account farming whether owner- occupied land, or on land accessed through cash or share tenancy; broadly include livestock as well as crop income , comprise both cash income

and consumption in kind. ***Off-farm income:-*** typically refers to wage or exchange labor on other farms It includes in kind payments, income obtained from firewood, charcoal, house building materials, wild plant and so on. ***Nonfarm income:-*** refers to non-agricultural income sources; includes nonfarm rural wage, non- farm rural self employment (business income), rental income (obtained from leasing land or property), urban to rural remittance within national boundaries, other urban transfers (pension) international remittance, cash for work (Barret, Reardon, and Webb, 2001)

2.2. Rural Livelihood and Its Components:

A detailed picture of how people pursue food security and cope-with various risks and shocks is obtained through analysis of their livelihoods. Rural households have various sources of income and other resources including a range of farm, nonfarm and off-farm which together provide a variety of exchange entitlement for food and cash constitute livelihood system (Belayneh, 2002). Livelihood system incorporates not only current pattern of consumption but also long and short term objectives to avoid destitution or compromising future standard of living

The word livelihood may be used in different ways; but for the purpose of this study the following commonly cited definition in contemporary literature adopted:

> *A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets now and in the future, while not undermining the natural resource base (Chambers and Conway, 1992 cited in DFID, 2001).*

The sustainable livelihood approach is an analytical framework that helps us to understand how people change the different resources they access to livelihoods. The livelihood approach tries to portray the interrelation between people, the physical environment and government, and how these interactions affect livelihood strategies and food security with in a simplified framework possible (Degefa, 2005). The livelihood approach brings a wide range of interrelated factors that affect people's livelihood under a single framework. According to

Maxwell (2001) and DFID (2001), the livelihood approach has some distinctive attributes that makes it to be preferable in the analysis of the food security situation of households or communities; among this include – it is people centered, holistic, gives attention to contextual and institutional settings, emphasizes on various multiple type of capitals/resources, and understand livelihood strategies as multiple and dynamic. It also links macro- level policy and institutions with micro-level livelihood of households and communities. Sustainably is the most important quality of a livelihood system. Maxwell (2001) defines sustainable livelihoods as:

> *The ability of the livelihood system to deal with and recover from shocks and stresses, by means of coping (short-term, reversible response) or by adaptation (a long-term change in livelihood strategy), and also the ability of the livelihood system and the natural resource on which it depends to maintain or enhance productivity over time.*

The sustainability or vulnerability of livelihood of a household is therefore a function of the interplay between households access to different livelihood capitals (resources), the existing context (history, trend, vulnerability/shock), the mediating process (institutions, organizations, and social relations at work), the activities, and the resulting livelihood strategies that a household pursue (Scoones , 1998 cited in Degefa 2005; Eliis, 2000)

2.2.1 Livelihood Resources/Assets/Capitals

Livelihood assets are the building blocks from which goods and services for livelihood are derived. Capitals are the starting points in livelihood framework and through these capitals people undertake production, engage in labor market, and participate in reciprocal exchange with other households (Ellis, 2000). The ability to pursue different livelihood strategies depends on the basic materials and social, tangible and intangible assets people possess (Scoones, 1998 cited in Degefa, 2005). Hence access to and controls over these resources determine the livelihood of the people. There are five different capitals in the analysis of livelihood of households:

Natural capital:- *refers to natural (stock and flows) and environmental services. This includes- land, water, and biological resources that are used by people to generate their means of survival (Degefa, 2005; Maxwell, 2001*

Physical Capital: *- refers to assets brought in to existence by economic production process. These include producer goods like infrastructure and transport, irrigation works, land improvement like terracing, secure shelter and building, adequate water supply and sanitation, clean and affordable energy, access to information, as well as production equipments, tools and machines (Maxwell, 2001; Scoones cited In Degefa, 2005; DFID, 1999*

Human Capital: - *refers to labor availability, education, skill knowledge and health of the population or individuals (Maxwell, 2001. Human capital varies according to household size, leadership potential e, and skill level and health status.*

Social Capital: - *refers to social resources upon which people draw in pursuit of their livelihood objectives. These includes networks and connectedness (either vertical i.e. patron/client or horizontal between individuals with shared interest), social claims, social relations (trust, reciprocity and exchange that facilitate cooperation, reduce transaction costs and may provide the basis for informal safety net for the poor), affiliations and associations (membership of formalized groups) (DFID, 1999).*

Financial Capital:- *denotes the financial resources that people use to achieve their livelihood objectives. This include savings (cash, bank deposit, or liquid assets like jewelry and livestock, gold, food stock), regular inflow of money (pension, other transfers from the state and remittance) (IFID, 200).* Fungibility (ease of switching between uses) is the fundamental characteristics of these capitals (Ellis, 2000)

2.2.2 Context (Trends and shocks):

People's endeavor to achieve livelihood objectives is highly influenced by shocks and trends that are exogenous to household and local circumstance (Ellis, 2000). The most common forms of shocks that affect people's livelihood include

recurrent drought, pestilence, epidemics (animal and human), and hail storm. In addition to discrete events that occur at discrete point in time and space hazard or shock also include embedded features of physical, social, political and environment factors. Such trends include demographic, climatic, agro-ecology, social differentiation, technological, national and international economic trends, and environmental trends have also direct and indirect bearing on the livelihood of the rural people (IFID, 1999).

2.2.3 Mediating Processes (institutions, organizations, and Social relations)

Institutions (rules and norms which govern individual and group behavior) and organizations (agencies that implement institutions like government, private sector, NGO) play critical role in people's pursuit of their livelihood objectives since they determine households' and individuals' access to the five livelihood capitals, term of exchange between different capitals, and the return to any given livelihood strategies (Maxwell, 2001; DFID, 1999). Institutions are rule of the game or standard operating practices that shape the behavior of organizations and make them predictable. Institutions range from social arrangements backed by moral pressure or sanction to formal laws and administrative structures. According to North (1990 cited in Degefa, 2005; Ellis, 2000):

- Social Relation comprises factors like: gender relations, casts, class, age, ethnicity and religion.
- Institution include formal rules, conventions like laws, land tenure arrangement, property right, common property arrangements and informal code of behavior (norms, value systems). Institutions makes human interaction stable by minimizing uncertainties and increasing trust (North, 1990 cited in Ellis, 2000)
- Organizations:- are group of individuals governed by common rules /institution and pursuing common objective (ibid). Example of organization include: government agencies (e.g. Police, different ministries, etc), NGOs, associations, and private companies.

Organizations (structures) on the other hand are the hardware (government, Private and NGOs) that set and implement policies and legislation, deliver services, purchase, trade and perform all manner of other functions that directly or indirectly affect people's livelihood. Structures or organizations make institutions to function (e.g. traders make market to function; courts enforce legislations etc)(DFID, 2001).

2.2.4 Livelihood Strategies:

Livelihood strategy is the term used to denote the complex activities and choices that people undertake in order to achieve their livelihood objectives (DFID, 2001; Ellis, 1998 cited in Misganaw, 2008). Livelihood capitals mediated by different exogenous factors (trends and shocks) and social and institutional factors result in the adoption or adaptation of livelihood strategies. Livelihood strategies are dynamic process where people combine different activities to meet their different needs at different time. Maxwell (2001) categorize livelihood strategies of rural people in to four: ***Livelihood intensification***– where the value of output per hectare of land or per animal is increased through use of more labor, technology or capital; ***Livelihood Extensification*** - where more land or animal is brought in to the production process without necessarily changing labor, technology or capital; ***Livelihood Diversification*** – where households diversify their economic activity from agriculture to off-farm and nonfarm activities; ***Migration***- where people move away from their initial source of livelihood

Livelihood strategies are dynamic overtime due to change in trends, shocks, unexpected events, status of asset and social factors (Degefa, 2005). Different livelihood strategies are accessible to different households depending on endowment of different capitals/resources; contextual influences outside the control of individual communities (agro ecological setting, climate, national and international influences); access to communication and infrastructure, and other factors that affect the choice of livelihood strategy (Maxwell, 2001. The degree of stability of a livelihood system is closely linked , inter-alia, with substitutability of

assets and activities; the lesser the substitutability of assets and activities, the more vulnerable the livelihood system will be due to shocks, since a sudden change in a single asset or activity can't be compensated by redeployment or switch between them (Ellis, 2000).

2.2.5 Livelihood Diversification

Livelihood diversification means a process by which rural families construct diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standard of living (ELLIS, 2000).

Peoples' ability to diversify their livelihood sources depend on the contextual setting, access to and use of different capitals, and the way in which institutional arrangements restrict or encourage certain behaviors (Maxwell, 2001). According to Deshinkar (2004 cited in Misganaw, 2008), diversification is about response to risks particularly related to small land holding and landlessness, growing environmental risks such as drought, shrinkage of ground water, inappropriate policies (lack of support to agricultural price, reducing input subsidies, and higher commodity price). On other hand, Maxwell (2001) argue that diversification could be either an indication of vulnerability or it may be the path to accumulation and investment in the future, leading to a cumulative improvement in livelihood outcomes in the future. Degefa (2005) on the other hand, sees diversification of livelihood as 'necessity' rather than 'choice' as most rural people can't survive on a single source of livelihood.

Ellis (2000), identified the following reasons for rural livelihood diversification: **Seasonality**:- i.e. the variation in income to labor time during the year in both farm and off-farm labor markets, which force people to diversify income to smooth household's consumption. **Risk:** One form of household's risk management is spreading income streams in anticipation of failures of in individual income stream. Risk management is proactive (ex ante) income management and is voluntary. **Credit Market failure:-** credit facilities are poorly developed in many rural areas which provide another motivation for diversifying livelihood with the

aim of utilizing cash generated outside agriculture in order to purchase agricultural inputs and farm equipments

Improving human capital through investing on education and training; improving working of market, flow of information, and mobility of people through investment on infrastructure; increasing access to credit; creating enabling environment for local enterprise; and improving targeting and safety net for the vulnerable (landless, disabled, elderly, etc) are some of the mechanisms to encourage livelihood diversification.

Coping, Vulnerability and Adaptation:- Coping strategies are sequence of survival strategies to crisis or disaster. Coping is involuntary response to disaster or unanticipated failure in major source of survival. Coping is reactive (ex post) response to shock or disaster (Carter, 1997 cited in Ellis, 2000). Coping often involve sequence of strategies (search for new income sources in the early stage) to sale of asset (at latter stage). The latter may irreversibly change future livelihood pattern of the household.

Chambers (1989 cited in Ellis, 2000) is defined vulnerability as: "*A high degree of exposure to risk, stress and shocks; and proneness to food insecurity*". Vulnerability of a household to risk is a function of the degree of external threat i.e. shock, stress and the capability of the household to withstand it, which is determined by asset base, food store, support from kin or community and so on. The ability of a livelihood system to 'bounce back' from stress or shock, what is known as resilience is determined by the degree of diversity of the livelihood system. Sensitivity on the other hand is the magnitude of a system's response to an external event. When a livelihood system is sensitive, a minor shock or stress causes widespread problem on the population (Ellis, 2000). Factors such as land tenure insecurity, insecurity of wage employment, social obligations such as dowry, wedding, bride wealth and funeral can add to risks and increase vulnerability (Ibid).

Adaptation is a permanent change in the mix of livelihood strategies irrespective of the year in question (Davies, 1996 cited in Degefa, 2005). A peasant household that sells small ruminants to buy food in time of seasonal or transistor food shortage is said to be coping with the problem; whereas a peasant without oxen, but holding some land, who either sharecrop or lease his land to someone in the community and earn income from occasional wage labor is said to be adapting (Degefa, 2003 cited in Degefa, 2005).

2.2.6. Livelihood Activities and Income:

According to (Ellis, 2000), income comprises both cash and in kind contribution to the material welfare of the individual or household deriving from a set of livelihood activities. The cash earnings component of income include items like crop or livestock sale, wages, rent, and remittance; whereas the in kind components of income include consumption of own farm produce, payment in kind, and transfer or exchange of consumption that occur within rural household, or between urban and rural households (ibid). On the basis of the resources required to generate, their seasonality, and their location nearby or remote; households' income is classified in to farm, off-farm and nonfarm income sources.

Migration:- Ellis (2000), migration as one way of diversifying rural livelihood, refers to one or more family members leave the resident household for varying period of time, with a view to make new and different contribution to its welfare. Ellis (2000) identified four type of migration: *'seasonal migration'* which refers to temporary migration that occurs in correspondence to the agricultural season i.e. moving during slack time and coming back during pick periods. *'Circular migration'* – refers to temporary migration that is not necessarily associated with agricultural slack times; and that may be for varying durations sometimes directed by cyclical need for labor in nonfarm labor markets. *'Permanent migration' (rural – urban)* implies a family member makes a long duration move to urban centers and set up residence at destination. *'International migration'* – is when a family member moves either permanently or temporarily abroad or beyond the national boundary.

2.3. Conceptual Analysis of Food Security

2.3.1. Evolution of Food Security Thinking

The concept of food security evolved through various stages due to changes in development thinking in general, change in level of analysis and change of the food problem in the real world (Maxwell, 2001). The world food conference in 1975 defined food security as: *"Availability at all times of adequate world supplies of basic food-staff ... to sustain a steady expansion of food consumption ... and to offset fluctuations in production" (UN, 1975 cited in* Maxwell, 2001)
The main concern during the 1970s was therefore food availability at national or global level either through own production or import. Latter it has been realized that food availability at national and global level (supply security) can't guarantee food security at household level (consumption security) (Maxwell, 2001; Braun, 1992 cited in Fuad, 2001).

The shortcomings of the early understanding of food security causes for the development of new insights that shift the understanding of food security form global and national level to household level (Debebe, 1995; Degefa, 2005; Maxwell, 2001). Amartya Sen is credited as the pioneer economist initiating the development of the concept of access and 'entitlement'. According to him, households may suffer food insecurity in a region or a country where adequate food is available as a result of lack of access either due to their inability to produce by their own or purchase food, i.e. because of failure in entitlement 'endowment' or 'exchange' entitlement (Degefa, 2005). Therefore, both availability of food and access to food are two essential determinants of food security. Although the first is the necessary condition, yet it does not necessarily ensure the latter. Thus, in the 1980s, the focus of unit of analysis shifted from national and global (macro) to household (micro) level; and from aggregate food supply to access.

Despite its considerable relevance, Sen's 'entitlement' theory has never ended the debate on understanding of the concept of food security, particularly about

whether the unit of analysis should be the individual or the household. The theory fails to consider intra-household distribution of food. According to Maxwell (2001) two schools of thought has emerged: those who advocate household as a unit of analysis and those who placed intra-household power and resource allocation issues in the front line of analysis and focused instead on individual food security. As access to food by individuals in a household is primarily linked to the control they have over household resources and the access they have to household income. In view of this recent research favors the view that food security should be viewed at the individual level (ibid).

Shift from 'food first' to livelihood perspective

The conventional wisdom of food security view food as a primary need, a lower order need in Maslow's (1954) hierarchy of human needs. However, recent studies indicated that people are quite prepared to tolerate considerable degree of hunger to preserve assets and future livelihood (Degefa, 2005; Maxwell, 2001). De Waal 1991 (cited in Maxwell, 2001) found that in 1984-5 famine in Darfur, Sudan, people chose to go hungry in order to preserve seed for planting, cultivate their own fields or avoid having to sell an animal. Other studies particularly in the context of analyzing the sequence of coping and adaptive strategies people follow in time of crisis are in line with this finding.

Thus, Oshaug (1985 cited in Maxwell, 2001) has argued that:

> *Society can be said to enjoy food security is not only one which has reached [a] food norm ..... but which also developed the internal structure that will enable it to sustain the norm in the face of crises threatening to lower the achieved level of consumption.*

2.3.2 Components of Food Security

As many as 32 definitions of food security are identified by Maxwell (2001) most of which focusing on the supply of food sufficiency at national level. The most widely accepted definition of food security in recent literatures, however, is the one given by the World Bank. The World Bank (1986) defined food security as: "access

to enough food by all people at all times for healthy and productive life without undue fear of losing it."

According to this definition food security comprises the following key components:

'Sufficiency': – the calorie required for an active and healthy life (Maxwell and Frankenberger, 1995 cited in Eshetu, 2000). **'Access'**: - adequate access to food by all members of the household at all times either from own production, purchase, exchange or gift; or combination of these. Access can be achieved irrespective of household's food sufficiency in food production; what is important is household's ability to generate enough income, which together with own production can be used to meet household's food need. Sen identified four major legitimate ways of entitlement: 'trade based entitlement" (where the individual can buy with commodity/cash one owns); "production based entitlement' (ownership of what one produces either through own resource or hiring from others); 'own labor entitlement' (sale of one's own labor); and 'inheritance and transfer entitlement' (i.e. the right of individuals to own resource willingly given by others – inheritance, gift, aid, pension et).

'Security': - the balance between vulnerability, risk and insurance. Risk to food entitlement could originate from a number of sources such as: weather variability, food production and supply variability, variability in price, health hazard and morbidity, employment and wage variability. In general, source of risk could be natural, political, social, cultural and economic. **'Time':** - it refers to the duration over which a household could face food shortage/insecurity. "all times" in the definition of food security refers to ability of the household to secure food sustainably throughout the year even during hard seasons. ***Chronic food insecurity*** - refers to a constant failure to food access, which is the result of overwhelming poverty and lack of assets. Chronically food insecure households are households that fail to meet household's food requirement because of either their insufficient production or limited purchasing power (FDRE, 2002; Fuad, 2001, Debebe, 1995). On the other hand, ***Transistor food insecurity***:- refers to temporary decline in food

supply, which is caused by natural and manmade disasters such as war, drought, pestilence, etc (FDRE, 2002; Fuad, 2001). Transitory food insecurity is further divided in to cyclical and temporary food insecurity. Temporary food insecurity occurs for limited time due to unforeseen factors such as drought; whereas cyclical or seasonal food insecurity occurs when there is regular pattern in the periodicity of inadequate access to food due to logistical difficulties or prohibitive costs in storing food or borrowing (Maxwell and Frankenberger, 1992 cited in Eshetu, 2000).

Similarly, Dejene (2004), FAO (1998), and Workneh (2006) mentioned components of food security as: ***Availability*** (the presence of sufficient quantity of food to all households and individuals in a county either through households own production, other domestic output, or commercial import and food aid. Availability in general refers to the physical access to food. ***Access***:- food access addresses the demand side for the food. Access is achieved when households and all individuals within them have adequate resources to acquire appropriate food for nutritious diet i.e. purchasing power of households and individuals. Access is influenced by economic factors, physical infrastructure and consumer preference (http://faostat.fao.org). ***Use/Utilization:*** which refers to proper biological use of food; requiring a diet providing sufficient energy and essential nutrients, potable water and adequate sanitation.

2.3.3. Causes of Food Insecurity

According to Maxwell and Frankenberger (1992 cited in Eshetu, 2000) risk to food insecurity could emanate from natural causes (such as drought, human and animal epidemic, flood, earthquake), institutions and policy failure (tax, removal of subsidy, property right), market failure, lack of employment opportunities and change and failure in community obligations. Based on their degree of response to different shocks, households are divided in to three categories: *enduring Households* (households that maintain household food security on a continuous basis); *Resilient Household (*are households which suffer shocks, but recover very

quickly); and *Fragile Households* (are households increasingly insecure in response to shocks.

2.3.4. Determinants of Food Security at Household Level

According to (IFAD, 1992 cited in Debebe, 1995; Getachew, 1995 cited in Eshetu, 2000) household food security is determined by a number of interrelated factors starting from immediate factors that affect food supply at household level to basic factors which condition the overall economic system of a given country. Among the most important determinant factors of food security at household level include: access to different resources such as social support systems, land, presence of adult labor in the family, physical capital (functioning of market and infrastructure), cash, livestock holding; agro-ecology, and level of diversification (presence of nonfarm income).

Similarly food production at community level is determined by climate (especially rainfall), characteristics of physical environment (topography, drainage, agro-ecology, soil, vegetation) and availability of common property resources (ANRS-DPPC,SERA 2002)

2.3.5. Indicators of Food Security:

According to Debebe (1995) food security indicators are divided in two: process and outcome indicators

a. Process Indicators: - process indicators provide estimates of food supply and food access. These are further disaggregated in to supply indicators and access indicators. *The* ***supply indicators*** provide the general picture of a given area and the likelihood of shock or disaster that affect household food security; these include: agricultural production, information on natural resources, meteorological data, institutional development, and market infrastructure. These are more aggregated relevant only to see the overall situation of a given area in context, and difficult to monitor food security situation at household level (Debebe, 1995). ***Access indicators,*** on the other hand, are quite effective to

monitor food security at household level as they reflect the various strategies households employ to meet their food requirement. It means availability of food for household consumption from either own production or from other means like off-farm income, community support, and remittance (Debebe, 1995).

b. Outcome Indicators:- include all direct and indirect indicators of household food consumption. These include: household budget and expenditure, food consumption frequency, nutritional status and subsistence potential, anthropometric results. Unlike supply indicators they can effectively serve to monitor the food security situation at household level. However, anthropometric results may sometimes give ambiguous results as they may not necessarily indicate the level of food crisis because of the impact of other factors such as health on nutritional intake (Ibid).

As outcome indicators give direct and more realistic information about the food security situation at household level, this study tried to measures food security of households based on the ability of a household to acquire the minimum calories required per adult equivalent per day (i.e. 2200 Kcal/AE/day) or 225 Kg of cereal /year.

2.4. Empirical Review

From the discussions above, it is hoped that the impression on how institutions play critical role in people's pursuit of their livelihood objectives through determining households' and individuals' access to the livelihood capitals, term of exchange between different capitals, and the return to any given livelihood strategies are already established. On the basis of this understanding; and to view the issue from the perspective of the subject under discussion, a brief account of one of the most important institution, land tenure, and how it evolve in Ethiopia, and the way it affects people's livelihood is highlighted below. Similarly, with a view to give empirical impetus to subject under study, efforts have been made to scan the related macro and micro level study findings on the livelihood strategies and determinants of food security status of rural households in Ethiopia. Accordingly,

the later sections are devoted to presentation of some empirical study findings at household level.

2.4.1 Land Tenure and Livelihoods in Ethiopia

In predominantly agrarian societies like Ethiopia, land is the primary means of production used to generate livelihood for households. It is also the main asset that farmers have to further accumulate wealth when possible, and equally importantly, what they transfer in the form of wealth to future generations (EEA, 2002). Land is a limiting factor in production, both its quantity and quality. Access to land, particularly good quality land, increases production more strongly than any other factor input (Tesfaye, 2003). Land also has a collateral value and enables land holders to gain access to credit or cash to meet production and consumption needs. Further more land ownership also has a bearing in determining social status and degree of connectedness in society networks and decisions that are critical to peoples livelihood (ibid).

Therefore, the size and quality of land households own, the feeling of security they have on their holdings, and the process through which land disputes are settled significantly affect household's income, their incentive to work and invest, and their desire to use their land in sustainable manner (EEA, 2002).

2.4.2 Evolution of Land Tenure in Ethiopia

A. Land Tenure pre 1974 (The Imperial time):-The land tenure system in Ethiopia during the imperial time was one of the most complexes in the world – perhaps as many as twenty different types (Desalegne, 1984). However the most commonly recognized tenure systems were the 'rist'/kinship, private, church and state holding systems (ibid).

'Rist' tenure system was most prevalent in the north. In the 'rist' system men and women are entitled to access land in a given farming community if he/she was able to establish descent from or ancestral relationship with the one who is recognized the original owner of the land or founder of the community (Desalegn, 1984; EEA, 2002). In the *'rist'* system individuals were entitled to usufruct right over

their holding during their life time, but could not be transferred to others by sale, mortgage, or gift. Up on death of the owner the land has been distributed equally to his children. Another tenure system often confused with 'rist' is 'Gult' . According to EEA (2002) 'gult' is not a right on the land, rather a right to tax the benefits from the land usually given to those who were recognized to have performed loyal service to the crown; 'gult' is not transferable, while 'rist' is transferable in the form of rent and is also inheritable. Reduced landlessness and tenancy are cited as the positive attributes of the system; on the other hand, fragmentation of farm holding and persistent litigation are the negative attributes of the system (EEA, 2002; Desalegn, 1984).

Private Tenure System: was most dominant in the southern part of the country, and was created by way of land granting by the crown to those members of the army who went from the north and those who were loyal to the regime in the conquered areas (EEA, 2002). Under this tenure system land was sold and exchanged, but as land was originally the property of the state, the system is quite different from the western freehold system.

Church ownership of land:- The Ethiopian Orthodox Church was an extensive land holder both in the southern and northern part of the country. Desalegn (1984) estimated that the total land held by the church during the imperial time was about 10 – 12%. Church land (Semon land) in theory belonged to the state but the right of which had been granted to the church to enable the church support its activities.

State ownership of land:- the state held vast area of land throughout the country, particularly in the south. Some of this land was leased out to individual cultivators that made a large number of tenants dependant on state land. Certain portion of this land was given to ex- or incumbent officials, war veterans, patriots, persons who did meritorious service to the crown in lieu of pension of salary (Desalegn, 1984).

In general the land tenure system of the imperial regime was characterized by lack of necessary legal framework, absolute arbitrary control of land rights, and

lack of organized and transparent land administration. It was considered as one principal cause of hindrance to the countries agricultural development, as well as cause of political grievance which eventually resulted in overthrow of the regime (EEA, 2002)

B. Land Tenure During The Military Regime (1975 - 1991):- According to Desalegn (1984), The first priority of the military regime after it took power in 1974 was to abolish the imperial tenure system and enact new radical land reform. The measure was meant to alter the then agrarian relation and liberate the peasantry from the oppressor feudal lords. Some of the provisions of the proclamation (proclamation No. 31/1975) include: public ownership of rural lands, distribution of private land to tiller, prohibition of transfer of use rights by sale, exchange, succession, mortgage lease, except upon death and only to the wife, husband, or minor children of the deceased. The maximum ceiling that a household can possess was set at 10 hectare; and no able adult person was allowed to use hired labor to cultivate his holding (Desalegn, 1984; Yigremwe, 2002; EEA, 2002, Benin and Pender, 2001). The law acknowledges only user or usufructuary possession, of the farmer over his holding upon condition like permanent residence in the locality and ability to continually cultivate the land. The responsibility of administering rural lands was given to the peasant associations that were organized on an area of about 800 hectare.

In general the reform has brought fundamental changes in the land tenure system of the country; abolished landlordism, tenancy, and the hiring of labor. On the other hand, however, there is a general consensus that the land tenure system during the 'derg ' has caused diminution and fragmentation of land holding, tenure insecurity and all its consequences, land degradation, and inefficient allocation of land by way of restrictions on land transfers and to some extent lack of appropriate land use and administration (EEA, 2002).

C. Land Tenure Policy of the EPRDF government (Since 1991):- Since the fall of the military regime in 1991, the new Ethiopian government allowed land leasing

and inheritance (subject to restrictions), but the prohibition of land sales has continued. The 1995 constitution exclusively vested the right to ownership of rural land and urban land as well as of all natural resources in the state and in the people of Ethiopia. According to Desalegn (2004), the land tenure policy of the EPRDF government is basically a continuation of the land tenure policy of the previous regime except some improvements such as right to bequeath, short term leasing or sharecropping and hiring of labor. The current policy also allows transfer of land to heirs albeit some regions put conditionality (for instance Tigray's 1997 land proclamation allows inheritance to only siblings who are dependent on their parents.

However, still land is not subjected to sale, mortgage and other means of exchange. Since land belongs to the state, only movable and immovable properties developed on land are treated as private and hence transferrable (Desalegn, 2004; EEA, 2002).

2.4.3 Debate on the Current Land Tenure System of Ethiopia

The Ethiopian government and the ruling party strongly advocate state ownership of land with the following justification: private land ownership will lead to concentration of land in the hands of few people who have the ability to buy resulting in the eviction of poor peasants and thus aggravating landlessness eventually leading to massive rural – urban migration. It further argues that land concentration and widespread landlessness will give rise to wastage of capital and labor (Desalegn, 2004; Tesfaye, 2003; EEA, 2002).

On the other hand, many scholars (Desalegn, 2004; Tesfaye, 2003; EEA, 2002) firmly oppose this view with the following justifications:

- The argument that claims – farmers will sale their land and end up landless without restraining hand of the state, is founded with little or no evidence either in the country or elsewhere in the world (EEA, 2002);
- Periodic redistribution of land to address the problem of landless youth who are coming of age will end up with fragmentation and progressive leveling

down of holding. And hence, state ownership can't be the solution for landlessness problem (Desalegn, 2004);

- The current land tenure arrangement doesn't guarantee tenure security of farmers. This will undermine incentive for long-term investment on the land, and sustainable land use; which in turn will have detrimental effect on agricultural productivity and conservation of natural resources (Desalegn, 2004; Tesfaye, 2003; EEA, 2002);
- The current land tenure system discourages labor mobility as permanent residence is one of the conditions to access PA land (Desalegn, 2004);
- Attempt to accommodate the increasing number of new claimants that come of age forces PAs to parcel up and distribute grazing land, which results in serious shortage of grazing land(Desalegn, 2004);
- Since the ultimate owner of land is the state, banks are not willing to held land as a collateral, which in turn foreclose farmers' access to credit (EEA, 2002);
- The continuous division and sub division of the land preclude widespread dissemination of improved technologies(EEA, 2002);
- The land system places the rural youth who are coming of age in a disadvantaged position and create conflict and tension among household and communities (Tesfaye, 2003);
- Restrict full functioning of land markets (Tesfaye, 2003)

2.4.4 Rural Land Markets and Their Role in Factor Allocation

According to Desalegn (2004), farmers have a dynamic view of land tenure in that they devise a mechanism by which land moves to those who are likely to make use of it more productively even during the past regime when all types of land transfer were prohibited. With the diminishing ability of the peasant associations to address the demand for land by new claimants (i.e. in the face of ever rising population growth) the significance of rural land transaction is gaining momentum.

Tesfaye (2003) categorized farmers in a peasant association in to three : those who are self provisioning in all necessary factors ('autarky farm households), land

constrained households to fully utilize labor and traction labor, and land abundant but with limited labor and traction labor. Transaction is therefore made between the last two categories. The demand for land comes from land poor farmers with enough traction power, labor, and seed and wants to increase an area of land operated. On the other hand, the supply is mainly from poor resource constrained farmers who own land but lack other necessary factors such as labor and traction power and share-out their land. This include the poor, female and elderly headed households, and households constrained by ill health, who rent out land due to necessity (Yared, 1995 cited in Tesfaye, 2003; Desalegn, 2004)

According to Desalegn (2004) the most common forms of land transfer in Ethiopia include land rentals, sharecropping, short-term contract, land loan, limited "lease", and occasionally mortgage. Non-market long-term land transfers include inheritance and marriage endowment. Overall, rentals and sharecropping dominates rural land transaction in Ethiopia.

Despite the significance of informal land markets in resources allocation and efficiency, addressing the needs of the landless, enabling industrious farmers to increase their farm operation, offers reliable income source for right holders and, to a certain extent, correct the deficiency of the land tenure policy, they tend to favor farmers with cash, farm skill and experience. And, access to land rent is becoming difficult for newly emerging farmers with little farming experience and skills, and cash (Tesfaye, 2003; Desalegn, 2004).

2.4.5. Household level Empirical Review

Yared (2002) in his qualitative study in two 'Kebeles' of Tarmaber 'Woreda' North Shoa found out that large `proportion of households that fall into severe and long-term poverty are those that have no or minimum amount of land, and those who lack fully functioning male labor. He further noted that though lack of draught power is correlated with poverty, those who have sufficient labor can engage in different exchange arrangements to maintain their productivity and avoid poverty. Similarly he noted that resource exchange and mutual social support

mechanisms that are often reciprocal or collaborative in nature are critical in enabling households' to fill their factor deficiencies. The poor and resource deficient farmers are often beneficiaries of such arrangements which are source of insurance in time of crisis.

Getachew (1995, cited in Eshetu 2000) use Logit model to identify factors determining famine and food security at household level in six rural PAs in Ethiopia. And he found, among other things, those households with larger land size, livestock holding and fertilizer use to be better placed in terms of food security. He noted that households with little or no farm land and big family size are more prone to food insecurity than those with more land and less family size. Similarly Yared (1996) arrived more or less similar conclusion in his qualitative study in Waghimra and South Wollo zones on how people become destitute. He underscored the underlying causes for people to slide down, remain or emerge from destitution and poverty to be: shocks (that cause repeated crop failure), poor access to productive assets such as land and unforeseen events like death of a husband.

Tegene, Mulat and Roth (1999 cited in Eshetu, 2000) in their study on food availability and resource situation in nine 'Woreda's of East Gojjam and South Wollo zones, found out that 48 and 67% of households in East Gojjam and South Wollo respectively got per capita calorie below 2000. Their regression analyses suggest difference in resource endowment, demography, access to services and nonfarm activities determine the households' food security status. Accordingly landholding size, oxen holding, fertilizer and seed application showed significant increase in food availability.

Itana (1995) in his evaluation of 'the dimension of rural poverty in Ethiopia: preliminary observation' based on secondary sources, found out how rural communities relate vulnerability to ownership of basic resources such as land, oxen, livestock and labor. ITAD (1994 cited in Itana, 1995). He also stated 25.6% of the households in Meri-Jeju awraja are landless. On the other hand, Belayineh (2002) in his qualitative study in rural areas of Kersa and Babile 'Woreda's found

out that access to land alone i.e. irrespective of quality, doesn't contribute to the household food security. He also suggested more equitable access to resources, particularly oxen and credit is vital to the rural poor and women to improve their way of living.

Adane and Bezabih (2003) in their quantitative study on rural poverty in Bereh-Aleltu district of Oromyia region used the logit model to assess the relative impact of different household variables. The outcome revealed that family size has positive association with the probability of being poor; whereas off-farm income, livestock ownership, and completion of primary education have shown significant negative correlation with the probability of being poor. A more or less similar result is achieved by Ayalneh and Benedikt Korf (2003) in their quantitative analysis of rural poverty in three 'Woreda's (Alemaya, Hitosa and Merhabete). According to their findings the probability of being poor is negatively associated with age, educational status, land holding per adult equivalent, and number of oxen. On the other hand, the probability of being poor is positively associated with dependency ratio, household size and sex (i.e. the probability of women heads to be poor is higher than that of men heads)

The ANRS:DPPC (2002) in its comprehensive qualitative and quantitative vulnerability profile study in Sekota 'Woreda' of Amhara National Regional State found that lack of land, oxen and seed are the major limiting factors of agricultural productivity. It also further noted that about 8.3% of the total sample households were landless during the time of the study.

According to FDRE (2002), the following groups of people are vulnerable to chronic insecurity in rural Ethiopia: landless/land scarce farmers, oxen-less, resource poor farmers; poor pastoralist; households headed by elderly, disabled & sick persons; female headed households ; and households of newly established settlers. The same report also indicates that farmers in drought prone areas, pastoralists, and less resource poor farmers vulnerable to shocks are the groups affected by transitory food insecurity.

In general , from the above empirical findings, we can easily understand how access to a bundle of resources such as land, draught power, human capital, social and economic infrastructures, determine the degree with which households are vulnerable to poverty and food insecurity. It is often assumed that the more the income of a household is diversified, the lesser the household is vulnerable to seasonal shocks. In this connection the other important issue worth mentioning is the level of diversification of income.

MOLSA (1997; cited in Misganaw, 2008) conducted a survey study in five regions (Amhara, Tigray, Oromiya, SNNPR and sedentary farming areas of Afar) on the contribution of off-farm and nonfarm income to household income. The result indicated close to 44% of households have reported to participate in some sort of off-farm and nonfarm activities, yet the contribution to the total household income was just 10.2%. The World Bank (2007b) emphasized the general lack of diversification in the livelihood of rural people in Ethiopia. It further mentioned that the result of household survey in Ethiopia showed the contribution of nonfarm income to the total household income was just 24%, which is the lowest of any country for which data are available.

Yared (2001) *in his Review of Livelihood Strategies and Food Security Policy of Ethiopia* found out sequence of coping strategies adopted by farmers. At the first stage of crisis farmers tend to intensify mechanisms that are part of their ongoing economic strategies that entail little impact on households' capital and productive resource. These include sale of some livestock, agricultural employment, sale of wood and charcoal, grain loan and reduction of food consumption. When the crisis worsen and when these actions no longer suffice, households progressively begin to take mechanisms that cause decline in household's resource and long term viability (Devereux, 1993 cited in Yared, 2001). These mechanisms may include sale or slaughter of critical productive and reproductive animals such as oxen or cows, sale of agricultural implements, sale of house, clothes and other valuables. Such sequencing of mechanisms is apparently dependant on resource endowment and demographic

characteristics of a household; market context and available opportunities in the rural economy (ibid)

Based on all these theoretical and empirical grounds, this particular research tries to investigate the coping livelihood strategies and food security situation of a specific and perhaps most vulnerable groups of the community, i.e. the landless. The subject of all macro and micro level studies stated above was the overall community; hence this research draws its relevance from the fact that it focuses on a distinct group of the community that are lacking the most crucial factor of production in subsistence agricultural based economy of the rural Ethiopia.

To summarize, this chapter presented the basic theoretical and empirical analysis of the two core issues of the study, livelihood and food security. The chapter begun by defining major words and phrases followed by discussion on the different components of rural livelihood: the livelihood capitals, context and trends, institutions and organizations and how they influence people's decision in pursuing their livelihood objectives. The chapter further highlighted the different views on the concept, components, determinants and indicators of food security, and other related matters. With this understanding of the two major issues, the next chapter concentrates on how the research problem is approached and the methodology used.

2.5 Conceptual Framework

This study adopts the livelihoods framework developed by DFID (2001) as the framework offers an opportunity for a comprehensive view of different components of rural livelihoods, the interaction and interdependence between these components in the most simplified form possible. It helps to orderly view the complexities of different livelihood components and makes clear the many factors that affect livelihoods.

Although this livelihood framework may not provide a recipe for solving problems of all causes and effects in rural poverty reduction, it does, however, suggest a way of organizing the policy analysis of livelihoods that identifies main components (assets, mediating processes, context, and activities), encourages thinking about the critical link between them (Ellis, 2000). DFID's livelihood framework view people in the context of vulnerability; within this context people have access to various livelihoods capitals that get meaning and value through the prevailing social, institutional and organizational environment. This environment also influences the way people combine and use livelihood assets (livelihood strategies) in pursuit of their livelihood objectives.

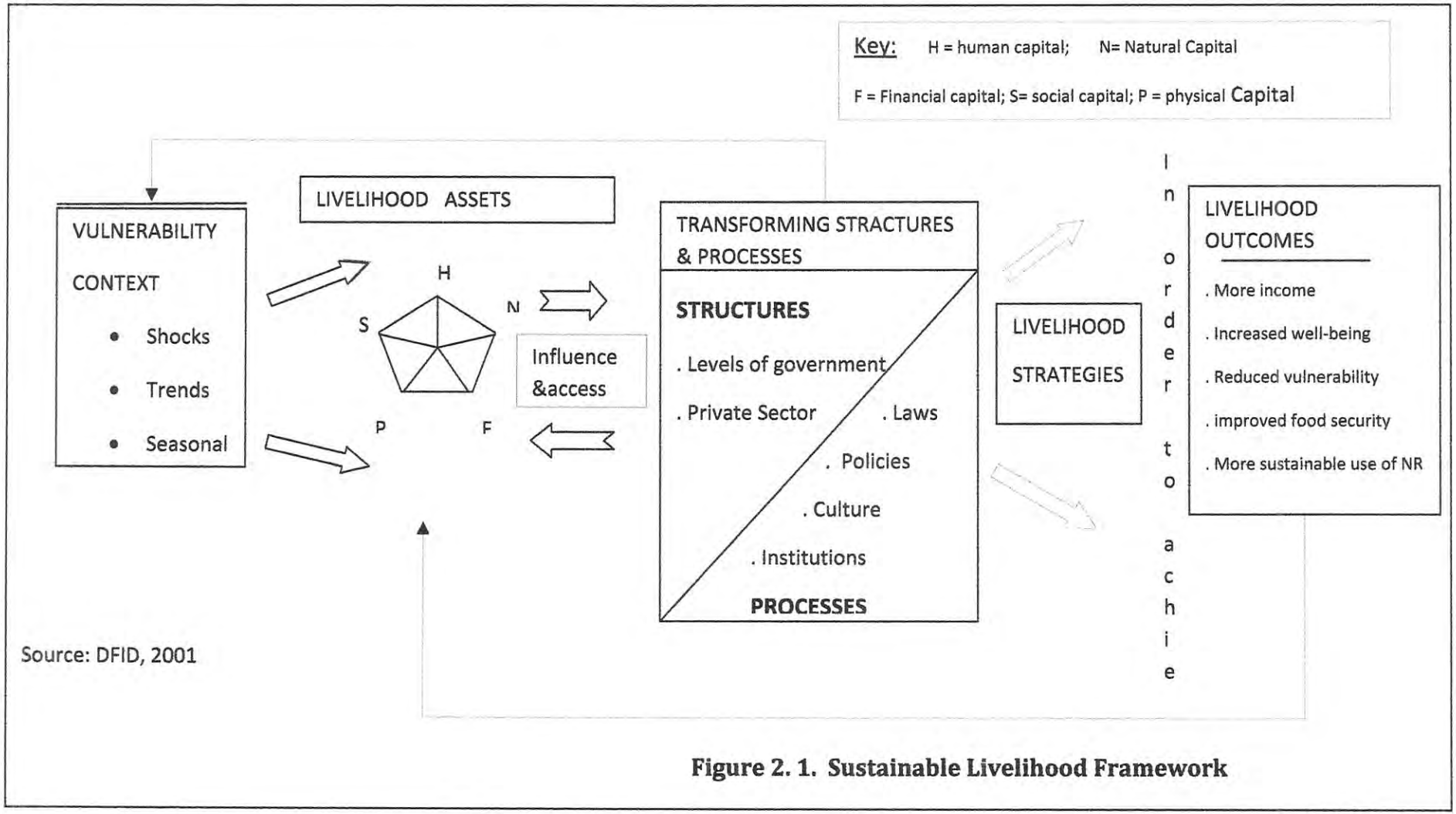


Figure 2. 1. Sustainable Livelihood Framework

CHAPTER III

RESEARCH METHODOLOGY

The first part this chapter shades light on the research methodology adopted in this study including the design, research approach, sampling techniques and sample size; data collection techniques and methods of data analysis. The last part of the chapter elaborates how a food security bench-mark is established and the mechanism by which households are categorized in to food secure and insecure.

3.1. Research Design

Farmers' livelihood strategies and food security are dynamic issues influenced by complex and intertwined economic, institutional and political factors. Hence, understanding these issues require in-depth investigation of current and temporal elements. However, due to the apparent time pressure and resource constraint a cross-sectional research design where snapshot of data is collected and analyzed has been employed for the study.

3.2. Research Approach

People's choice of livelihood strategies and food security are broader and multidimensional concepts demanding comprehensive research approach to fully understand. In light of this, both qualitative and quantitative approach has been employed with a view to take advantage of complimentarity of the two types of data in thorough understanding of the issues. Household survey, where modular questionnaires are prepared and administered to household heads was the primary source of quantitative data such as demographic characteristics of household members, asset possession, income, and expenditure. This has been further complemented by qualitative data generated using PRA tools such as focus group discussions, key informant interviews and observation.

3.3. Sampling Techniques and Determination of Sample size

Both probability and non-probability sampling techniques were applied for this study. In the first place three 'Kebeles' namely 'Amdework Zuria', 'Gakiw' and ' Birbira' have been purposely selected based on their relative distance from the 'Woreda' capita, magnitude of landlessness, and accessibility.

A basic principle of scientific sampling is that every sampling unit must have a known positive probability of being selected, yet these probabilities do not necessarily have to be equal for all units (Poate and Daplyn, 1990). In view of this, a probability proportional to size was applied to select sample survey respondents from these 'Kebeles'. 15% of the total population of landless households was included in the sample, for sample of this size is often believed to be adequate to give statistically acceptable inference.

But, notwithstanding, the payoff that larger sample size give in terms of accuracy of survey result (proximity to population), the key determinant of accuracy is looking separately at different groups (de Vanus, 1996). To this end, number of male and female headed households was determined by the principle of proportionality to sample size. Finally, households for the sample survey were identified from each category based on simple random sampling techniques using lottery method. List of landless households from each 'Kebele' administration has been used as a sampling frame from which individual sampling units were categorized and drawn. In this way a total of 181 (128 male headed and 53 female headed) landless household heads were identified and included in the household survey. Table-3.1 below presents sample households by sex drawn from each 'Kebele'.

Table 3.1 Sample 'Kebeles' population and sample size

Kebelle[1]	Total Population		Total Households		Landless Households		Households included in the sample	
	Male	Female	Male	Female	Male	Female	Male	Female
Amdework. Zuria (02)	3016	3214	1090	261	390	150	63	20
Gakiw (015)	3088	2649	859	216	275	144	41	25
Birbir (021)	2271	1949	631	213	146	32	24	8
Total	**8375**	**7812**	**2580**	**690**	**811**	**326**	**128**	**53**

Source: '*Kebele*' Administrations of the respective PAs, 2009

On the other hand, key informants and focus group discussants were purposefully selected to represent various social groups with a view optimize the range of responses.

3.4 Techniques of Data Collection:

During the last week of January a preliminary field assessment was conducted to the study area, and it was after this brief visit that the research instruments were slightly touched to fit to the local context. And actual primary data collection has been made during the last week of February and first week of March.

Both primarily and secondary data has been used for this study. Consequently, both primary and secondary data collection methods were employed to elicit the required data and information. This section provides a brief overview of the different primary and secondary data collection techniques, and the type of information generated through each of these.

3.4.1 Primary Data Collection

Primary data (both qualitative and quantitative) were collected from primary sources through household survey, focus group discussion, key informant interview and observation.

[1] 'Kebele': the lowest (i.e. village) level administration in Ethiopia

Household Survey: Information related to household demographic and socio-economic characteristics, access to resources: access to land, informal land markets, livestock, household assets, livelihood diversification, income and expenditure, access to social and economic infrastructures, social support networks, access to credit and extension service, and coping strategies were collected through household survey.

A structured questionnaire, close and open ended, has been prepared and tested on for validity. Then the questionnaire first prepared in English has been translated in to the local language (Amharic) for smooth communication and understanding. Four enumerators and a field supervisor, all of them diploma and above, were selected from the are based on their educational level and familiarity with the area and relation with issue under study. The enumerators and field supervisor were trained for one day on the questionnaire and on how to conduct the survey interview. The enumerators were made to conduct few field exercises to check whether they have fully understood the questionnaire. This field exercise helped the researcher to identify and rectify misconceptions on the questionnaire before actual interview was conducted. And data at household level were collected by visiting each and every one of the sample respondent; and one PA has been administered at a time to enable enumerators help each other and allow the researcher and field assistant to conduct close monitoring and supervision. *(See Annex for full information on household questionnaire)*

Focus Group Discussions (FGDs): According to Scoones and Thompson (1994 cited in Belayineh, 2002), the production of knowledge and the generation of potential solutions should be carried out by those whose livelihood strategies are the subject of the study. Thus, well- informed individuals in the community have valuable information, especially with respect to qualitative issues that can't be captured by the household survey. In light of this, FGD participants were selected to represent the different cross-sections of the community in terms of sex, age, social position, land ownership and wealth. A total of three FGDs, one in each PA, have been conducted to elicit relevant information. On average Nine to twenty people participated in each of these FGDs. Selection of participants has been done with close participation of development agents and local administration.

The major information elicited through FGDs include: major livelihood strategies in the area, resources, trends and shocks, vulnerable groups, local institutional capacities, challenges and opportunities of the landless, trends of landlessness in the area, informal land market and constraints, possible solutions to address the problems of landlessness The discussions were conducted based on predesigned open-ended questions/checklists. And data cleaning and identification of gaps had been conducted right after each FGD to correct deficiencies, while information is still fresh in mind.

Key Informant Interview (KII): Similarly key informant interviewees were deliberately selected from individuals that are believed to have comprehensive knowledge about the area under study either due to their social position or age. Efforts have been also made to include the different spectrum of views from various people of different professional and social background. Consequently, department heads, 'Woreda' experts, NGO staff, development agents, health extension agents, teachers, and administration staff were involved in the key informant interview. The interview has been conducted in the presence of the researcher based on a predesigned checklist. The information collected from KIs was also used to triangulate and increase thoroughness of the information collected by other techniques. A total 14 individuals have participated in the key informant's interview.

Observation: Personal observation of the researcher has been used as one means of generating primary data in this study. It was carried out through careful observation, listening and recording of the facts pertaining to different issues. Level of resource degradation, accessibility and adequacy social and economic infrastructures, marketing, farming activities, housing type and level of destitution were some of the information collected through direct observation. Information collected in this way has been used to triangulate data collected through other techniques and increase the overall reliability and accuracy of data

3.4.2 Secondary Data Collection

Secondary data has been collected from published and un-published sources at 'Woreda', zonal and regional level. The major sources were reports, plans, and publications of various government departments and NGOs working in the area. Furthermore information from CSA was also utilized. Area locations and demographic and socio-economic profiles of the study 'Woreda' and region are some of the information generated from these sources.

3.5. Data Entry and Methods of Data Analysis

Qualitative data generated using FGDs, KII interview, and observation has been analyzed in the course of data collection with the help of the target community members by describing or narrating and interpreting the situation deeply so that the real picture of issues is clearly understood.

With regard to data from household survey, every completed questionnaire was checked by field supervisor on the same day. The pre-coded questionnaire were entered and analyzed by using the statistical Package for Social Sciences (SPSS) computer soft ware programme. Descriptive statistics such as frequencies, mean, percentages, as well as inferential statistics like correlations, and binary logistic regressions analysis were applied to understand the relationship and associations between variables. Finally the results are presented in tables, figures and charts.

3.6 Establishing Food Security Bench Mark:

The World Bank (1986) defined food security as "*access to enough food by all people at all times for healthy and productive life*". According to ANRS FSCDPO (2007), food security at household level is best measured by direct survey of annual income and expenditure; and compares it with minimum subsistence requirement. Based on the core concept of food security in the above definition, households whose aggregate annual income per adult equivalent (AE) meets minimum subsistence requirement are

categorized as food secure and those whose income per AE below the minimum requirement are categorized as food insecure.

Therefore, establishing a food security bench mark/cut-off point is required for the purpose of this categorization. In view of this, the average annual income per adult equivalent is computed as direct indicator of food security for the sample households. The minimum level of income per AE required for the subsistence is calculated based on the following assumptions. The minimum daily calorie requirement for an adult is 2200 Kcal; and with the assumption that a Kg of cereal provides 3400 Kcal (ANRS: FSCDPO, 2007) a minimum of 225Kg of cereal is needed per adult equivalent per year. Similarly, as rural households spent most of their income on food, the share of food consumption expenditure/AE is estimated to be about 70% (ibid).

Thus, the amount of income required to purchase 225Kg of cereal has been calculated based on the 2008 market price and added to the income required to cover other expenses (clothing, medical service, education, tax). Using the 2008 average market price of cereals in the Dehana area, 1237.5 Birr (225 Kg X 5.5 Birr) is required to purchase 225 Kg of cereal.

Similarly the minimum amount of cash required for other food and nonfood expenses including clothing and foot wear, education and communication, healthcare and sanitation and tax was estimated based on the recommendations of (ANRS: FSCDP, 2007; MOFED, 2002; and Misganaw, 2008) about the percentage share of each expenses in households' annual expenditure. 529.7 Birr is therefore an estimated minimum amount required to cover these expenses. Thus, a minimum food security line of Birr 1767.2/AE is established by adding the minimum subsistence food and nonfood expenditure.

Table 3.2 Estimation of Minimum Consumption Expenditure/AE at 2008 Market Price

Expenditure Category	Expenditure required /AE Birr	Source of Information
Staple food (225 X5.5 Birr)	1237.5	Computed based on minimum subsistence income required to meet the minimum calorie requirement (2100 Kcal)
Clothing and foot wear	168	ANRS: FSCDPO (2007), MOFED, 2002 (poverty profile of Ethiopia
Education and communication	124	ANRS: FSCDPO (2007), MOFED, 2002 (poverty profile of Ethiopia
Health care and sanitation	150	ANRS: FSCDPO (2007), MOFED, 2002 (poverty profile of Ethiopia
Taxes	17.7	ANRS: FSCDPO (2007), MOFED, 2002 (poverty profile of Ethiopia
Other expenses (pulse, relish, vegetable, stimulants, animal products)	70	ANRS: FSCDPO (2007), MOFED, 2002 (poverty profile of Ethiopia
Total	1767.2	

Source: MOFED (2002 cited in Misganaw, 2008); ANRS: FSCDPO (2007); own computation

Estimation of Total Household Income and Categorization of Households

The total annual income of a households is computed by summing-up all household incomes from farm, nonfarm, migration and off-farm activities. In this research annual income from sale of animals, animal products, off-farm, migration and nonfarm activities were directly obtained from the household head. Meanwhile, as rural households in Dehana are believed to use most of their production for their own consumption purpose, the total crop output was converted in to cash income at the market price of 2008, and added with other incomes to get the total annual income of a household (*see Annex for 2008 market price of major crops and animals in Dehana*).

Once the total annual income of a household was computed, then the next step was to calculate the annual income per adult equivalent simply by dividing the total annual income of the household to the adult equivalent of the household. Based on the outcome, households were categorized in to two. Those households whose annual income per adult equivalent above 1767.2 Birr were categorized as food secure, and those households' whose annual income/AE fall below this line were categorized as food insecure.

To summarize, this chapter presented the overall methodology with which the research problem is approached. The type of research design, sampling techniques and determination of sample size, data type and the techniques data collection employed were highlighted. And finally it describes how a food security benchmark has been established and the mechanism with which households are categorized in to food secure and insecure. In light of the discussions made in this and previous chapters, the next chapter presents major biophysical, demographic, and socioeconomic description of the study area.

CAPTER IV

DESCRIPTION OF THE STUDY AREA

The first section of this chapter presents a brief overview of the Amhara National Regional State wherein the study 'Woreda' is located. The second section highlights the basic demographic, physical and socio-economic characteristics of the study 'Woreda'. All the data and information presented in the description of the study 'Woreda' are obtained from the respective government departments/sectors and NGOs working in the area.

4.1. Overview of Amhara National Regional State

The Amhara National Regional State, wherein the Study 'Woreda' is found, is one of the nine regional states of Ethiopia. The region borders the Sudan to the northeast, Tigray region to the north, Oromiya region to the south and Afar region to the east. Amhara region with a land mass of 170,150 Km^2 constitute about 11% of the total area of the country. The region is located between 9^0 20' to 14^0 0' North Latitude and 36^0 20' to 40^0 20' east longitude (Berhanu and Feyera, 2005; ANRS -BI, 2006).

According to the 2007 population and census result, the total population of the region is 17, 214, 056 (8,636,875 male, and 8, 577, 181 female); this puts the region the second most populous next to Oromia region. About 89% of the population of the region resides in rural areas depending on subsistence rain fed agriculture as the main source of livelihood. The region is subdivided in to 10 administrative zones (including three special ethnic based zones) 151 'Woreda's and 3456 ' kebeles'. According to Birhanu and Feyera (2005), 20%, 44% and 28% of the region fall in '*Dega*', ' *Woyina dega', and* ' *Kolla'* agro-ecologies respectively; which paves the way for diversified agriculture.

The region is blessed with enormous natural and manmade endowments that can be tapped for the socio-economic development of the people in the area. About 700,000 hectare of land is potentially irrigable of which only 33.4% is so far developed; the region accounts for 35% % of the livestock resource of the country. According to the

same source there are 10,077,302 cattle, 7,520,517 sheep, 4,856,473 goat, 102,084 mule, 289,522 horse, 1,513,892 donkeys, 10,731 camel, 9,400,916 chicken, 791, 661 beehives. Furthermore, rivers in the region are believed to generate 6000 Megawatt hydroelectric power, of which only 84 Megawatt is so far generated (ibid)

The region is also a home of numerous natural and manmade tourist attraction including Semien National Park which is endowed with 33 different species of mammals (12 of them are endemic), 183 different bird species (8 of them endemic), and over 300 different plant species (3 are endemic); rock-hewn churches such as Lalibella and 'Meskele Kirstos' built in the 11th and 12th century, and age-old historic palace such as Gondor built in the 17th and 18th century (ANRS-BI, 2007).

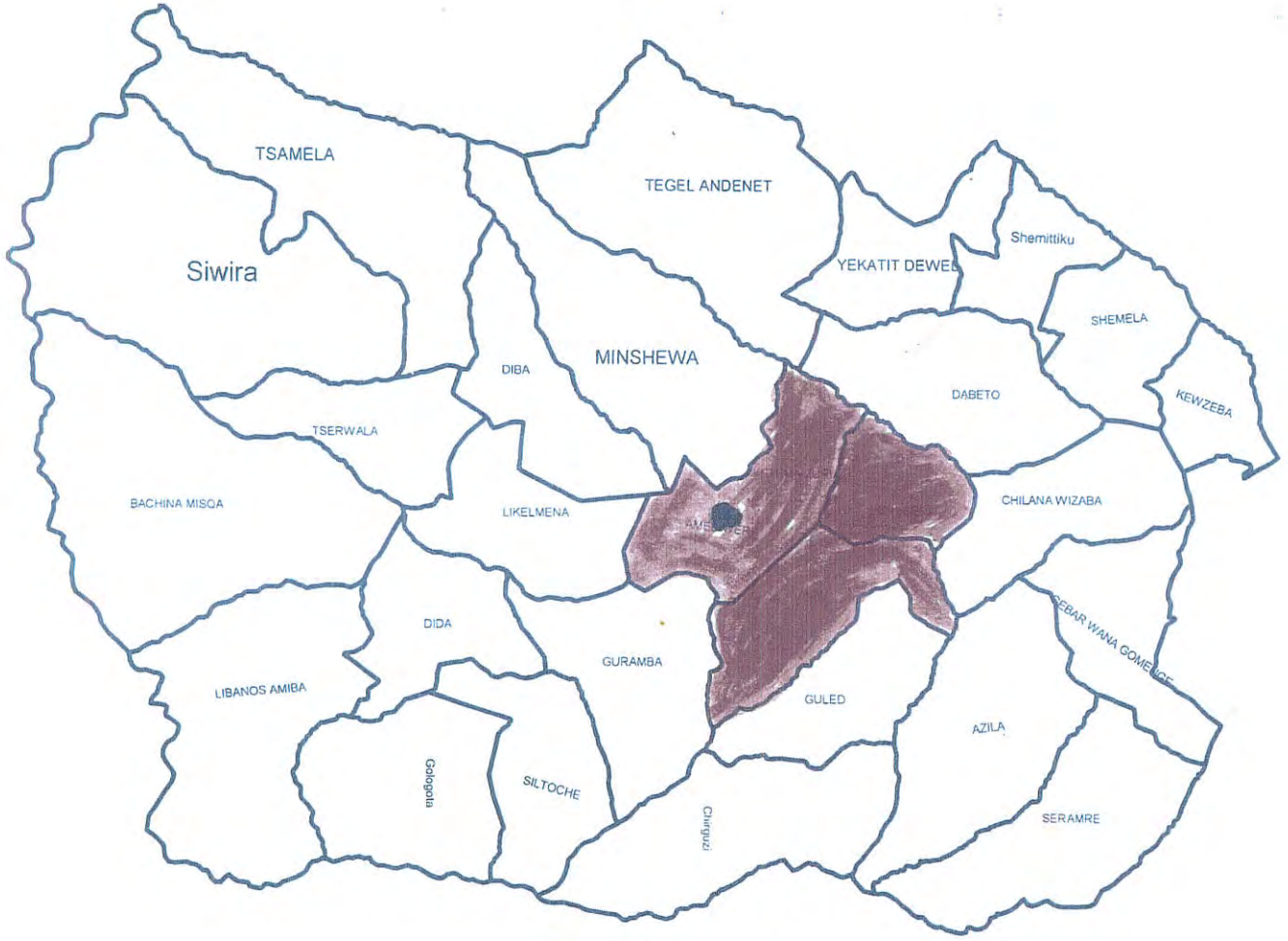
Despite the huge untapped potential, however, the people in the region have been deplorably suffering from abject poverty and food insecurity emanating from various natural and manmade factors like inappropriate policies and strategies, conflict, natural hazards, rapid population growth and accelerated environmental degradation. Nearly 89% of the region's population is still living in rural areas depending on subsistence rain fed agriculture which is extremely susceptible to a slight change in either the amount or distribution of rainfall. About 3 million and 3.3 million people of the region is estimated to be affected by chronic and transitory food insecurity respectively.

4.2. Description of the study 'Woreda', Dehana,

4.2.1 Location

Dehana 'Woreda' is one of the six 'Woreda's of Waghimra special administrative zone of the Agew Ethnic group in Amhara National Regional State. The 'Woreda' Shares border with Ziquala 'Woreda' (in the north), Sekota 'Woreda' (in the east), Gazgibla 'Woreda' and North Wollo (in the south), and South Gonder (in the west). The 'Woreda' is subdivided in to 28 ' kebeles' (one urban and 27 rural), which significantly vary in terms of their land area and population. The 'Woreda' capital, Amdework, is located 818 Km north of the national capital Addis Ababa; 536 Km from the regional capital Bahirdar and 78 Km west of the Zonal capital Sekota.

DEHANA WOREDA LOCATION MAP



N
W
S

Kebele boudar
Sample Kebeles
Woreda Capital

10000 0 10000 20000 Kilometers

4.2.2. Physical Characteristics:

Physical characteristics of a given area influence the socio-economic condition of the population inhabiting it. Topography determines altitude and climate which in turn influence soil type and vegetation cover. Agricultural productivity is a function of these variables. Hence, physical characteristics of a given area have a significant impact in shaping the livelihood strategy of the people living in it. In light of this, the following section throws light on the major physical characteristics of Dehana 'Woreda'.

Topography and Climate:- The most common feature of relief in the 'Woreda' is rugged topography characterized by chain of mountains, steep escarpment and deeply incised valleys. Altitude ranges from 500 meter a.s.l in around Tekeze river to as high as 3245 meter a.s.l at Hulaban mountain (ANRS BI, 2006). As per the information from 'Woreda' ARDO, 20%, 55%, and 25% of the 'Woreda' lies in Dega (2300 – 3400 meters a.s.l), Woyinadega (1500 – 2300 meters a.s.l) and Kolla (500 -1500 meters a.s.l) agroclimatic zones respectively. Absence of meteorological center makes very difficult to access exact climatic data of the 'Woreda', yet mean annual temperature is estimated to range from 25^0 to 27^0 . Similarly, mean annual rainfall ranges from 500 – 1042mm.

Dehana is characterized by a un-imodal rainfall where major crops are grown during the '*meher*' season extending from mid- June to the beginning of September. Although it has been reported by the 'Woreda' ARDO that the length of growing period (LGP) is about 120 days, yet during the FGDs it has been noted that the length of growing period is shortening particularly during the past successive years. In recent years, rainfall often begins towards the end of June and ceases in early September, which makes LGP less than 100 days.

Vegetation Cover:- Accelerated population growth and consequent increasing demand for more agricultural land, fuel wood, and construction material, puts immense pressure on the natural vegetation cover of the 'Woreda'. Except small remnants of natural vegetation cover along the inaccessible lowlands of river Tekeze , the area is virtually stripped of any forest cover. The continuous shrinkage of the natural forest has

resulted in widespread shortage of fuel wood ('fuel poverty'), that forced the community to use cow dung and crop residue as source of fuel which would otherwise been used to maintain soil fertility. Communal lands are even extremely prone to degradation as a result of excessive utilization without any limit. These lands become relatively green only during the short rainy season with grasses and 'Adey ababa', but remain bare and dry throughout the whole dry season.

Soil Type:- Although there is generally paucity of data, concerning the type and proportion of soil in the 'Woreda', the information from 'Woreda' office of Agriculture and Rural Development revealed that the dominant soil colors in the 'Woreda' are red, brown, black and grey. Soil in the 'Woreda' is generally characterized by poor in fertility, shallow in depth and poor in its physical property which could be attributed to a number of natural and manmade factors including: Extremely undulating terrain and steep slope; poorly distributed torrential rain; rapid population growth which led to deforestation and colonization of marginal lands (up to 60% slope); archaic farming practice and over grazing. Cognizant of this fact, concerted soil conservation efforts has been going on by the government, and other development actors through community mobilization, food for work and cash for work initiatives. The major type of soil conservation activities are predominantly physical structures such as stone bund, soil bund, check dams, cutoff- drain and micro-basin.

Land Use Type: With regard to land use 19% of the total area of the 'Woreda' is cultivated; 15% grazing; 8% settlement; 22% bush land and the rest 35% is waste land. Relatively small percentage of grazing and farmland, and high proportion of waste land is attributed to extremely rugged terrain (chasms and escarpments) and land degradation that makes a significant portion of the area unviable to any economic activity.

4.2.3. Socioeconomic Characteristics of the Study Area

4.2.3.1. Demographic Characteristics

According to the 2007 population and housing census result, the population of Dehana is 109,687 (54, 635 male and 55,062 female). The largest ethnic group in the 'Woreda', Amhara constitutes 99% of the total population, the rest about 1% belongs to the Agew Ethnic group. Amharic is spoken by over 99% of the population, and almost 99.9 % of the population is follower of Orthodox Christianity. Close to 94.5% of the 'Woreda''s population lives in rural area whereas the rest 5.5% live in urban area (CSA, 2007). As it is typical in the highlands of Ethiopia, settlement pattern is predominantly nucleated where mixed farming (crop production and livestock rearing) is the most important economic activity.

With a total land mass of 1354.06 Km^2, population density stands at 81 persons per Km^2 demonstrating lower population density in comparison to the regional average 105 persons per square Km. On the other hand, given extremely rugged terrain, low soil fertility and inhospitable climatic condition, only about 19.3% (26171 ha) of the total area of the 'Woreda' is cultivable, which in turn lead to a higher agricultural density of 403 persons per Km^2

4.2.3.2. Major Livelihoods in the Study Area:-

As typical in Ethiopian highlands, mixed farming (crop production and animal rearing) is the most important source of livelihood for the majority of the community in Dehana. According to 'Woreda' Finance and Economic Development Office, about 98% of the population derives their livelihood from agriculture. Other nonfarm activities such as hair dressing, carpentry, spinning, petty trade and handcrafts (blacksmith, pottery, weaving, tannery,) accounts only for 2%.

Farm Activities

Crop Production: The major crop types grown in Dehana in terms of both area coverage and production are cereals (Teff, sorghum, barely, wheat, maize) ; pulses (horse bean, pea, lentil, chick-pea and haricot bean); and oilseeds (niger, linseed,

sunflower, and sesame). Out of these major crops Teff, Barley, wheat, bean and Sorghum, accounts for over 70% of the total cultivable land. As per the information from 'Woreda' ARDO, nearly 99% of the cultivable land is covered with annual crops, and the rest about 1% is dedicated to vegetables and fruit tree production.

As presented in *Annex1*, the level of agricultural productivity 6.3/ha is generally one of the lowest compared with the national average of 13.8 quintals/hectare (CSA, 2008). The major problems with crop production in the area include: recurrent drought the repeats itself every three to five years; pest resurgence including the most notorious ones such as *Wollo bushckriket*('Degeza'), Barely shoot fly, Sorghum chaffer, grasshopper, African bollworm, cutworm, aphids, armyworm; weed infestation (both exotic and indigenous weeds); hail storm; erosion induced land degradation and lose of fertility; low level of input application and archaic farming system; fragmentation of farm land.

Successive drought years that come approximately every 3 – 5 years gives little time for asset rebuilding which eventually cause erosion of productive assets like oxen leading to high level vulnerability. The years 1965/66, 1974/75, 1984/85, 1988/89, 1994/95, and 2002/2003 were the major drought years that caused widespread catastrophe on the life and property of the population in the 'Woreda'. On top of these major droughts years, there were numerous episodes of droughts that hit localized areas and cause damage in specific PAs.

Farm Land Holding: The average land holding size of a household with a slight variation among PAs is 0.75ha. Given the current farming technology, this size is hardly enough to support the average family size of five people. Meanwhile, landlessness is posing an increasing threat on the socio-economic development of the area. As per the information from Zonal EPLAUA out of the 22, 393 households in Dehana about 35 - 40% are landless.

Livestock Production:- According to the information from 'Woreda' ARDO, there are 86,405 bovines, 148,170 ovine and 14,852 equines, 70627 chicken and 14272

beehives. Accordingly, the per capita livestock holding stands at 0.79 for bovines, 1.35 for shots, 0.13 for equines, 0.64 for chicken, and 0.13 beehives.

Ownership of Oxen: - Generally there is paucity of data about the position of ox ownership of households in the 'Woreda' , information from Zonal ARDO indicates 46 % of the households do not posses ox at all ,31% of the households own an ox, 21% have a pair of oxen, and less than 2% own more than three oxen.

Nonfarm and Off-farm Activities:

As a result of manmade and natural factors, agriculture in the area is becoming a risky business prone to failure whenever there is slight variation in amount or distribution of rainfall. In view of this, the significance of nonfarm and off-farm income in stabilizing the food deficiency of households is not debatable. Households with higher share of nonfarm and off-farm income in their total annual income are believed to be less vulnerable to periodic food shortages (ANRS DPPC, SERA, 2002).

Despite their indispensability, however, the contribution of nonfarm and off-farm income generating activities to household's economy appears to minimal. Livelihood in Dehana is inherently less diversified where agriculture only accounts for a bulk of households income (98%) and the contribution of other nonfarm and off-farm income sources to household's economy is only about 2%.

4.2.3.3. Access to Economic and Social Infrastructure:

Agricultural Extension: Agricultural extension program began in the area in 1995 with a primary objective of improving production and productivity of small-holder farmers through introduction of improved agricultural technologies/inputs, training and provision of technical advice to farmers, and improving credit access to farmers. According to 'Woreda' ARDO, 74 development agents, 10 supervisors, and 8 veterinary technicians, are deployed to the 28 peasant association. On average three DAs specialized in different disciplines (crop production, animal husbandry and natural resource conservation) are assigned to each PA. Furthermore, 9 subject matter specialists (experts) stations at 'Woreda' are providing technical backstopping to

only recently. Six of the markets are on the same day (Saturday) and the other two are on Tuesday and Thursday.

The recent inclusion of marketing department under 'Woreda' ARDO with the intension of improving the marketing network is a step forward in the effort to minimize extreme price fluctuation of farm outputs during the pre and post harvest times.

Farmers' Cooperatives: There are twenty two farmers' cooperatives with a total capital of 631, 629.91 Birr. These farmers cooperatives have a membership of 6295 farmers; 5494 (87.2) male and 801 (12.8%) female. Out of the 22 about 11 already got legal personalities from Regional Bureau of Cooperatives, and the rest 11 are on process. Cooperatives provide various services to their members, *inter-alia*: minimize seasonal fluctuation in the price of agricultural produce through buying during harvest; stabilize market by selling their purchase in time of shortage; supply agricultural inputs and other industrial consumer goods with reasonable price; provide services like flourmill; provide credit service to their members and safety net beneficiaries; periodically distribute profit to their members; and Provide a sort of social support system for their members.

Permanent residence in a *'Kebele'*, the person's ability to repay loan, his/her reputation as well as the ability to pay the registration fee are the only preconditions for membership in the cooperatives.

Education: as per the information from 'Woreda' office of education, there are 17 first cycle primary schools (grade 1-4); 20 second cycle primary schools (Grade 5 – 8); 4 complete second and first cycle primary schools (grade 1- 8); one secondary school, which is also serving as preparatory school; and one technical and vocational school. 458 Teachers (270 male and 188 female) are deployed to serve in these schools. During the time of this study, a total of 23817 students (12520 male and 11297 female) were attending their education at different levels. It has been also learned that girl's participation in primary education is fair (47.4%).

Gross Enrollment Ration (GER) and Net Enrollment Ratio (NER) are 131.3% and 109.6% respectively. On the other hand student classroom ratio, student textbook ration, and student teacher ratio are 1:60-, 1:2, and 1:79 respectively. These figures depicts education quality is below the standard set by the ministry of education, which is 50:1,

1:1 and 1:54 in the same order. Dropout and repetition rates are 2% and 1.5% respectively

Health Service: access to adequate health service is crucial element in pursuit of peoples' livelihood strategies. As per the information from 'Woreda' Health Office (WOH), there are 22 health posts, 5 cluster health centers and one health center. During the time of this study, 1 health officer, 19 senior nurses, 1 junior nurse, 7 health assistants, and 37 health extension workers are deployed in these facilities. Prenatal, postnatal and delivery care are one of the lowest in the region, 15%, 5% and 4% respectively. EPI coverage is about 86%, which is fairly good given inaccessibility of most of the ' kebeles'. With regard to the major health hazards in the area, the office described: internal parasite, respiratory tract infection, non-bloody diarrhea, skin disease, pneumonia, gastrointestinal disease, arthritis, trachoma, other eye infection, bloody diarrhea are the most frequent health problems in order of their importance.

Access to Rural Water Supply: And accesses to safe drinking water is essential component of basic human right and, of course, determine level of well being of the people. According to 'Woreda' Office of Water Development, however, a large segment of the population (59%) in the 'Woreda' is still imbibing water from unsafe sources like rivers, unprotected springs, and ponds. there are 84 developed springs, one borehole, and 48 hand-dug wells in the 'Woreda'. Generally, 41% of the rural and 23.7% of urban population have access to relatively clean potable water.

Road: Physical capital, particularly road constitutes one of the most important basic resources of rural livelihood. Good network of road facilitates mobility of people, good and services. Improves flow of information and technology as well as enhances market transaction paving the way for more livelihood options for the community. People with better access to good road network have better livelihood opportunities than people without.

Road network in Dehana is quite poor; there is only one all weather road connecting the 'Woreda' capital, Amdework, with the Zonal capital Sekota. Only 7 PAs out of the 28 are connected to the main road during the summer; the rest about 20 PAs are

inaccessible by any means of modern transportation. The roads connecting these 7 PAs to the main road are constructed by community labor and are slippery, steeply curved and requires regular maintenance after every rainy season.

Telephone and Postal Service: Satellite telephone service is available at Amdework town, but the service frequently interrupts because of failure of equipments to function. All other PAs in the 'Woreda' do not have access to telephone service. With regard to postal service, there is a postal agent in the 'Woreda', yet its service is limited to sending and receiving letters, selling stamps and envelops.

Electric Power: Only Amdework, the capital of the Dehana 'Woreda', is supplied with a 6 hour (6 pm to 12 pm) electric power supply with a diesel generator. But, the good news is two of the newly emerging rural towns in the 'Woreda', Kewiziba and Chilla, are about to get a 24 hour power supply from a national hydroelectric grid system. During the time of this study, installation of electric poles has been going on, and hopefully the power supply will begin after few months.

4.2.4. Institution and Organization in Dehana:

There are numerous formal and informal institutions operating in the 'Woreda'. Among the formal institutions, different government offices responsible for coordinating and facilitating various economic, social and political affairs constitute the lion's share. These include offices of: Agriculture, Education, Health, Administration, Water development, Information, Finance and economic development, Trade and industry, Micro and small scale promotion, Women's affairs; Youth, Culture and Sport, Police, and Justice.

The other group of formal institutions constitutes the various NGOs working in the area on different social and economic affairs. Three NGOs namely The Ethiopian Evangelical Church Mekane Yesus North Central Ethiopia Synod, Ethiopian Orthodox Church (DICAC), Organization for Rehabilitation and Development of Amhara (ORDA) are operating in the area.

Apart from the formal institutions operating in the area, there are also a number of informal institutions established by the people themselves for various purposes. These include: *'Edir'* (to facilitate funereal services), *'Wonfel'* (a sort of reciprocal of labor during pick times), *'Qelleta'* (a support system during crisis); *'Mahiber & Senbette'* (a type of festive where people enjoy food and drink together), Equib'(traditional credit and saving institution, common in urban areas), and etc.

4.2.5 Overall Food Security Situation of the 'Woreda':

From the discussion above, one can easily imagine how fragile the food security status of the population would be. Dehana, being one of the most drought prone area in the region; with poorly developed social and economic infrastructure; extreme erosion of productive asset base of the people due to frequent shocks; extremely degradation of the physical environment; and poorly developed nonfarm sector, is the most structurally food deficient area in the region. In light of this, the Amhara National Regional State identified Dehana as one of the 52 chronically food insecure 'Woreda's in the region.

As per the information from Zonal F$CDPO, with varying intensity, the area has never ever been free from relief aid since 1984. During the past two decades, the intensity and frequency of drought has been increasing in an unprecedented manner each time increasing the toll of human suffering and misery. Successive drought years that come approximately every 3 - 5 years give little time for asset rebuilding which eventually cause erosion of productive assets resulted in high level vulnerability to shocks.

Analysis of the past 10 years data shows that, during the past decade the number of emergency relief aid beneficiaries in the 'Woreda' has been hovering around 30 to 45% of the total population *(see Annex-4)*. In order to offset the prevailing food insecurity in the area government is implementing various complementary programs since 2005. The programs are currently benefiting about 44304 chronically food insecure people in the 'Woreda'.

Productive Safety Net Program (PSNP):- program has two major objectives: preserve the asset base of chronically food insecure people by helping them to fill their food gap

through food/cash for work activities; and enhancing rural transformation through development of communal assets. There are two modalities in achieving these goals; 'Public work' where able bodied family members above the age of 18, participate in public work for a maximum of 20 days per month for six months a year to earn either 3Kg of grain or 10 Birr per day. And 'Direct Support' is a modality where, chronically food insecure lacking the capacity to participate in public works due to either old age or ill health are directly benefiting without any requirement.

Integrated family Package and credit facility:- this program aspires to help farmers create assets by participating in different family packages through improved access to subsidized credit facility. The program is designed in such a way to benefit both landless and land owning household. Farmers with land can participate in either of the following land based packages- small scale irrigated crop production, apiculture, animal rearing, fattening, and vegetable production based on their preference. The landless households, on the other hand, are participating in packages that do not require land such as – small and micro enterprises (petty trading, weaving, blacksmith, agro-processing, and textile activities. This program primarily targets safety net program beneficiaries with a view to increase the cumulative impact and complementarities between the two programs.

Resettlement:- this program targets resettlement of chronically food insecure people living in high population density and very degraded environment to less densely populated and better endowed areas within the region. But according to 'Woreda' farmers' interest to leave their areas and to resettle to other areas is very poor, which could be attributed to various cultural, institutional and environmental factors. During the past one year only 67 household heads and their 118 family members were voluntarily resettled to north Gonder Zone Quara and Armachiho 'Woreda's.

The program has already elapsed four years period, and its cumulative impacts require further detail investigation which is beyond the scope of this study

4.3 Review of Current Policies and Strategies Related to Rural Livelihood and Food Security:

The current government of Ethiopia adopted various policies and strategies with a view to minimize the food insecurity problem and thereby to extricate the country from heavy dependence on food aid. A brief review of these policies and strategies is presented below to highlight ongoing efforts in the country in general and in the region in particular.

4.3.1. Agricultural Development Led Industrialization (ADLI):- the government of Ethiopia adopted ADLI since the 1991. The policy views agriculture as an engine of growth and vehicle for industrialization by providing raw materials, increasing demand for consumer goods, surplus labor and capital accumulation. The strategy aims to enhance small holder agriculture through provision of improved inputs (improved seed, fertilizer, and chemicals), and training and technical support. Increased investment and development of health service, education and road to rural areas were also emphasized in the rural development strategy.

4.3.2. Food Security Strategy:- the 2002 food security strategy of the country focuses on three major areas: increasing food and agricultural productivity through domestic production, improving food entitlement for food insecure households, and strengthening institutional emergency response capabilities. The strategy is meant to address both the supply and demand side of food equation, i.e. availability and entitlement, at national and household levels for Ethiopia's different food production zones (adequate moisture, moisture deficit and pastoral areas). In general the food security strategy of the country has four components: *Direct food production intervention program*, which aims to increase total food availability through designing and implementing agro-ecologically variable agricultural packages. *Resettlement program*, which is meant to increase food availability through cultivating potential unused land. *Income diversification program*, which is intended to improve purchasing power of poor households through promotion of nonfarm employment opportunities; *Productive Safety net:* primarily meant for provision of transfer to 5 million the food insecure population in 262 chronically food insecure 'Woreda's with a view to both protect and create asset(Workneh, 2008)

In line with the Federal Food Security Strategy, the Amhara national Regional State designed a five year (2001 – 2005) food security strategy primarily aimed to improve the food security situation of over a million people in 52 drought prone food insecure 'Woreda's (ANRS-FSCO, 2001). Expansion of irrigation and water harvesting activities, enhancing rural infrastructure, expansion of rural credit, strengthening human and institutional capacity, strengthening off-farm activities and voluntary resettlement were some of the strategies to increase agricultural productivity and food security.

To summarize, this chapter highlighted the major biophysical, socioeconomic, demographic, and institutional factors characterizing the study area. The study area is generally characterized by high level of environmental degradation, frequent occurrence of shocks, low level of development of social and economic infrastructures and limited livelihood options available to the community. It has also been noted how the cumulative impact of these factors has led to the grim picture of vulnerability and food insecurity of the community in the area. Ongoing efforts to change the tide of momentum of the current dismal situation are also briefly highlighted.

CHAPTER V
RESULT AND DISCUSSION

This chapter is devoted to the presentation of the major findings of the study based on the micro level survey data and information from key informants and focus group discussants. A wide range of issues are presented in five sections; the first section deals with analysis of demographic characteristics of the sample households; the second section explores households' access to and control over major resource and factors including land, draught power, livestock, and other social and economic infrastructures; the third section focuses on the livelihood strategies and major income sources of sample landless households including the determinant factors of income from these sources; the fourth section presents brief overview of level of erosion of asset among landless households; and finally the fifth section presents the status of food security and major coping livelihood strategies of sample landless households. Different statistical models are employed in the latter sections to identify the factors that determine income and food security status of households.

5.1. Analysis of Demographic Characteristics of Sample Households:

Demographic characteristics of a household determine the type and diversity of livelihood strategies a household can pursue as well as both the demand and supply of food. Availability and quality of labor and the magnitude of dependency burden on the productive labor force are some of the most important determinants of household's livelihood strategies. On the other hand, the sex and age structure, as well as the workload on individuals determine the food demand of a household.

This section is therefore devoted to the analysis of major demographic characteristics of the sample household based on the micro level data collected through household survey. Major demographic variables like age, sex, educational level, marital status, family size, ethnicity, religion, and dependency ratio of the sample households are thoroughly discussed.

5.1.1 Sex, Age structure and Dependency Burden of Sample Household:

As it can be depicted from Table 5.1 below, out of the total 181 sample household heads 128 (70.7%) are male and the rest 53 (29.7%) are female. Nearly 50.8% of the household heads lie within the age category of 26 - 34 years; and the rest 24.9% and 24.3% of the household heads are within the age category of 17 – 25 and 35 – 43 years, respectively. This indicates that the youth constitute the significant portion of the landless in the sample PAs.

Table- 5.1: Sex and Age Structure of Household Heads

Sex of the respondent	Frequency	Percent
Male	128	70.7
Female	53	29.3
Total	181	100.0
Category of age of respondents		
17 – 25	45	24.9
26 – 34	92	50.8
35 – 43	44	24.3
Total	181	100.0

Source: Household Survey, 2009

Figure 5.1 below indicates the age structure of sample household members. As typical with the age structure of the Ethiopian population, out of the total 704 household members of the sample households, the majority 51.4% are children below 15 years old. The working age population (15 – 64 years) and aged persons of above 65 years on the other hand, constitute 47.6% and 1% respectively. The survey result also reveals that the sample population has a young population dependency ratio (i.e. the ratio of under 15 population to working age population multiplied by 100) of 108%. Similarly, the old aged dependency ratio (i.e. the ratio of old age population 65 and above to working age population) is only of 2%. Hence, the total dependency burden of the sample population is found to be 110%. This implies every 100 economically active population has to support themselves and additional 110 dependants. The national dependency ratio according to CSA (2008) is 89.8 (i.e. 85.4 young and 4.4 old dependency).

But the conventional way of calculating the dependency burden may not actually show the real situation on the ground. This is due to the fact that and, as is often the case, children under 15 and people above 64 are engaged in some productive activities unless they are in poor health or too young. According to FGDs, the young contributes to the household income through herding, collection of firewood, fetching of water, in some instances through participation in cultivation. Similarly old people also contribute through participating in domestic and homestead farm activities unless they face severe health or disability problem. However, this does not rule out the fact that the marginal consumption of these groups is always higher than their marginal contribution to the household income.

Higher proportion of children under 15 does not only create burden on the current consumption, but also pose a serious threat on the future well-being due to increasing future demand for land and its adverse impact of resource sharing. This also signals the land issue will remain unending in the generation to come.

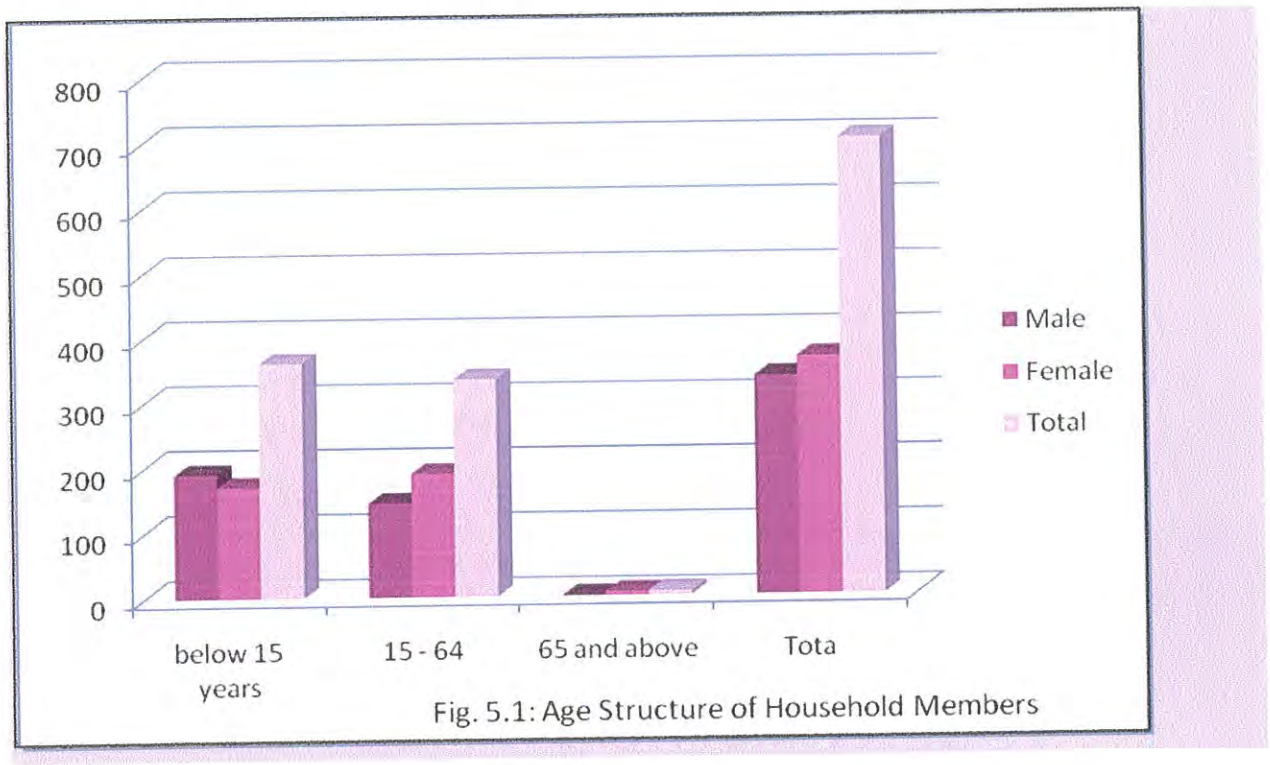


Fig. 5.1: Age Structure of Household Members

Source: Household Survey result, 2009

5.1.2 Family Size of Sample Households

As shown in Table 5.2 below, the average family size of the sample households is four, with maximum and minimum family size of nine and one respectively. About 68.7% of the households have a family size of 3 – 6 members; and 22.7% and 6.6% of the sample household heads have a family size of less than or equal to two and greater than and equal to seven respectively. It has also been noted that on average female headed households have fewer family size (2.9) than male headed households (4.3).

Table 5.2 Family size of sample households

Family Size	male		Female		Total	
	N	%	N	%	N	%
<=2	16	12.5%	25	47.2%	41	22.7%
3 – 4	57	44.5%	19	35.8%	76	42.0%
5 – 6	44	34.4%	8	15.1%	52	28.7%
>=7	11	8.6%	1	1.9%	12	6.6%
Average Family size	4.3		2.9			

Source: Household Survey result, 2009

5.1.3. Marital Status, Ethnicity and Religion of Sample Households:

As indicated in Table-5.3 below, the majorities (74.6%), of the sample households is married and are living together with their spouse. On the other hand, 3.3%, 20.4% and 1.7% of the sample households are unmarried, divorced and separated, respectively. What is more interesting here is, out of the total 37 divorced households, the majority (94.5%) are female.

5.2. Access to and Control over Resource/Assets by Sample Households:

Livelihood assets are the building blocks from which goods and services for livelihood are derived. People must have access to resources in order to undertake production, engage in labor market, and participate in reciprocal exchange with other households (Ellis, 2000). Access to resources also determines the ability of the household to diversify its livelihood strategies and the degree with which the household is susceptible to shocks and trends. This section of the study is therefore devoted to the analysis of households' access to and control over resources and their vulnerability to the wide range of shocks and trends in the study areas.

5.2.1. Access to Land:

In subsistence farming, access to land is the most important factor in determining the food security status of a household. Failure to access to this crucial resource can easily lead households to destitution[2] (Birhanu and Feyera, 2005).

Although access to land is a constitutional right ratified by both regional and national constitutions, 35% of the rural households in the sample PAs are landless. According to FGDs, In 1990/91, which is a little before EPRDF took the central power, it conducted land redistribution in some of its base areas including Dehana. This land redistribution was the third land redistribution in the area within just 20 years period. The first and second land redistributions were conducted in 1978/79 and 1986/87.

During the 1990/91 EPRDF redistribution, land has been categorized into "*wojed*" or fertile, and "*Berha*" or infertile in terms of its fertility and slope. Then, households were given from each category in accordance with their family size. Families with a single child were, however, simply considered as married couples, and didn't get extra land for the child.

---

[2] "Destitution is the state of extreme poverty that results from the pursuit of ' un sustainable livelihoods'. A series of livelihood shocks/or negative trends or processes erode the asset base of already poor and vulnerable households until they are no longer able to meet their minimum subsistence needs. They lack access to the key productive assets needed to escape from poverty, and they become dependent on public and/or private transfer"(Devereux et al,2000 quoted in Birhanu, 2005)

According to FGDs, age and permanent residence in the area were some of the eligibility criteria to access land. Men below the age of 24 and women below the age of 18 were not eligible. The reason why this age limits were fixed is still controversial and subjected to further assessment. This is due to the fact that, and as is usually the case in the area, men and women often form their own families much earlier than these age limits and most of them might even have their own children at these stage. This seemingly discriminatory type of land redistribution has resulted in the creation of landless group in the area from the outset. The number of landless continues to build up since then due to additional claimants' coming-of age, demobilized soldiers and internally displaced people due to ethnic conflicts in different parts of the country during the aftermath of the fall of 'Derg'. Data from the three sample PAs demonstrate the proportion of landless has now reached 35% of the total households. According to KIs, however, most of the demobilized soldiers and internally displaced people were given land from the 'reserve land', i.e. land that had been set aside by each PA for contingency purpose during the redistribution.

In 1996/97 the Amhara National Regional State, conducted another round of land redistribution in most of the 'Woreda's in its jurisdiction with a justification rectifying the unfair concentration of land in the hands of former 'Derg[3]' officials or so called 'Bureaucrats', and address the landless issue by making more equitable redistribution of land. But areas that had been ruled by EPRDF army, "free lands", including Dehana were exempted from the recent round of land redistribution leaving the landless issue in these areas unresolved.

The landless households and their survival livelihood strategies are the centerpiece of this thesis. This section explores in little bit more detail about issues like; who the landless are, their interests, and whether they have alternative mechanisms of accessing this crucial resource, and the constraints attached to these means.

[3] Derg: The ruling elite following the overthrow of Emperor Haile Selassie

Who are the Landless in Dehana 'Woreda'?

The survey results indicate that about 90.6% of the overall sample landless household heads (89.1% of male and 94.3% of female) are found to be youth that were made ineligible to access during the EPRDF land redistribution. Demobilized soldiers and people displaced from other areas accounted only for 2.8% of the landless population. Surprisingly 5.5% of the respondents reported that they were simply bypassed during the redistribution even though they met all the requirements stated by EPRDF. They blame their voicelessness and absence of relatives in the executive body for their landlessness. Table- 5.4 below presents the different categories of people who are currently landless.

Table- 5.4: Category of People Currently Landless in the Sample PAs

Category of People		Sex of the respondent		Total
		Male	Female	
Under Age During the Redistribution	Frequency	114	50	164
	%	89.1%	94.3%	90.6%
Demobilized Soldier	Frequency	1	0	1
	%	.8%	.0%	.6%
Simply Bypassed During the Redistribution	Frequency	8	2	10
	%	6.3%	3.8%	5.5%
Displaced from Other Area	Frequency	3	1	4
	%	2.3%	1.9%	2.2%
Single Child	Frequency	2	0	2
	%	1.6%	.0%	1.1%
Totals	Frequency	128	53	181
	%	100.0%	100.0%	100.0%

Source: Household Survey Result, 2009

From the above figures one can realize that landlessness is predominantly the problem of the youth; this is in fact notwithstanding the presence of other landless groups in the area.

It is clear that the youth are better placed in the society in terms of their access to education and labor, which could be tapped for increasing agricultural productivity through quick adoption of technologies and innovativeness. This in turn would have a positive impact on the overall development agenda of the country in general and the

area in particular. But this positive contribution seems curtailed by the deprivation of the youth from accessing to and control over the most crucial factor of production, i.e. land in rural area where other livelihood options are limited. The problem of landlessness is far beyond economics; rather it is a social, political and intergenerational issue demanding the attention of policy makers. FGDs reported the repeated land dispute between the parents and their children as well as the increasing pressure by these groups on the local government demanding land not only for farming but also for residential purpose, implying the acute nature of the problem.

Informal Land Markets and the Landless

With the diminishing ability of the peasant associations to address the demand for land with increasing number of landless people, the significance of rural land transaction is gaining momentum. As it is usually the case, most of the transactions are made between landless or land constrained farmers and farmers lacking labor and oxen (Desalegn, 2004; Tesfaye, 2003; Yared, 2002). But surprisingly, from the FGDs and survey participants, it has been noted that oxen ownership is necessary but not mandatory for sharing-in land as landless households can access to draught power through various mechanisms such as rent and exchange for labor. This has enabled the majority of the landless including women headed landless households involved in the informal land market.

Sharecropping is the most important mechanism through which the majority of the landless access land followed by other long term non-market transfer mechanisms such as endowment/gift and inheritance. On the other hand, other market based land transactions such as lease, rent, and mortgage are virtually nonexistent in the area.
Out of the total 181 sample household heads, 166(91.7%) of them reported to have accessed some amount of land through these mechanisms, the rest 15 (8.3%) of the total sample households, the majority female headed, reported to have accessed in neither of these mechanism.

As indicated in Figure-5.3 below sharecropping is the most important mechanism through which 140(77.3%) of the total 181 household heads have accessed land. Similarly, 108 (59.7%) and 12 (6.6%) of the sample household heads have reported to access land through marriage endowment and inheritance respectively. Yet, the amount of land through such transfer mechanisms is often very small and infertile. For instance the average size of land accessed through sharecropping is 0.93 hectare, whereas the average land size accessed through endowment/gift and inheritance is found to be 0.27 and 0.05 hectares, respectively.

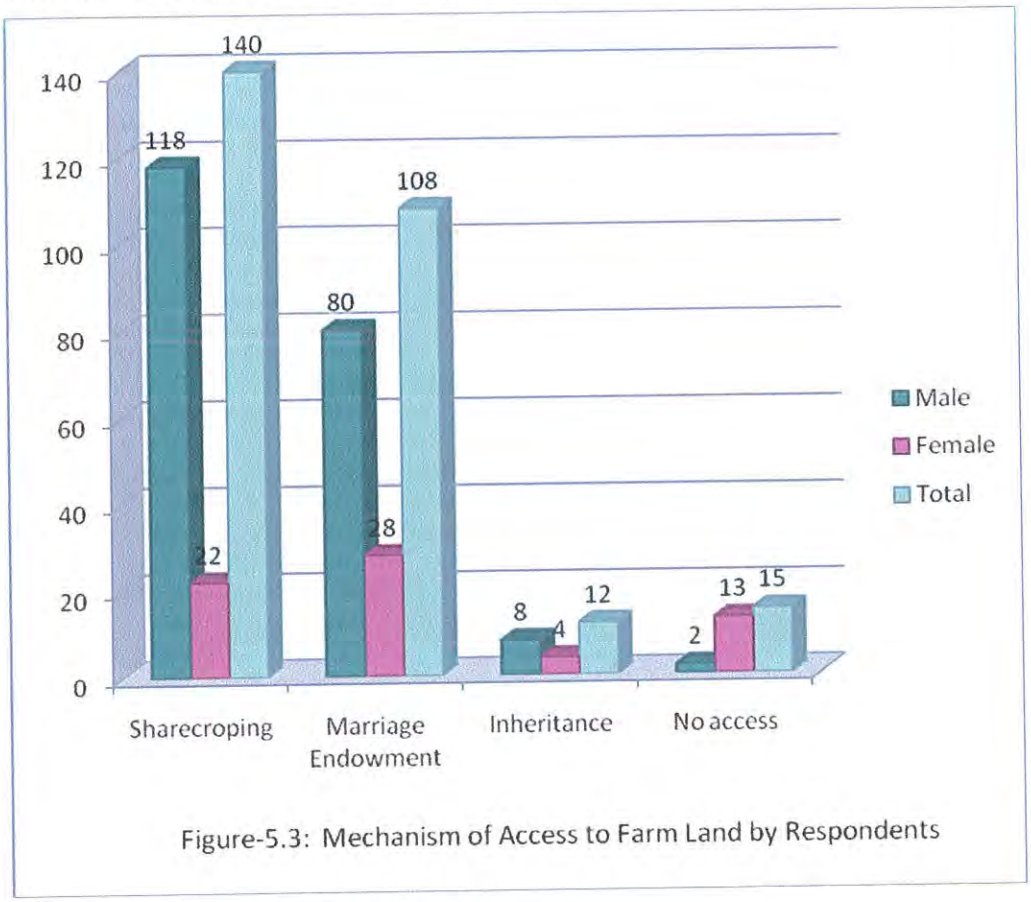


Figure-5.3: Mechanism of Access to Farm Land by Respondents

Source: Household Survey, 2009

In general the average size of farm land accessed by the sample households is 1.24 hectare, but with relatively higher difference between sexes, i.e. .78 hectare for female headed and 1.47 hectare for male headed households. Statistically significant difference at (α=0.05) has been observed in farm land size among the different age groups, sexes and family size. Age and family size of the household heads are found to

the survey result indicates, the average number of parcel of land cultivated by the landless households is 3.4, with a maximum of 14 and minimum of just 1, which partly show the degree of fragmentation of farm plots.

The sample households were asked about the different conditions put by the land owners for sharecropping out their land. About 85% reported more or less similar criteria, i.e. industriousness of the tenant, farm experience, oxen ownership, kinship and good reputation in the PA. The remaining 11% and 3.7 % reported industriousness of the tenant and oxen ownership, respectively as the only criteria to access land through sharecropping. According to FGDs, kinship is an important criterion to access land through sharecropping. If the kinsman has enough capital such as draught power, then priority is often given to them.

Furthermore, landless households without oxen are also sharecropping-in land from other labor and draught power deficient farmers. These farmers access draught power through various arrangements such as: exchange of their labor for draught power, gift from relatives, and rent from other farmers. This signifies not only the dynamic nature of informal land markets in the rural Ethiopia, but also how farmers are efficient in allocating the scarce resources in their disposal. As indicated in Table- 5.5 below, out of the 140 respondents that reported to have accessed land through share cropping, only 81 (58%) have at least an ox, and the rest 42% sharecrop-in land without having oxen.

Table-5.5: Oxen ownership among Household Heads Sharecrop-in Land

Number of oxen	Sex of the respondent				Total	
	Female		Male		N	%
	N	%	N	%		
no oxen	14	63.6	45	37.3	59	42
one oxen	6	36.3	55	47.4	61	43.6
Two oxen	2	9	17	15.2	19	13.6
> 2 oxen			1	.8	1	.7
Total	22	100.0	118	100.0	140	100.0%

Source: Household Survey, 2009

Another interesting finding is that female headed households are also involved in sharecropping-in land from other labor and draught power deficient farmers usually the elderly, the disabled and absentees. This is somehow inconsistent with previous finding of other researchers (Tesfaye, 2003; Desalegn, 2004) which found out that female headed households where known for sharecropping-out their land. According to FGDs, women headed households try to fill their factor deficiencies such as adult male labor and draught power through assistance from relatives and exchange arrangements. On the other hand, such survival strategies also depict the absence of other viable livelihood options in the area.

Generally, from the above discussions one can easily understand the significance of informal land markets in enabling the landless to get access to land. The informal land markets also increase efficiency through allowing industrious farmers to increase their farm operation. Yet, they seem to disproportionately benefit more experienced, and those with oxen and abundant labor than the poor and younger once. The strong positive correlation of farm size with number of oxen, TLU holding, family size and age of the household head clearly depicts this situation *(see Annex 20 for statistical calculations)*.

Sharecropping Arrangements

According to focus group discussants, terms of sharecropping arrangements vary with the fertility of land. The most common type of sharecropping arrangement until recently has been equal share of harvest between the tenant and the land owner for fertile land; and one-third to the land owner and two third to the tenant for infertile land. But due to the increasing demand for land by landless youth coming-off age, the arrangement now uniformly changed to equal share of output irrespective of whatever the fertility status of the land may be. Around 40% of the respondents reported that the land owners require them to pay the land use tax on top of the sharing arrangement.

According to survey respondents and FGDs, another interesting recent development concerning sharecropping arrangement is the issue of "*mofer meteya*", which is a sort of cash payment to the owner in advance during the agreement period. The amount

of cash for a *'timad'*[4] of land differs with fertility of land and across different PAs. The advance payment for a *'timad'* of fertile land ranges from 60 Birr in 'Amdework Zuria' 'Kebele' which is *Dega* agro-climatic zone and also close to the 'Woreda' capital to 45 Birr in Birbira which is predominantly dry *woyina dega* and far from the 'Woreda' Capital. Similarly, advance payment for a *'timad'* medium fertile land and infertile land ranges from 43 in Amdework zuria to 15 Birr in Birbira; and 27 Birr in Amdework zuria to 15 Birr in Birbira, respectively. Such recent requirements and conditions further favor the better of landless; and put the younger and recently formed households in a disadvantaged position, as most of them lack the capacity to meet such requirements.

Problems associated with Informal Land Markets:

Although informal rural land market, in this case sharecropping, seems to give some avenue to the increasing number of landless people, yet they are not immune from problems. Primarily sharecropping agreements lacks legal enforcement and in most of the cases the agreements are subjected to renewal every year. This has caused its own problems on sustainable use of land. The right whether to continue or discontinue the agreement is in the hands of the landowners, and they can terminate the agreement at any point in time. The tenant does not have any legal or institutional ground to claim over the land or for renewal of the agreement. This in turn has adverse impact on the land management as tenants refrain from investing on the land through various land management practices such as application of manure, composting, terracing and crop rotation for fear of eviction.

"We are like slaves to the land owners" said one of the landless FGD participant, "We are blamed for any failure or reduction of yield irrespective of whatever the cause maybe; and evicted from the land we invested on, and yet we do not have the right to oppose such unjust decision by owners." Fifty one percent of the survey participants reported they have experienced decline in size of the farm they cultivated during the past five years due to the increasing competition for land and unfair decision by the

[4] 'Timad' is a traditional measurement of land approximately equal to 0.25 hectare

land owners. Some 42.5% of the respondents indicated no difference in the farm size they cultivated, and only the remaining 6.5% claim increase in the size of land they cultivated.

5.2.2 Perception on current land tenure, interests and expectation of landless households:

With regard to perception of the landless on the current land tenure system, the survey as indicated in table 5.6 below, shows about 54.1% of the respondents affirmed the current land tenure system is good for the people; whereas the remaining 45.9% reported not well. Among the groups in favor of the current land tenure system the majority 61% believe that privatizing land will lead to eviction of the poor and concentration of the land in the hands of the rich. 25.6% simply said that land should not be sold; about 7.8% emphasized, the recent land certification has solved the issue of tenure security and they don't see any reason to oppose the current land tenure system. The remaining 5.6% have even more dynamic view; they believe occurrence of future land redistribution, and chance of accessing land is possible only if land remains under the custody of the state.

Table-5.6: Perception of the Landless on Current Land Tenure System and Their Justifications

	Sex of the respondent					
	Male		Female		Total	
	Count	N %	Count	N %	Count	N %
Do you think the current land tenure good for the people						
Yes	66	51.6%	32	60.4%	98	54.1%
No	62	48.4%	21	39.6%	83	45.9%
Reason for supporting current land tenure system						
Privatizing land will lead eviction of the poor, and Favor the rich	38	61.3%	17	60.8%	55	61.1%
Land should not be sold	13	21.0%	10	35.7%	23	25.6%
Government Already gave land certification	7	11.3%	0	.0%	7	7.8%
Government may one day give us land	4	6.5%	1	3.6%	5	5.6%
Reason for not supporting land tenure						
Prohibits us from buying land and become land owners	49	84.5%	16	10.0%	65	83.4%
It was not fair/exclude the youth	5	8.6%	4	20.0%	9	11.5%
The poor should be given the right to sale their land	2	3.4%	0	.0%	2	2.6%
Private ownership help to properly use land	1	1.7%	0	.0%	1	1.3%
Privatization would help land to concentrate to the efficient	1	1.7%	0	.0%	1	1.3%

Source: Household Survey result, 2009

On the other hand, those who oppose the current land tenure system have different perspectives to complement their view. About 83.4% of them believe the current land tenure put the landless in a disadvantageous position as it forecloses buying and selling of land. If land selling and buying had been legal, they believe they would have bought land from those who lack the resources to properly manage their land and become landowner. 11.5% of them emphasize the current land tenure to be discriminatory as it neglects the majority of the landless youth, while 2.6% of the respondents believe privatization would help proper management and efficient utilization of the land. And the remaining 2.6% opposes the current land tenure as it bars the poor from selling their land and use the money for their immediate needs.

In general, as this issue is politically sensitive, some of the respondents had deep rooted apprehension to genuinely express their views. Meanwhile, binary logistic regression model shows statistically significant (at α= 0.05) increase in the probability of favoring the current land tenure (exp(B)= 1.366) as the land size accessed by the household increases. On the other hand, no statistically significant relationship has been observed between farmers' attitude towards the current land tenure system and other attributes such as educational level, livestock ownership, marital status and age.

As shown in Table-5.7 below, respondents were also asked whether they expect land redistribution in the future; some 66.3% replied they expect land redistribution in the future, and the rest 33.7% responded they no more hope future redistribution. As to the question whether they like to see land redistribution in the future, the majority 86.7% responded they wish to see another land redistribution in their area, and a minority of 13.3% answered they do not want any more land redistribution. Out of the 13.3% (24) households that oppose future redistribution, 78% opposes future redistribution because they believe that land will be even more fragmented and uneconomical and do not hope they will acquire any viable land through further redistribution. Nearly 17.5% of them believe that further land redistribution will only create dispute among the community. And the remaining 4.5% oppose redistribution because they are expecting inheritance from their parents and redistribution may make them losers. The interesting point here is the fact that, even the landless, though few of them, are becoming to

realize periodic redistribution of land can no longer be a viable solution to the widespread landlessness in the area. On the other hand, the single major reason behind those who are pro land redistribution is their ambition to access land and become self sufficient.

Table- 5. 7 Households' Attitude towards Future Land Redistribution

	Sex of the respondent					
	male		Female		Total	
	Count	N %	Count	N %	Count	N %
Do you expect land Redistribution in the future						
Yes	79	61.7%	41	77.4%	120	66.3%
No	49	38.3%	12	22.6%	61	33.7%
Do you like to see land redistribution in the future						
Yes	106	82.8%	51	96.2%	157	86.7%
No	22	17.2%	2	3.8%	24	13.3%
If you do not want land redistribution why not						
Expecting to inherit from family	1	4.8%	0	.0%	1	4.3%
Create dispute	4	19.0%	0	.0%	4	17.4%
Land is already fragmented, do not believe I can get any viable land	16	76.2%	2	50.0%	18	78.2%

Source: Household Survey, 2009

5.2.3. Livestock Holding of Sample Households:

Livestock plays a key role in household's economy next to crop production. The significance of livestock not only stem from their contribution in cash income, traction power and food, but also their role in determining individual's social status in the society. Livestock has also a role to play as medium of insurance to the farmers in time of crisis. Households with livestock have better access to food and are more resilient to shocks than those with none. This section gives an overview of the livestock holding of the sample landless households, and the challenges associated with the sector.

Table-5.8 shows cattle, sheep, goat, chicken and pack animals such as, mule and donkey are the common type of livestock reared in the area. Households' livestock holding is calculated based on Tropical Livestock Unit (TLU). Households' livestock

holding was converted in to TLU[5] using standard conversion factor *(see Annex-7)*. The survey reveals the average TLU among the sample households is 2.34 ranging from a maximum of 15.9 and minimum zero. It has also been noted that there is statistically significant variation between sexes in livestock possession; women headed households are still in a disadvantaged position in terms of livestock holding with an average TLU of 1.29, whereas the corresponding figure for male households is 2.78 (*See Annex 21*). In general 87% of the sample households reported to have some type of livestock, only the remaining , 23 or 13 % of the households reported not to posses any livestock ; indeed this is without taking in to account beehive. Sixty five percent of those who reported not to possess livestock are women headed households.

Table-5.8: Livestock Holding of Sample Households

Type of Livestock	Minimum	Maximum	Mean	Std. Dev.
Oxen	.00	3.00	.5967	.70537
Cows	.00	6.00	.6188	.83897
Heifer	.00	4.00	.4199	.63284
Bull	.00	2.00	.2291	.47172
Calf	.00	1.00	.0055	.07433
Goats	.00	15.00	1.8000	2.70402
Sheep	.00	12.00	.5028	1.61460
Donkey	.00	4.00	.3260	.68219
Mule	.00	1.00	.0110	.10483
Chicken	.00	30.00	3.3978	4.55055
Beehives	.00	5.00	.3039	.71604

Source: Household Survey, 2009

The small size of livestock holding both in absolute number and in terms of TLU signals the widespread poverty and assetlessness among the landless population in the study area. On the other hand, notwithstanding the fact that most of the households (99%) reported they graze their animals in communal lands, impact of landlessness on livestock holding should not be overlooked, particularly in terms of its adverse impact on accessing crop residue, which is the common source of fodder in drier months. This argument is further complemented by household heads response when they were

[5] One TLU is approximately equivalent to the body weight of 250Kg

asked to enumerate the major bottlenecks of livestock sector. The majority, 56% of them stated shortage of fodder as the major challenge for livestock rearing, followed by livestock disease (35%), lack of knowledge of appropriate animal husbandry techniques (6%), threat from increasing number of leopards (2%) and low productivity of local breeds (1%) respectively.

In similar fashion, KIs and FGDs have also emphasized how the sector's contribution is constrained by various factors including the critical shortage of fodder. With the increasing size of population and resulting shortage of farm land, the simplest coping mechanism by the farmers is colonization of communal grazing lands that eventually led to ever shrinkage of grazing lands. The age old tradition of the community that gives more emphasis on mere number of livestock rather than their productivity has also resulted in over population of livestock beyond the carrying capacity of grazing lands, which lead to overgrazing.

Animal diseases appear to be the second most important challenge to the livestock sub sector. The common killer diseases in the area include Anthrax, Black leg, lamp skin disease, Shoat Pox, PPR, Newcastle disease, Strangle; internal and external parasites such as Haemonchus, Trichostrongylosis, Trichuris, lungworm, tick and lice. It is worth mentioning at this juncture that most of the FGDs participants praised the efforts that have been made by veterinary workers at 'Woreda' and 'Kebele' level, yet they pointed out that, the veterinary section lacks the required capacity (personnel and equipment) to reach out to remote rural areas.

Another inherent problem of the livestock sector in the area according to FGDs, is poor local breeds in terms of their traction power and meat and milk production. They further noted variable livestock market; sensitive to climatic shocks that cause distress sell of livestock is another important problem of the sector

The government banned the killing of leopards to save this endangered prestigious species from extinction. The down side of this, however, is their number soon increased to the point where they began to cause havoc on the livestock population of the area. FGDs pointed out, nowadays leopards often come to residential areas during the night and kill animals especially goats, calf, and little donkeys and threaten whoever tries to

prevent them. They further noted unless solution is sought by the government, the leopards may even begin attack people. Selective killing by police based on proper study may be considered as possible solution for the problem.

Oxen Ownership of Landless Households:

In traditional plough mode farming system, which is typical in Dehana, oxen are the most important assets in crop production. Ownership of oxen is often an indicator of social status and asset position of farmers. Lack of oxen may adversely affect household's ability to produce food often forcing them to share-out their land and become vulnerable to food insecurity and destitution (ANRS: DPPC SERA, 2002). It is also a major limiting factor for landless households to get access to land through sharecropping since having oxen is among the major factors that land owners are considering in sharing-out their land. As indicated in table Figure-5.5 below, 52.5% of the sample households lack this crucial factor of production, 35.9% of the survey households possess only an ox; and only 11.6% of the households reported to have two and above oxen. This implies that the majority (52.5%) of the households are not only landless but also oxenless implying the degree of vulnerability to food insecurity in subsistence agrarian economy.

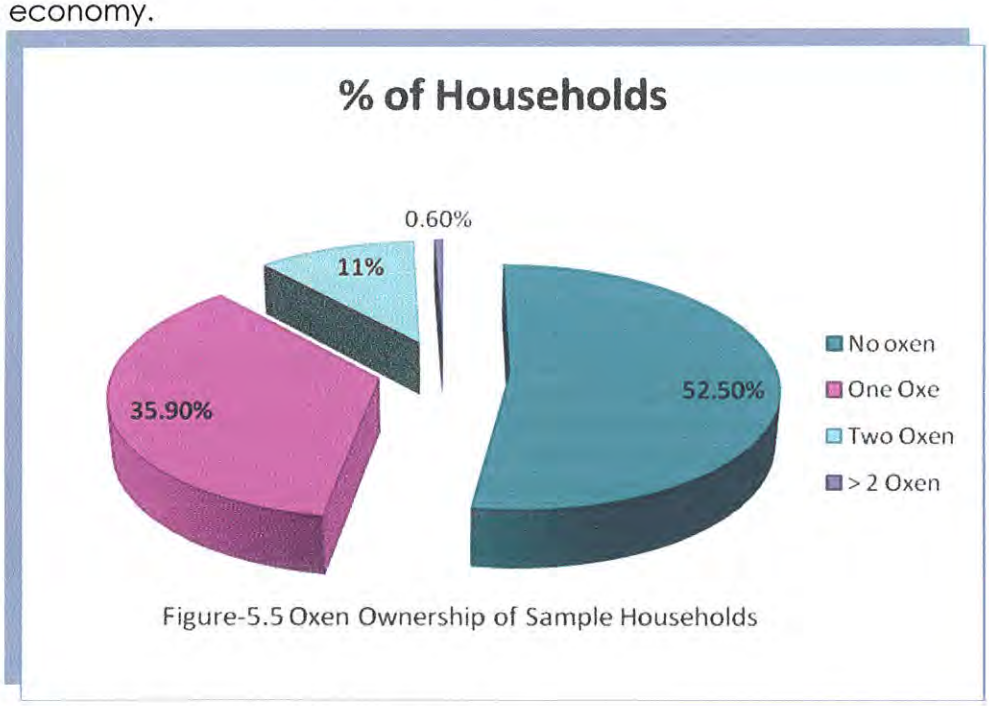


Figure-5.5 Oxen Ownership of Sample Households

Source: Household Survey, 2009

In predominantly agrarian society where alternatives other than agriculture are limited, if not nonexistent, lacking the two most crucial elements of traction power and land can easily lead to poverty and food insecurity. Nevertheless, as it has been reiterated above, these people are striving to manage to fill these gaps through various mechanisms as exchanging labor for draught power, renting (70 – 100 Birr per day) for a pair of oxen, gift from friends and relatives, and substituting their own labor (digging using hoe). Nevertheless, it has been noted from the survey result that the amount of land sharecropped-in among households possessing different number of oxen has shown a statistically significant mean difference at α=0.05 confidence interval.

According to the FGDs those with single ox fill their gap through a traditional mechanism called "*mekenajo*" which is entering pairing arrangement with other farmers with the same gap. In general the overall rate of oxenlessness among the landless, 52.5% is found to be higher than the 'Woreda' average, 46%; which is out of the usual expectation as landless households were thought to have better oxen possession as a strategy of filling their gap. Obviously this has its own adverse impact on timely land preparation and planting of land.

5.2.4 Access to Human Capital

Human resource constitutes the ultimate source of growth and development at all levels of societal heirarchy. Human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward development (Harbison, 1973 cited in Todaro, 1992). In the world where technological frontiers are being pushed back at a breathtaking rate, having high level of skill and knowledge will help to take advantage of modern technologies. Human capital doesn't refer to the mere number of people (man power), it rather include other important attributes like the knowledge and skill base, health, and work discipline. According to Oxfam (1996) the low earning power of people is partly a consequence of their low level of skill and literacy. Better educated people have higher level of productivity and adapt more easily to new technologies.

This section explores the level of human capital among the sample households in terms of the education level, morbidity and labor supply. Various parameters like number of economically active and non active members in the household are used to assess the labor availability of the sample households.

Literacy level of sample Households

With regard to literacy level of the overall household members, 54% are found to be literate, and the remaining 46% are illiterate. This data indicates the literacy level among the sample population is relatively good implying relatively better endowment of human capital among the landless households. These findings also give some impression about the potential of these households to adopt new technologies and techniques if they were given the opportunity to do so.

Morbidity among Household heads

With a view to assess the health condition of sample households, survey participants were asked whether any of their family members experienced illness during the past one year; and about 57% of them reported yes. Accident, poor sanitation, water born diseases and malnutrition were cited as the major causes of morbidity in their order of importance. About 14 of the cases (7.7%) didn't get any medical treatment for various reasons; like inability to afford medical costs, absence of medical facility in the nearby areas, and because of other traditional beliefs. Relatively higher morbidity among the sample households can be attributed to the widespread poverty and malnutrition.

Labor availability

To assess the labor availability of sample households, man equivalent (i.e. number of male and female members of a household 8 years and above multiplied by conversion factor; (see annex) and the proportion of economically active (15 – 64 years) to the total household size has been considered. Accordingly, on average, households have 1.85 economically active members, and the corresponding figure for man equivalent is 1.78 ME. On the other hand, it is worth recalling here that the dependency ratio as

stipulated in the first section of this chapter is 110% (i.e. 108% for young and 2% for old). Most of the household heads are young and the families are recently formed (58.8% after the year 2000; some 20.6% during 1996 to 2000; and only the remaining 20.6% before 1995). Hence, most of the children are just too young to engage in any feasible economic activity, though this doesn't mean that children are not involved in some important economic activities.

Therefore, man equivalent seem to provide reasonable estimation of the labor supply of households as it considers all age groups above eight. The survey reveals that the average size of men equivalent in the sample household is 1.78, which means sample household on average have labor equivalent of about 1.78 adult men.

In general, despite the high dependency burden, landless households are not labor deficient, most of them rather have ample labor and, if productively used, can extricate them from poverty. Relatively higher percentage of literacy is also an essential element of this fact.

5.2.5 Access to Economic, Social and Institutional Infrastructure:

The level of availability, accessibility and institutional competency of social and economic infrastructure in one way or another affects the overall well-being of people. The way people devise their livelihood strategy is also partly a function of their level of access to social and economic infrastructures. Well functioning social and economic infrastructure facilitates productivity and minimizes severity of disaster vulnerability.

This section focuses on the analysis of only some basic socials and economic infrastructures from a wide array of social and economic and institutional infrastructures in the area. Accordingly, access to credit, education, health care, market, potable water and agricultural extension will be discussed. In the previous chapter a general overview has been given on the condition of the remaining social and economic infrastructures including road, electric power supply, and postal services.

Access to Credit by the Sample Household:

Rural credit helps farmers to diversify and increase their income through applying agricultural inputs/techniques and engaging in nonfarm activities (Yared, 2001). However, relevance of access to credit particularly from formal micro finance institutions surpasses mere economic benefit; rather it can also help in increasing self confidence and build up acceptance and credibility in the community.

Fifty one (28.28%) of the total 181 sample households reported to have taken credit from different sources in the past one year period. When the data is disintegrated by sex, only 17% of female and 32% of male have confirmed to have taken credit. With regard to source of credit, as indicated in Table-5.9 below 82.4% of those 51 reported to get the service from formal institution – ACSI, farmers' cooperatives, NGOs and small and micro enterprise development offices. Only the remaining, 17.6% reported to have accessed from other informal sources like relatives, friends and traditional money lenders. Women seem to, or are forced, to prefer informal sources such as relatives and friends to men. For instance 33.3% of women get credit from such sources, whereas the corresponding figure for men is just 14.2%. The possible explanation to this may be long bureaucratic process in the formal sources and absence of collateral to join credit groups.

Table-5.9: Source of Credit Service to Sample Households

Source of credit	Frequency	Percent
ACSI	20	39.2
Cooperatives	18	35.3
family/relatives	5	9.8
Traditional money lender	4	7.8
ACSI and Cooperatives	2	3.9
NGOs	1	2.0
ACSI, Cooperatives, Micro and small scale enterprises	1	2.0
Total	**51**	**100.0**

Source: Household Survey, 2009

The survey result further indicated that, the majority, 71.8% of the sample households didn't take credit. Out of these, 33.3% (i.e.45.2% of female and 27.2% of male households) mentioned lack of collateral as the main reason preventing them from

accessing credit. According to FGDs, informal credit sources often require some sort of collateral or personal guarantee before giving any loan. The formal ones do not directly require collateral; rather they use a group collateral system that makes the group members accountable for any default in their groups. This system makes the community to frustrate in accepting landless, and people lacking some fixed asset like livestock in their groups. About 25.2% (i.e. 26.2% of female and 24.7% of male) stated that high interest rate and fear of risk of failure have prevented them from taking credit.

According to FGDs, the Amhara Credit and Saving Institution, which was the major source of credit in the sample PAs until recently, employed a group collateral system where total loan period and interest rate are two years and 18% respectively. Similarly, cooperatives, based on their sources of fund, charge 7.5% – 12% interest for their mediating service and the loan period is five years. FGDs also noted that, due to the relatively lower interest rate and longer loan period, farmers incline to take loan from the cooperatives, yet their service is confined to only safety net beneficiaries and their own members and unable to accommodate the vast majority of people. On the other hand, the interest rate charged by traditional money lenders which can reach 100% and above is unbearable to the poor. It has been also noted that the local church is giving in kind loan to the poorest, but with strict requirement of collateral or personal guarantee, and with very high interest charge.

Other reasons that cause farmers refrain from taking credit include absence of the service (12.2%), long bureaucracy in formal credit institutions (3.3%) and the like. Relatively higher percentage (24.4%) stated that they do not take credit just because they do not want; which may be explained because of absence of remunerative investment venture to invest their loan.

Similarly, from the FGDs, it has been noted that farmers are somewhat reluctant to take loans partly due to high interest rate; for fear of defaulting other group members and lack of remunerative investment opportunities. On the other hand, it is always hard for the poor, elderly and disabled people to participate in credit and saving groups as they are believed to default by other members. On the other hand, what is worse is

ACSI stopped providing the service in the sample PAs for almost two years because of low loan repayment rate and increasing number of defaulters.

NGOs like ORDA and EECMY are also providing in kind loan where farmers are given animals like sheep, goat, and poultry and are required to pay back their off-springs to be transferred to other farmers. EECMY operates in two of the three sample PAs; whereas ORDA operates in one of the sample PAs. Although such intervention was highly appreciated by FGDs, yet the coverage of these NGOs is limited to very few PAs.

Adequate access to subsidized credit can improve participation in nonfarm activities, which is believed to be another feasible option available to the landless. However, this option seems to be curtailed due to absence of adequate subsidized credit facility in the sample PAs. The vast majority of the landless households either do not access credit at all or are exposed to exploitation by traditional money lenders that charge an interest rate of up to 100%/annum.

From the above discussion, it has been noted that only safety net beneficiaries are allowed to have access to subsidized loan of up to 5000 Birr from farmer's cooperatives. Safety net beneficiaries are the poorest of the poor categorized as chronically food insecure. Priority is often given to those that do not posses any livestock to those with some. Some of the FGDs participants complained on the selection criteria as it doesn't consider endowment of households with other resources such as land, human capital and others, and simply focus on livestock possession. On the other hand, the landless youths are trying to cope with lack of land through having an ox or some other livestock, which put them in a disadvantage position in terms of accessing to the safety net program. Hence the selection criteria seems to lack some sort of rationality by considering livestock possession as important selection criteria to the safety net program, and yet putting a blind eye on the landlessness issue.

With regard to the purpose to which they use credit; 51% reported to have used for purchase of livestock (including oxen), 25.5% for trading; 11% for consumption, 5.9% for house construction, and only a miniscule minority 6% reported to have used for the purposes such as education, clothing and buy inputs. Relatively higher proportion of consumption indicates the level of food insecurity.

Table-5.10: The purpose for which Credit is used

Purpose of using credit	Frequency	Percent
Buy other livestock	26	51
Trading	13	25.5
Purchase of food	6	11.8
House construction	3	5.9
Buy farm inputs	1	2.0
Education	1	2.0
Clothing and seed purchase	1	2.0
Total	**51**	**100.0**

Source: Household Survey, 2009

Access to Agricultural Extension:

The aim of agricultural extension is to increase agricultural productivity through improving availability of inputs and provision of technical advice to the farmers. Various agro-ecology based agricultural packages are designed in different disciplines (crop, animal, and natural resources) by the Bureau of Agriculture that are contextualized and implemented at site level. According to KIs, in each of the three sample PAs, 3 development agents (DAs) specialized in different fields (Animal husbandry, crop production, and natural resource conservation) are mobilized. They are stationed in their respective PAs and regular technical backstop is offered to them by subject matter specialists at 'Woreda' level.

Farmers are advised to participate in minimum package, yet only safety net program beneficiaries are allowed to participate in integrated/family package. A farmer is said to have participated in minimum package if he/she implements either one or two of the following packages, compost preparation, animal rearing, vegetable production, homestead woodlot, modern beehive, organic fertilizer, inorganic fertilizer, vegetable and fruit tree production, and animal fattening. If a farmer participated in more than three of these packages simultaneously, he is said to have participated in family/integrated package. The difference between minimum and family packages is not, however, merely the number of packages in which the farmer participated. Family or integrated package involves preparation of different menus of packages from which a farmer chooses some based on his endowment of labor, assets, and income.

Family package also involves preparation of business plan by the DA and the household members which is a step by step process starting from assessing the situation of households, identifying the gaps, and devising solutions with the farmers themselves. Farmers eligible for such package are allowed to access subsidized credit of up to 5000 Birr for the realization of the plan. They are also closely supervised by DA, supervisor and 'Woreda' experts, and once their per capita income reaches 4200 Birr, they are graduated from the program as they are believed to be self sufficient. As this job is very tedious and time consuming one DA is supposed to follow-up only 50 households.

Despite all these efforts, however, as indicated in Table-5.11 below only 43% (i.e. 40% of female and 44.5% of male) of the sample households reported to have got agricultural extension service. Out of those who reported to have accessed extension service 63% got training; the remaining 27.6%, 5.3% and 3.9% reported to have got technical advice, farm demonstration and experience sharing visit, respectively.

Table-5.11: Households Access to Agricultural Extension

	Sex of the respondent					
	Male		Female		Total	
	Count	N %	Count	N %	Count	N %
Did the household get agricultural extension service						
Yes	57	44.5%	21	40.4%	78	43.3%
No	71	55.5%	31	59.6%	102	56.7%
Type of Agricultural Extension service in the previous year						
Training	37	67.3%	11	52.4%	48	63.2%
Experience Sharing visit	3	5.5%	0	.0%	3	3.9%
Farm Demonstration	3	5.5%	1	4.8%	4	5.3%
Technical Advice	12	21.8%	9	42.9%	21	27.6%

Source: Household Survey, 2009

Similarly, as shown in Table-5.12 below only 19.7% of the sample respondents reported to have accessed different agricultural inputs; meanwhile the majority 80.3% (78.6 % of male and 84.6% of female) answered that they didn't get any agricultural input during the past one year. Among those who claimed to obtain agricultural inputs, 6.2% got breeding sheep and goat, equal proportion of 5.1 % got improved crop and vegetable seed and the remaining 2.2 and 1.1% got beehive and poultry respectively. Surprisingly, none of the farmers have reported to use inorganic fertilizer on their farms.

Table 5. 13 Type of Agricultural Input Used by Respondents

	Sex of the respondent					
	Male		female		Total	
	Count	Column N %	Count	Column N %	Count	Column N %
Fertilizer	0	.0%	0	.0%	0	.0%
Improved seed	8	6.3%	1	1.9%	9	5.1%
Vegetable seed	7	5.6%	2	3.8%	9	5.1%
Poultry	2	1.6%	0	.0%	2	1.1%
Improved beehive	3	2.4%	1	1.9%	4	2.2%
Breeding sheep/goat	7	5.6%	4	7.7%	11	6.2%
None	99	78.6%	44	84.6%	143	80.3%
Total	126	100.0%	52	100.0%	178	100.0%

Source: Survey, 2009

According to FGDs, low level of agricultural extension coverage and low adoption rate of technologies is partly attributed to poor performance of some of the technologies (especially improved seed and inorganic fertilizer) to the harsh climatic and edaphic condition of the area. Some of the FGDs were also questioning the technical capability and commitment of DAs in delivering appropriate extension service to their clients. They further noted that DAs give little emphasis to their regular duties as most of them are busy in their own affairs (distance education). High price of inputs, low level of access to credit, and recurrent drought induced risk of failure have also contributed for the low adoption rate of inputs.

Access to Market:

Access to market affects livelihood options available to the community; and determine price of agricultural produces. Good access to market and appropriate marketing information facilitates rural transformation. As it is usually the case in Ethiopia, market centers serve as place of inception for urban centers that have a profound significance for rural development. Urban centers serve as collection and distribution centers of the rural produce; source of agricultural inputs and consumer goods and services for the rural community; help for the development of small scale agro-processing industries; and source of nonfarm employment opportunities.

According to FGDs, there is one market center in each of the sample PAs, but on average sample households has to walk a distance of 1.49 hours to reach the nearest

market. This is mainly due to the rugged terrain and poor accessibility of the area. According to KIs, despite the general increasing trend in the price of food crop, fluctuation of price due to seasonality is still high. On the other hand, price of livestock is more affected by drought induced distress sell than seasonality.

Access to Health Services:

A healthy society is one of the crucial elements for long term development and welfare of a country. The health of a society is both a means and end of growth and development (Todaro and Smith, 2009). Healthy people live longer; have high labor productivity and minimum absenteeism from work.

Accessibility and adequacy of health infrastructures have significant contribution to the health of a community. In this regard, as indicated in Figure-5.6, the survey result indicates 33% of the households can access health institution within a distance of less than an hour; 49% within a distance of 1 -2 hours walk and the remaining 14% and 4% has to travel a distance of 2 -3 hours and above 3 hours to reach the nearest health facilities, respectively. Despite this encouraging improvement in health post coverage in the past few years, there is still a single health station to serve the whole population of the 'Woreda', 109,687 people. Similarly there is no any hospital in the 'Woreda', and people have to travel to Sekota , the zonal capital, to get referral service. KIs stated lack of medicaments, and inadequate transportation facility as the major challenges of health facilities in the area. On the other hand, FGDs complained about absence of professional ethics and lack of competence of health workers as well as people's inability to afford treatment costs as serious problems of the health care delivery system in the area.

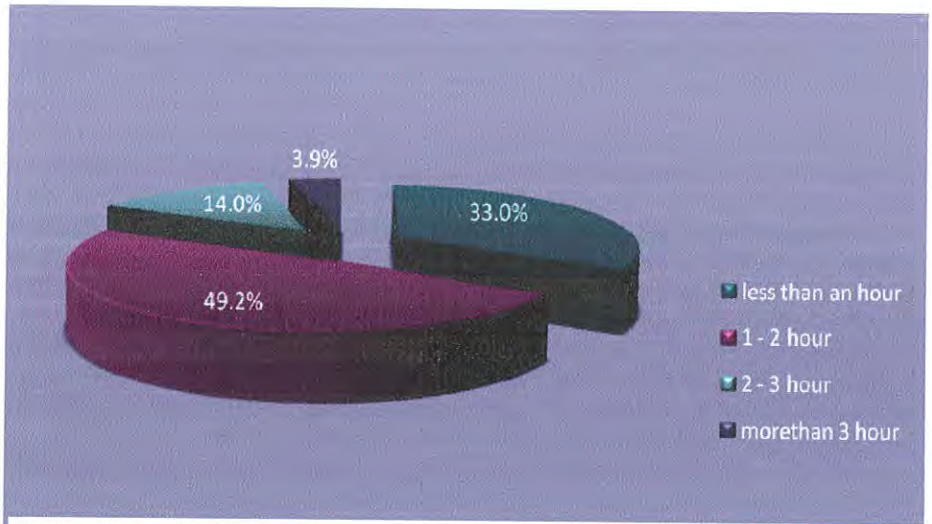


Figure-5.6 Walking Distance of Households from Health Facility

According to KIs, at least one health extension worker is assigned to work in each of the PAs, yet their service is confined to prevention and provision of first aid activities. The prevention work is carried out based on 16 different health packages including construction of toilets, mosquito net, and preparation of separate rooms for livestock and people, improved stove, vaccination, VCT etc. Encouraging achievements are being registered through this strategy; preparation of dry pit latrines and family planning are worth mentioning here.

With regard to the major health hazards in the area, KIs described: internal parasite, respiratory tract infection, non-bloody diarrhea, skin disease, pneumonia, gastrointestinal disease, arthritis, trachoma, other eye infection, bloody diarrhea are the most frequent health problems in order of their importance. According to the same source, HIV/AIDS is causing concern far beyond a realm of discrete event; destroying the young and productive work force and creating social and economic disruption in the society. Although exact prevalence rate of the pandemic in the area is not known, out of the total 10, 386 people that undertook the test in the past one year about 154 (1.5%) are found to be positive. But, KIs warns that this figure may not exactly depict the actual picture as most of the people undertaking the test are healthy looking and do not by any means suspect they might contract the virus. Some traditional practices common in the area like - early marriage, female genital cutting, tattooing, extraction

of milk teeth, uvulectomy, unsafe sexual practice, and the 'kimit' or mistress practice are cited to be the major vehicles for the transmission of the virus.

Access to Education:

The ability to absorb modern technologies and developing the capacity for self-sustaining growth and development are mainly functions of education (Todaro and Smith, 2009). The principal institutional mechanism for developing human skill and knowledge is the formal education system. According to FGDs, access to education seems very good in the entire sample PAs. One of the sample PAs, Amdework Zuria, is located close to the 'Woreda' capital, and can easily benefit from primary, secondary and technical and vocational schools in the capital. One first cycle (grade 1-4) and one second cycle (grade 5-8) primary schools are found in Biwul 'Kebele', whereas only first cycle primary school is found in Birbira 'Kebele'. As presented in Figure-5.7 below 72% of the sample households access primary school within a walking distance of less than an hour. And the remaining 25.5 and 2.3% access within a walking distance of 1-2 and 2 -3 hours walk respectively.

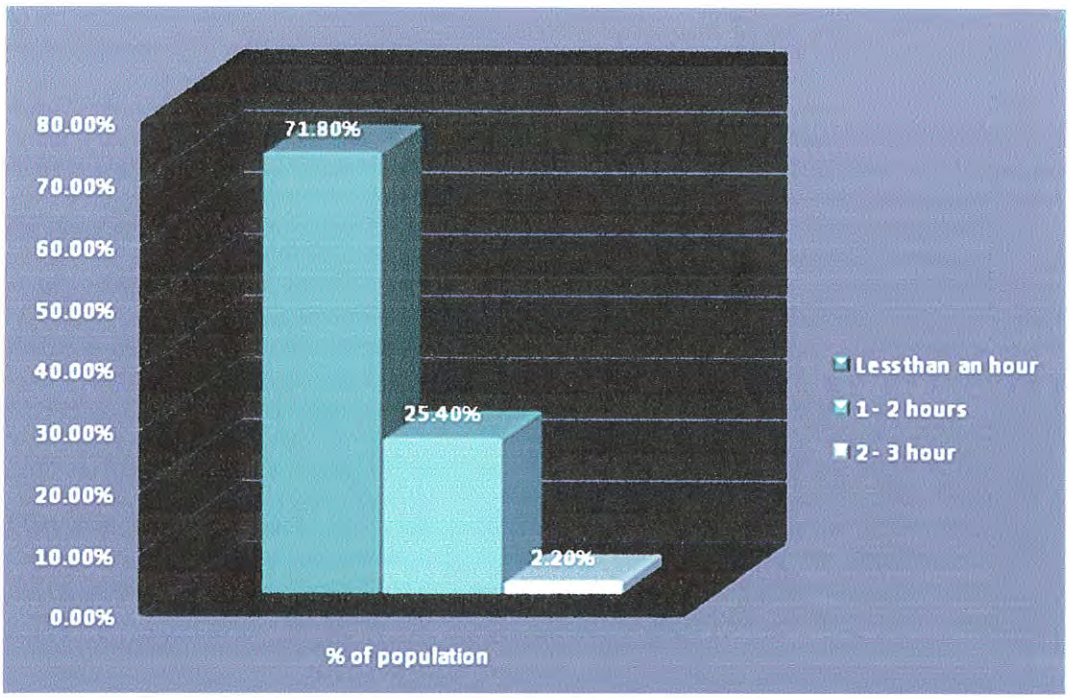


Figure-5.7 Walking Distance from The Nearest School

Source: Household Survey, 2009

According to KIs, inadequate supply of laboratory facilities; high turnover of teachers; absence of qualified teachers in the market; lack of academic competence and commitment of some of the teachers; assignment of teachers beyond their specified level; high level of absenteeism of students; and extreme poverty of parents to afford food and educational material for their children are some of the major factors contributing to the low quality of education in the area.

Access to Clean Potable Water:

Availability of clean potable water is an essential component of food security and basic human right. Access to adequate clean water minimizes the degree of vulnerability to water born and communicable diseases such as child diarrhea. The survey results show 61.3% and 3.9% of the sample households have access to relatively safe drinking water from protected springs and pipe, respectively. The remaining 34.8% of the sample households imbibe water from unsafe surface water, i.e. 18.2% from unprotected springs; 13.3% from river; and 3.3% from wells.

As is usually the case in Ethiopia, women bore the burden of fetching water for the whole family. Fetching water is weary business that consume a significant portion of women's' time that would otherwise been used for other productive activities. Thus, it is not only availability but also the distance that matters in minimizing the burden on women. In this connection the survey data indicates encouraging 94.5% of the households have access to water within a distance of less than an hour walking distance.

Participation in Informal Social Institutions:

Participation of households in informal social support institutions such as, exchange arrangements and mutual support mechanisms are critical in enabling them to meet their resource deficiencies; and thus to achieve food security (Yared, 2002). 'Idir', 'Mahiber', 'Wonfel', 'Senbete', credit group and other sharing arrangements are the most common forms of informal social institutions in the area. In this connection the

survey results indicate about 16.6% of the sample respondents reported no to participate in any of these social institutions. On the other hand the majority 83.4 have reported to have participated at least in one of these institutions. As most of these institutions are reciprocal in nature, the main reason mentioned for not participating is inability to pay back.

5. 3. Diversification and Major Income Sources of Landless Households:

This section is devoted to the analysis of the major coping livelihood strategies adopted by the landless households to derive their annual income. But, before directly going to the analysis of each of the major income sources, a brief account of the level of diversification of income is presented below.

5.3.1 Livelihood Diversification of Sample Households:

Livelihood diversification means a process by which rural families construct diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standard of living (ELLIS, 2000). Peoples' ability to diversify their portfolio of income sources is determined by their access to and control over resources; the institutional arrangement; and trends and shocks. Similarly the reason why people diversify their income can also vary from minimizing risk arising from factors such as landlessness/small land holding to a mechanism of investment in diverse activities with a view to improve livelihood outcomes in the future. For this particular case, however, the former justification of diversification sounds more than the later as the subjects are poor landless.

Farm Diversification

One form of farm diversification in agriculture is the level with which farmers are engaged in crop and animal production. In this regard, as typical in most highland of Amhara, mixed farming where farmers practice both crop and animal production is the common type of agriculture in study area. The survey result indicates about 92% and

86.7% of the sample households have reported to practice crop production and animal rearing, respectively.

Another important way of diversifying agriculture is through increasing the number of type of crops grown. Regarding the type of crop grown, 77% of sample households grow sorghum, 70% grow Teff, 66% grow horse bean, 54% grow barley, 37% grow wheat, 7% grow fieldpea, 3% grow chickpea and 3% grow vegetables. The first three crops dominate both in terms of total area coverage and total production, and overall cereals accounted for 77.6% of the total crop grown followed by pulses, 22.3%. The level of crop diversification indicated how households try to minimize risk of failure by increasing the number of type of crops they grow. This can be further elaborated by the survey data that indicates 73.6% of the sample households reported to grow four and above type of crops in the past cropping season. And only 15% and 11% of the households reported to grow two and one type of crop respectively (see figure-5.7) .

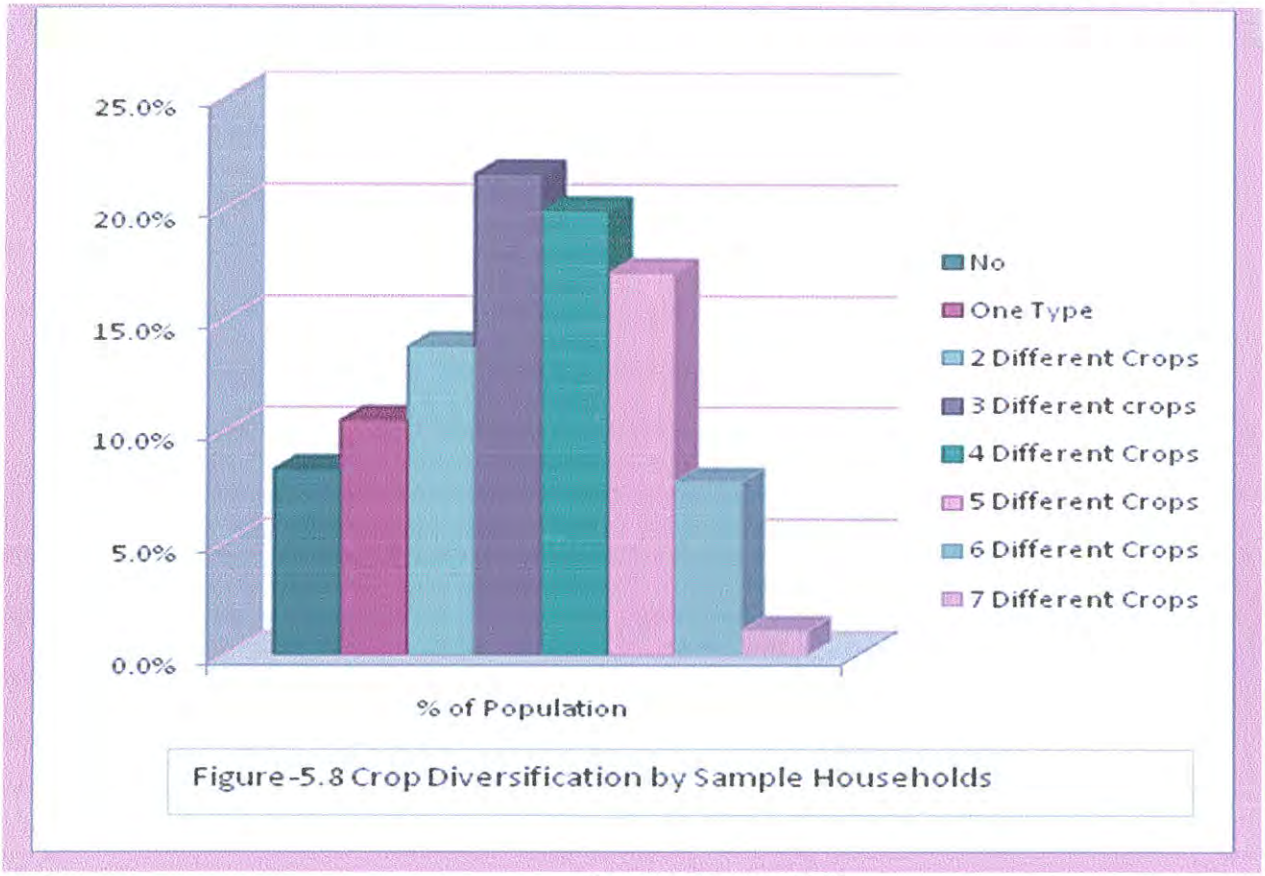


Figure-5.8 Crop Diversification by Sample Households

Source: Survey, 2009

Similarly, as shown in Figure 5.9, about 67.3% of the sample households reported to have located their farm plots in three and above different location, and 19.7% of the households located their farm plots in two different locations. It is only the remaining 13.6% have located their plots in a single area. The relevance of locating farm plots in different geographical locations to mitigate the adverse impact of localized incidence of pest epidemic, hailstorm, and to a certain extent drought should not be overlooked.

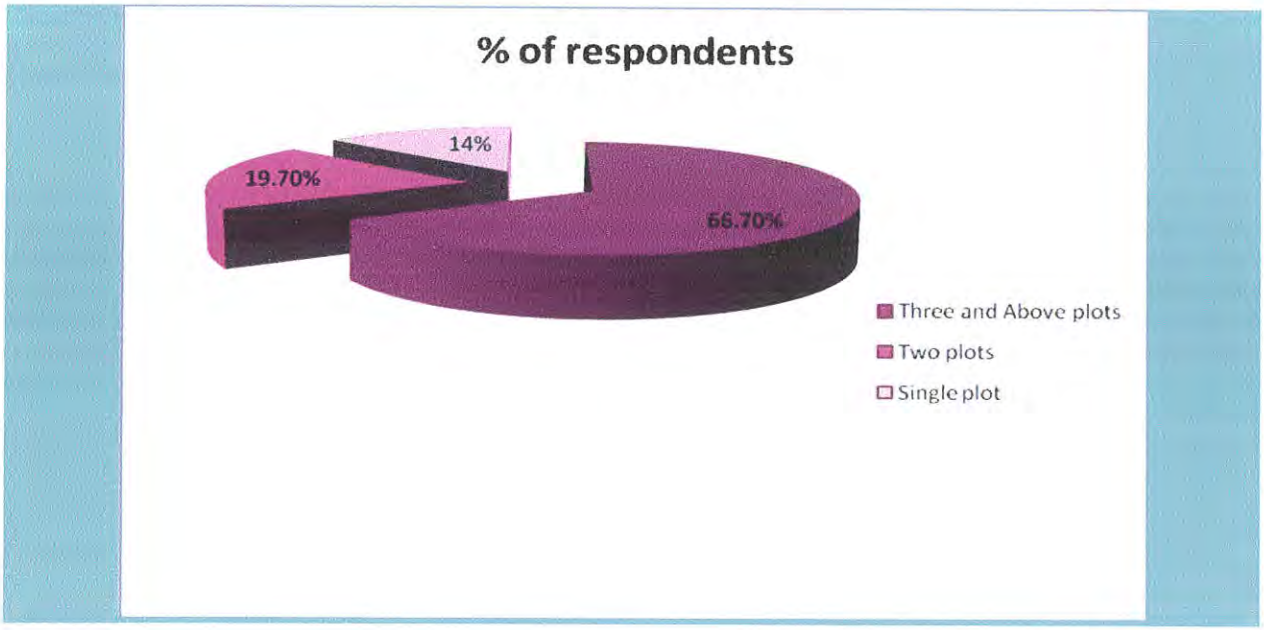


Figure 5.9 Numbers of Parcels of Land Cultivated By Respondents

Survey results also indicate that 86.7% of the total sample households (93% of male and 71.7% of female) reported to have participated in animal rearing (i.e., including chicken and beehive). Farmers rear a wide array of different animals including cattle, sheep, goat, pack animals (donkey, and mule); poultry, and beehives.

In general the overall farm diversification of the sample households is high and indicating how the landless households try to diversify their income source from different agricultural activities and how they mitigate risk through diversification of farm activities.

Off-farm Income Diversification

About 90 (69 male and 21 female) or 49.7% of the total sample households reported to derive some part of their annual income from off-farm sources. Households are engaged in various types of off-farm activities including local agricultural labor, sale of wood and charcoal, sale of poles, sale of fodder, and sale of sand and stone. But the contribution of sale of agricultural labor, as shown in Figure- 5.10 below, both in terms of total sum and number of participants is high. With regard to off-farm diversification, 65% (60% male and 81% female) obtain off-farm income from a single source, i.e. agricultural labor. 30% (33% of male and 19% of female) get their off-farm income from two different sources; and only the remaining 4.4% (all male) get from three and above different sources. This indicates the level of diversification within off-farm income is low.

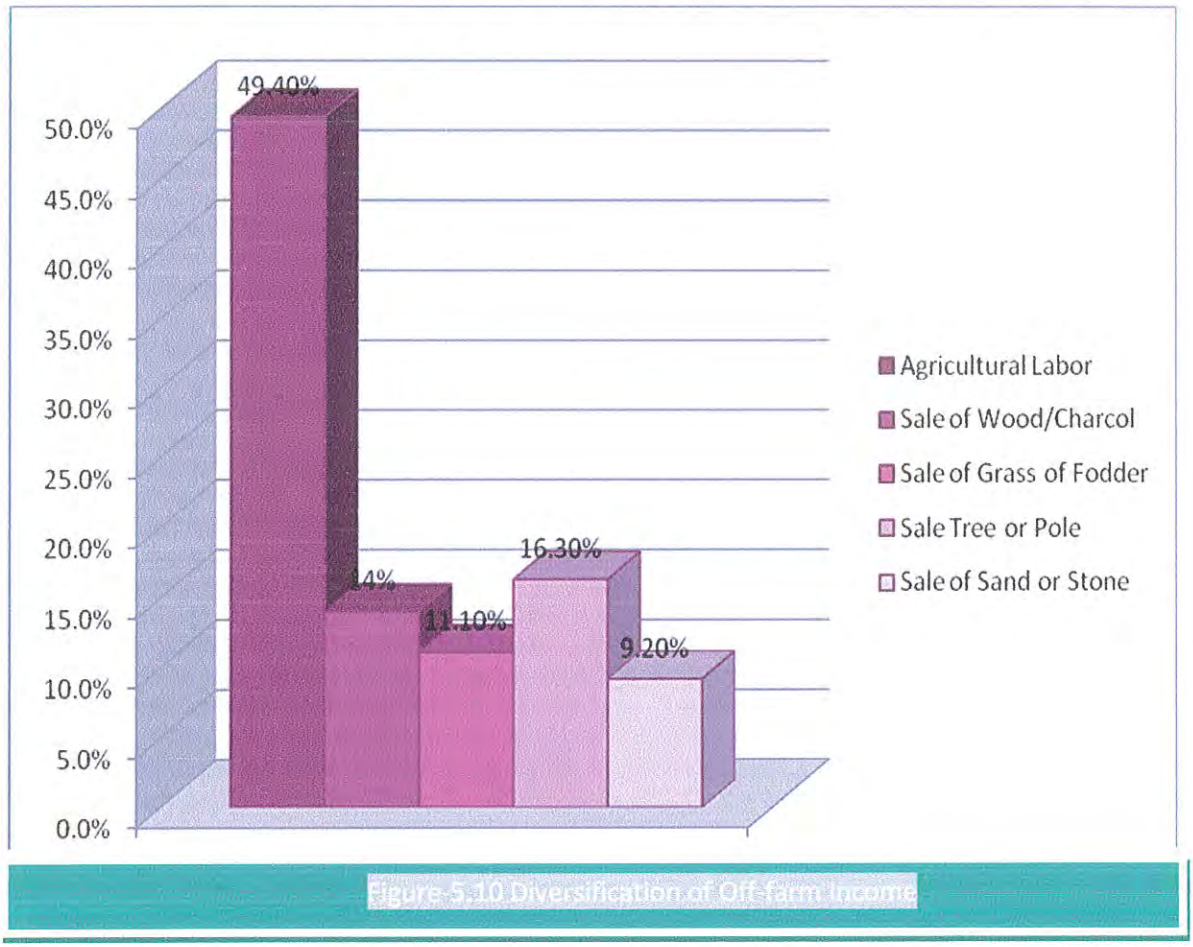


Figure-5.10 Diversification of Off-farm Income

Nonfarm income Diversification:

As presented in Figure 5.11, landless households involve in a wide array of different nonfarm activities to derive their income. Over twelve different types of nonfarm activities are indentified in the area. 140 or nearly 77.3% of the total household have participated and generated income from one or more types of nonfarm activities. Similarly, out of the 140 households that reported to earn nonfarm income, 49% obtain income from a single source; 34% from two different sources; 12% from three different sources, and a minuscule minority of 5% derives their nonfarm income from more than three different income sources *(see Annex-10)*. But what is interesting here is the level of nonfarm diversification among men and women is almost the same. On the other hand there is some sort of differentiation between the two sexes in terms of type of nonfarm activity they perform. Female often tend to engage in activities like hair dressing, petty trading, and sale of local beverages, whereas male heads seem to prefer crop and animal trading, carpentry, religious services and non-agricultural labor. This could be explained by the difference in labor and capital requirement of the activities, social norms and the difference in endowment of factors among the two sexes.

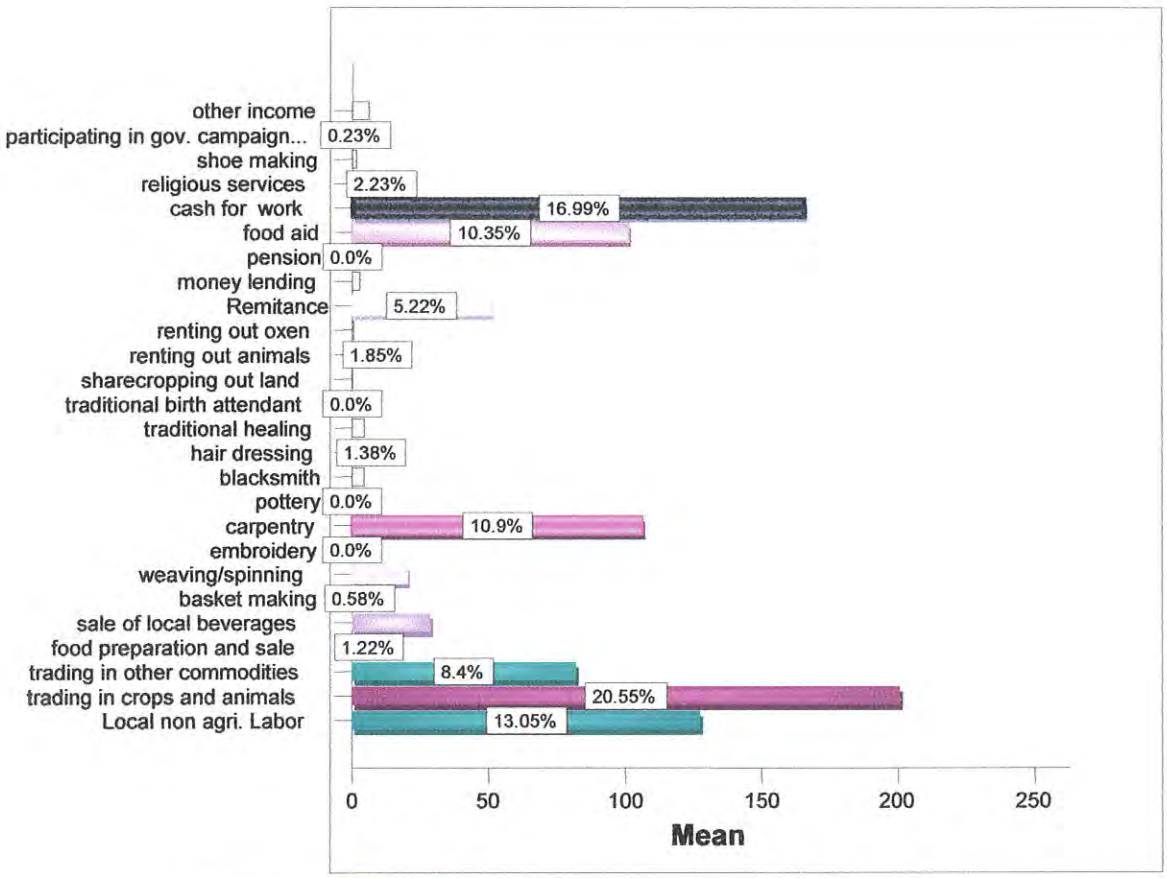


Figure-5.11 Types of Nonfarm Activities Implemented by Respondents and Their Percentage Contribution to nonfarm income

Migration:

Seasonal migration, which refers to temporary movement of one or more family members from the resident house during slack time and come back during peak periods with the aim of complementing households' income, constitutes one component in the annual income of some landless households. According to the survey results, 30 households or 16.6% of the total sample households have derived some portion of their annual income from migration. 18.9% of women and 15.6% of male headed households had one member of the household migrated to other areas for some period last year to supplement household's annual income. With regard to where

people migrated, 36% migrated to urban areas within the region, but outside the wereda, 23.3% to urban areas outside the region, 16.7% to other rural areas within the region, and 16.7% to urban areas within the 'Woreda'.

About 50% and 36.7% these people migrated during planting and harvesting seasons, respectively; whereas the remaining 13.3% migrated after harvest. According to FGDs, the reason why most of the landless migrated during planting time is because it is the time when the grain stock begins to decline and some other income is required to bridge consumption. They further noted that landless people also migrate during harvest time because of the demand in the labor market of hosting areas; and as most of them have small land size they soon complete their harvest and move to other areas to supplement their income. Husbands account for 56.7% of those migrated followed by wives 26.7%. In rare cases the whole family migrates and such cases constitute only 16.3% of those migrated.

5.3.2 Component of Annual Household Income:

Farm Income:

Although all sample households are landless, yet ironically, larger portion of their annual income (78.3%) comes from agriculture. It has to be noted that for the sake of convenience and to suit it for the forthcoming food security/insecurity analysis, households' crop outputs are converted in to cash in terms of 2008 market price.

Under the category of farm income, crop production appears to dominate constituting 81% of the overall farm income of households followed by income from sale of livestock (18%), and income from sale of animal products (1%). The average farm income for male and female headed households' is found to be 5450.8 Birr and 2055.8 Birr respectively, showing a statistically significant difference at (α=0.01) between the two sex categories (Annex19 for calculation).

As it has been expected, the amount of farm income showed a statistically significant positive correlation at (α=0.01) with the following household variables; age of the household head, family size, farm size, number of parcel of land, oxen number.

On the other hand, farm income doesn't show any statistically significant difference with variation in educational level of household head, access to credit, and access to agricultural extension services. This shows agriculture in the area doesn't seem to benefit from these important variables due to inadequacy or inefficiency of the services. Conversely a statistically significant mean farm income difference at (α=0.0%) has been observed between households participating in social institutions and those that do not participate in any social institution. Generally the mean farm income of participant farmers is found to higher than non-participant farmers. This indicates how social relations are significant for the landless households in filling their factor deficiencies (see *Annex 13, 16, 17, 18 and 19 for the statistical calculations in this section).*

The other interesting finding was the positive and significant correlation between age of the household head and farm income. The finding conforms to those findings stated in the first section of this chapter, pointing out how the landowners consider experience of the tenant as condition to share out their land. i.e., older and experienced landless heads have better access to sharecrop-in land than the younger and inexperienced ones.

Level of farm diversification, in this case number of parcel of land and number of type of crops grown, was also found to positively and significantly associate with farm income showing how farm diversification positively contributes to farm output and minimize risk of failure.

Nonfarm Income of Landless Households

Nonfarm income constitutes the second most important component of annual income of landless households. 140 of the total 181 sample households drive 2 to 100% of their annual income from nonfarm activities. The total share of nonfarm income to the total

households' annual income is found to be 17.15%. Unlike farm income no statistically significant variation has been observed between male and female headed households in their mean income, which is 1077 and 733.4 Birr per year, respectively. Income from trading, local non agricultural labor, carpentry and remittance constitute 85.46% of the total nonfarm income of landless households.

Households' annual nonfarm income is significantly and positively correlated at (α=0.1) with household head's age implying older household heads have better access to resources and experience than the younger and newly formed households. Similarly nonfarm income it also positively and significantly related at (α=0.1) with educational level of the household head, signifying better educated households have better access to nonfarm income as some of the nonfarm activities require some level of literacy. Surprisingly, however, nonfarm income doesn't show any statistically significant relationship with variables such as family size, size of farm land, and oxen number. This could be because of the fact that farmers endowed with these factors tend to focus on farm activities than nonfarm activities. On the other hand, nonfarm income as expected is found to be negatively correlated with distance from market centers indicating how access to market can affect farmers' income from nonfarm sources *(see Annex 14 for the statistical calculations)*.

Survey participants were asked about their major challenges to participate in nonfarm income generating activities, and 87.3% reported lack of seed capital, lack of the required skill and knowledge as the major restraining factors from participating in nonfarm activities. The remaining, 12.7% mentioned other reasons like lack of spare time and possibility as their reason not to participate in nonfarm income.

Off-farm Income of Landless Households:

Off-farm income constitutes another important portion of households' income of the landless. The survey result indicates 90 households or (49.7%) of the total households earned on average 302.8 Birr from off-farm income. Off-farm income shows statistically significant negative association (α = 0.05), household variables such as farm size, oxen

number, TLU, and family size of households. This implies the better of farmers do not seem to focus on off-farm activities, and it is only the most poor that derive their major income from off-farm. This is further confirmed by the fact that off-farm income is negatively correlated with farm and nonfarm income of households. On the other hand off-farm income shows statistically significant positive relation (α = 0.05) with the level of income diversification of the household, which seem to complement the argument claiming diversification is necessity rather than choice. Resource poor farmers often tend to diversify their income source in a bid to complement their income and smooth their household consumption. The contribution of off-farm income to the overall annual income of households is about 2.64% *(for statistical calculations see Annex 14, and 16 - 19.)*

Income from migration:

Although the contribution of income from migration to the total households' income is minimal (only 1.94%), it has been realized from the survey result that it is an important copping livelihood strategy for the most vulnerable groups. About 30 households (16.6% of the total sample households) got on average 739.63 Birr from migration. As indicated in Table-14 below, Income from migration is significantly and negatively correlated with farm land size. Similarly, statistically insignificant, yet negative association is also observed between income from migration and other household variables such as, oxen number, family size and TLU size. The possible explanation for this is, only the poor lacking the resources such as land, livestock and labor are migrating, and migration is use as the last resort for the poorest families. This is further confirmed with the fact that share of income from migration tend to decline as the total annual income of households rise.

Table- 14: Association between Income from migration and Other Household Variables

		Family size of respondents	Age of the respondents	Oxen Number	Number of Tropical Livestock Unit	Farm size in hectare
Income from migration	Correlation	-.066	.065	-.097	-.150	-.175
	Significance (2-tailed)	.378	.389	.197	.045	.018**
	Df	178	178	178	178	178

** *significant at α=0.01, * *significant at α=0.05 * significant at α=0.1

Source: Household Survey, 2009

5.3.3. Total Annual Income of Households:

Total households' annual income is the sum of households' income from farm, nonfarm, and off-farm and migration sources. This section highlights household's annual income, what constitutes it and how accesses to and control over different resources determine annual income of households. The mean annual income of households is 5694 Birr with statistically significant (α= 0.05) difference between the mean income of male and female headed households, 6838.83 Birr and 2929.95 Birr, respectively. In general, as indicated in Figure-5.12 below, farm income constitutes the majority, 78.27% of the total annual income of landless households followed by nonfarm income which accounts for17.15%, off-farm income 2.64% and migration and 1.94%. The aggregate contribution of nonfarm, off-farm and migration to the household annual income is 21.73% which is below the African average 40 -45% (Barrett, Reardon, and Webb, 2001), Sub-Saharan average 30 -50% (Reardon, 1997 cited in Ellis, 1998). However it is still higher than Amhara region average which is just 11.3% Devereux et al., 2003 cited in Misganaw, 2008). All but the later findings confirm that the level of income diversification among the landless in Dehana is low, which is totally paradoxical as conventionally landless are often believed to derive the majority of their income from nonfarm activities.

This can be attributed to low level of infrastructure development, low level of urbanization, low level of credit and under development of the nonfarm sector. So it is lack of any other viable option that forces these people to heavily depend on farming even though they are landless and farming is not as such an attractive venture in the area.

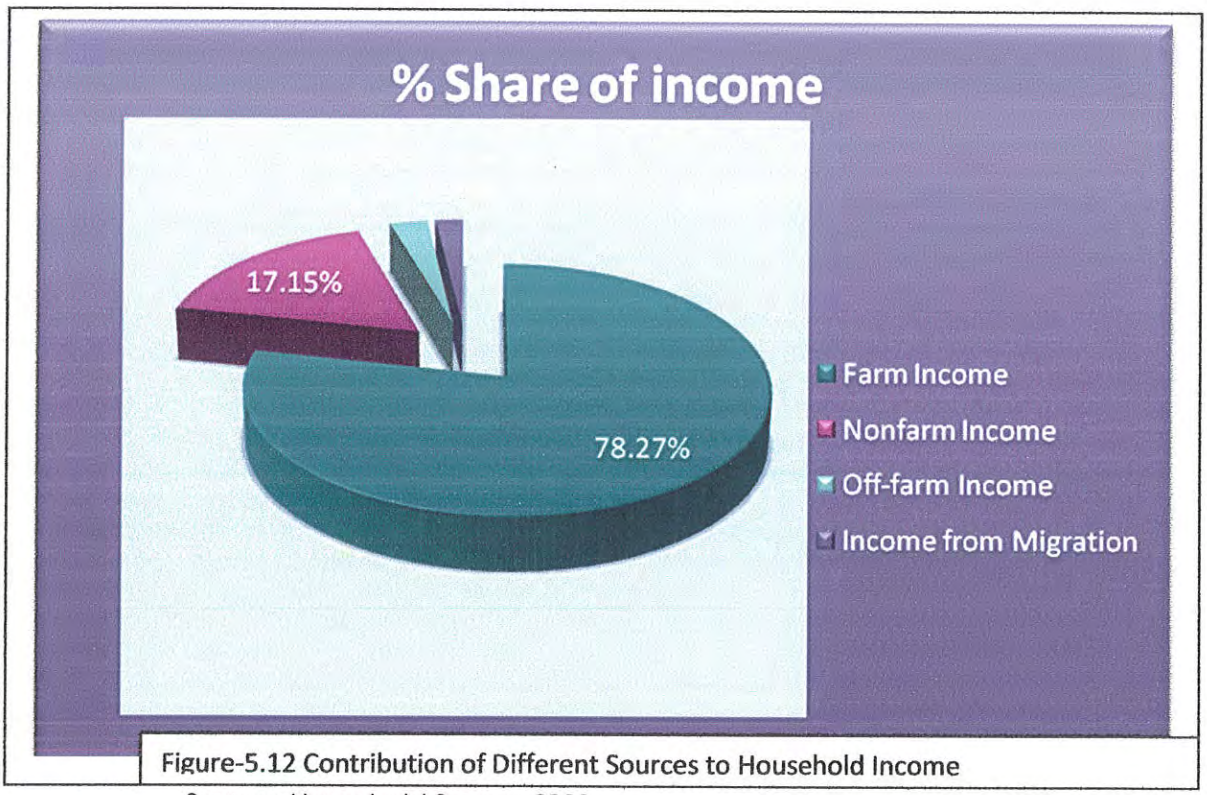


Figure-5.12 Contribution of Different Sources to Household Income

Source: Household Survey, 2009

5.3.4. Association between Households' Annual Income and Other Variables

A partial correlation and independent sample T-test analysis has been conducted to see how households' annual income related with other resource endowments. Variables including age of the household head, educational status of the household head, family size, size of TLU, number of oxen, and farm size, were considered in the analysis. Accordingly the following outcome has been observed (See Table-15, and Annex16, 17, 18).

Educational level of the household head: Contradictory to the usual thinking, variation in educational level of the household head doesn't seem to significantly affect annual income of landless households. This could be explained in two ways; lack of enabling environment such as availability of technologies, alternative employment opportunities, infrastructure, credit and other facilities have restrained better educated people from applying their skill and increase their income. And the other possible reason questions the significance of the education system in solving practical problems on the ground.

Family size: Annual income shows a statistically significant positive association with family size i.e. there is an increasing trend in annual income with increase in number of family members. This is apparently due to increasing number of labor force in bigger families. Number of economically active member in a household shows stronger positive association with annual income than total family size of households.

Oxen number: A statistically significant difference at (α=001) has been observed between families with different number of oxen. Obviously households with more number of oxen got higher income than those with less. This finding is in line with the findings of Eshetu (2000) and the findings in the above sections of this paper; landless households with more draught power has better chance of sharing-in more land than those with less. In general, oxen number shows positive correlation with the annual income of households.

Access to Agricultural Extension and Credit: no statistically significant difference in total annual income of households has been observed between families accessing agricultural extension and credit service and families without. This is mainly due to inadequacy and inefficiency of the services in the area. As it has been reiterated earlier in this chapter, the level of agricultural extension service is too weak among the landless households to bring meaningful difference in their income. Similarly, it is only safety net beneficiaries who are getting subsidized credit access and these people are the very poor often with no livestock. This has limited the level of complementarily of different income sources, which makes the impact of credit to the total household income insignificant.

Farm size: Annual income of households shows statistically significant association with farm size cultivated (α=001). Generally households with better access to farm land got higher income than those with less. As the significant portion of annual income of households comes from farm activities, this result is within the realm of expectation. Obviously better off farmers have better access to sharecrop-in land than the poor and inexperienced ones.

TLU Holding: Household's annual income shows statistically significance difference (α= 0.01) with household's livestock possession. Apparently households with higher number of livestock have got higher income than those with less. This is due to livestock's contribution to cash income and traction power.

Table 15. Correlation of Households' Annual Income with Household Variables

	Diversification	Number of economically active members	Oxen Number	TLU number	Farm size (ha)	No. of parcel land	Number of Type of crop	Age of HH	Family size
r[6] (correlation)	-.036	.517	.420	.586	.570	.578	.579	.440	.492
Sig. (2-tailed)	.668	.000***	.000***	.000***	.000***	.000***	.000***	.000***	.000***
Df	144	144	144	144	144	144	144	144	144

** *significant at α=0.01, * *significant at α=0.05 * significant at α=0.1

Source: Household Survey, 2009

5.4. Level of Erosion of Asset among Landless households:

In order to assess, the asset base of landless households in Dehana, survey participants were asked to rate whether they own some of the basic assets. Accordingly, only 1.8% reported to own jewel; 29% reported to own radio, 13% own table and chair and 43% of the respondents own wrist watch. On the other hand 93%, 84% and 79 % of the respondents affirm to own hoe, grain storage facility and plough.

With regard to housing units 92.3% of the total 181 respondents have built their houses from wood, stone and thatches and only the remaining 8.7% reported to construct their roofing from corrugated iron sheet.

In general the overall asset ownership of sample households is low, implying high level of assetlessness and vulnerability.

5.5. Food Security and Coping Strategies of Landless Households in

5.5.1. Food Security Status of Landless households:

This section explores the food security status of the landless households in Dehana from different perspectives. The first approach is comparing the total income of households with a predefined food security cut-off point or food security benchmark; and the

[6] R: Pearson correlation

second is personal testimonies of the household heads about their food security status. Sale of big livestock and proportion of consumption expenditure to the total household expenditure are also taken as proxy indicators of food insecurity.

As it has been stated in the methodology part of this paper (see chapter-3), a food security bench mark is established based on the amount of cash required to purchase 225 Kg of cereal and other nonfood items. 2200Kcal is taken as the minimum necessary Kcal per adult equivalent per day for a healthy functioning of a person; out of this 70% or 2100Kcal is believed to be obtained from cereals (ANRS: FSCDPO, 2007). With the presumption a Kg of cereal provides 3400 Kcal, as established by Ethiopian Nutrition Institute, 225 Kg of cereal is needed per AE (Ibid). Using the 2008 market price of cereals in Dehana area, 1237.5 Birr is required to purchase 225 Kg of cereal. Other expenses including clothing and foot wear, education and communication, healthcare and sanitation and tax are estimated to be 529.7 Birr per adult equivalent; these expenditures are estimated to constitute about 30% of the total annual expenditure of households (Misganaw, 2008). Hence, a minimum food security line of Birr 1767.2/AE is established, and household whose annual income beyond this line are categorized as food secure, whereas those below this line are categorized as food insecure. The aggregate income of households is computed by summing up households' income from farm, nonfarm and migration and off-farm activities. Meanwhile it has to be noted that as rural households in Dehana use most of their production for their own consumption purpose, the total crop output was converted in to cash based on market price of 2008 and included in their annual income.

Based on this assumption, nearly 52% of the households are found to be food secure and the remaining 48% fall below food security line. The proportion of food insecure people among the landless population seems high compared to the overall percentage of food insecure rural population in the region, i.e. 34.7% (ANRS: FSCDPO, 2007), yet this figure is still below the national estimated percentage of food insecure people in rural Ethiopia, i.e. 52% (FDRE, 2002). On the other hand, the survey result indicates disproportionately higher percentage of food insecure people among female headed household (69.8%) compared to male headed households (39.1%). But this is not out of the realm of expectation as the female households are deprived of access

to two crucial factor of production in subsistence farming; land and adult male labor, compared to male who lack land but have adult male labor. Some of the key informants and FGDs estimated the proportion of food insecure people in the area to be about 60 – 70% , which could lead to a temptation of concluding the landless are in a better condition than those with land; but this requires further detail assessment and empirical investigation. Table 5.15 presents the percentage share of food secure and insecure households.

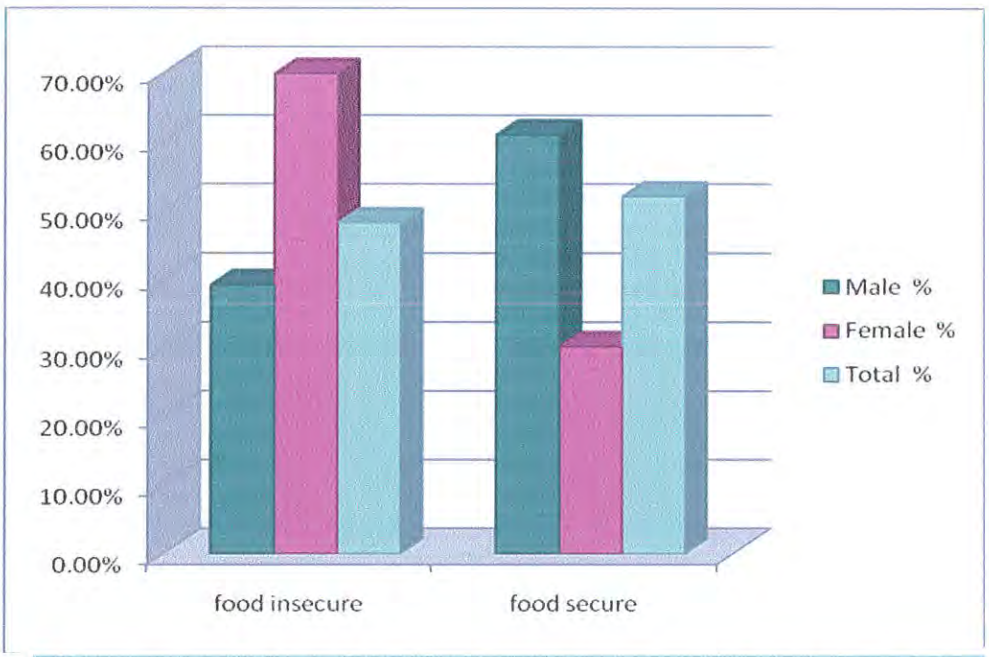


Figure-5.13 Food Security Status of Sample Households by sex

Source: Household Survey result, 2009

On the other hand, the productive safety net program that has been going on in the area since the year 2005 might have its own impact not only because some of the sample households are directly benefiting from the program, but also due to its trickledown effect through stabilizing price of food items in the local market. With this consideration; sample households food security status has been computed without considering their income from safety net program; the result shows an increase in the food insecure part of the population to 52% and the food secure group decreased to 48%, in other words, it reversed the figures. But the impact is still disproportionate; food

insecure women headed households increased from 69.8% to 75.5%, whereas the corresponding figure for male headed households has just increased from 39% to 42.2%. This shows that female headed households are more dependants on external support than male headed households.

Household heads were asked how long can they cover their food consumption from own production, and only 19% reported to cover 9 – 12 months; 42.5% stated 6 -9 months; 28% reported 3 -6 months and the remaining 9.4% reported to cover less than 3 months. The overall percentage of people who reported to cover their household consumption for six months and above from their own production for more than six months is just 61.5%.

An attempt has been also made to estimate the severity of food insecurity from the proportion of farmers that sale big livestock and use for consumption. Seventy nine out of the total 181 (43.6%) have reported to have sold large animals (30 of them oxen, 40 other cattle, and 9 equines). Analysis of the purpose to which households use the money from sale of livestock reveals 75% of the households reported that they have used for consumption purpose. Based on all these complementary findings, it may be safe to conclude that the magnitude of food insecurity among the landless households in the sample PAs is high.

Such conclusion is indeed without prejudice that landlessness is just part of myriads of factors leading to food insecurity and poverty in the area. A number of multifaceted and interwoven underlying factors such as poorly developed social and economic infrastructure; extreme erosion of productive asset base of the people due to frequent shocks (drought); rising population growth and resulted degradation of the physical environment are also important contributing factors to the problem. Similarly, undeveloped nonfarm sector and poorly diversified rural livelihood have also a bearing on current cycle of poverty and food insecurity in the area.

5.5.1.1. Characteristics Features of Food Secure / Insecure Households

Table-5.16 below illustrates the major characteristics of food insecure/insecure households. Consequently food insecure households are characterized by: larger

family size; less endowment of productive resources such as livestock and farmland; less diversified annual income source; and households with less participation of in informal social institutions. Similarly women headed households bore the lion's share in the total food insecure households.

Table -5.16 Characteristics of Food Secure and Insecure Households

Variables	Food Insecure (N=87)	Food Secure(N=94)	Test Statistics (T,)
Age of Household Head (Mean)	29.33	29.51	- .205
Family Size (Mean)	4.17	3.63	2.245**
Oxen Number (mean)	.5287	.6596	- 1.249
Tropical Livestock Unit (mean)	1.9796	2.6752	-2.169**
Farm size in hectare (mean)	.9971	1.4727	-3.500***
Income Diversification	2.23	2.45	-1.806*
Farm Income in Birr (mean)	2968.4782	5834.15	-6.274***
Off-farm income Birr (mean)	120.30	178.64	-1.154
Nonfarm income Birr (mean)	732.22	1415.23	-3.684***
Total Annual Income (mean)	3820.97	7428.03	-7.745***
Access to Credit (%)	28.7	27.7	X^2 = .026
Access to Agri. Extension (%)	44.8	41.9	X^2 = .153
Participation in informal social institutions (%)	74.7	91.5	X^2 = 9.179***
Sex of Household Head (%)			X^2 = 14.196***
Male	57.5	83	
Female	42.5	17	

** *significant at α=0.01, * *significant at α=0.05 * significant at α=0.1

Source: Household Survey, 2009

5.5.1.2 Factors Influencing the Probability of Being Food Secured/Insecure

Using the binary logistic regression model, attempts have been made to identify the major determinants of probability of being food secure/insecure. The dependant variable is dichotomous variable, which takes 1 if the household falls in food insecure group and 2 otherwise. The results presented in Table-5.17 shows that family size significantly increases the probability of being food insecure, which is because of its adverse impact in resource sharing. Conversely, farm size, being a married couple, participation in informal social institutions, and educational level, significantly increase the probability of being food secure. Similarly, though weak, level of income diversification also increase the chance of being food secured.

Table-5.17 Variables Affecting Probability of being Food Secure/Insecure

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
Age_of_Respondent	.081	.055	2.199	1	.138	1.085	.974	1.208
Family_size	-.923	.202	20.786	1	.000***	.397	.267	.591
Farm_size_in_hectare	1.005	.282	12.716	1	.000***	2.732	1.573	4.748
Diversification_of_Annual_income	.297	.233	1.623	1	.203	1.346	.852	2.125
Level of education	.448	.200	5.013	1	.025**	1.565	1.057	2.316
Participation in Social_institu (1= participated; 0 otherwise)	1.423	.590	5.813	1	.016**	4.150	1.305	13.199
Access Agri. Extension (1= accessed; 0 otherwise)	.032	.381	.007	1	.934	1.032	.489	2.180
Credit Access (1= accessed; 0 otherwise)	-.354	.430	.680	1	.409	.702	.302	1.629
Sex Respondent (1= male, 0 otherwise)	.566	.637	.788	1	.375	1.761	.505	6.142
Marital Status (1= married; 0 otherwise)	.813	.670	1.470	1	.225	2.254	.606	8.385
Constant	-3.762	1.531	6.042	1	.014	.023		
Correct estimation= 76.7%								

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
183.561(a)	.306	.408

** *significant at α=0.001, * *significant at α=0.05 * significant at α=0.1

Source: Household Survey, 2009

These findings provide some clue about some of the areas that need to be given due emphasis in the effort to achieve food security at household level.

5.5.2 Sequencing of Coping Strategies in Time of Food Shortage:

People often employ various strategies to mitigate the ill impact of food shortage. Such coping strategies often depend on the resource base and scale of the problem. Although coping strategies are so diverse, dynamic and highly related with access to different resources, severity of disaster and institutional arrangements. It has been realized from the survey result and FGDs discussions that even in the midst of crisis farmers are kin to their livelihood strategies up to a level of tolerating certain degree of hunger before taking desperate actions that have irreversible impact on their livelihood. Although, it is often difficult to catch up and map the sequence of the wide

array of coping strategies employed by farmers, the survey result has made it possible to get some pattern of coping strategies employed by the landless at different levels of intensity of the crisis.

Accordingly, it has been noted that at the initial stage of the crisis households' employ simpler strategies such as reducing frequency and amount of meal, participating in food for work activities, eating less preferred meals, and borrowing food/cash from relatives. At the middle of the crisis farmers employ strategies like sale of small livestock, eating wild food, seeking agricultural labor in the area, and sale of wood and charcoal. Finally when the crisis gets severe, farmers begin to take desperate measure as the last option to stay alive. Some of these measures can have severe long-term consequence in their future livelihood; or even irreversibly change future livelihood pattern of the household. Such strategies include sale of large animals including oxen, sale of farm implements, withdrawing children from school, migration, and in few extreme instances mortgaging land.

To summarize, the major demographic, socioeconomic and institutional factors characterizing the sample respondents have been discussed in this chapter. Various issues, *inter-alia*, what constitute the landless households in Dehana; their demographic and socioeconomic features; their degree of access to and control over resources; their survival livelihood strategies; their food security situation as well as the factors determining the food security position of these households were thoroughly discussed. And the next chapter will recapitulate the main themes of the whole thesis and based on which propose some achievable solutions to the ongoing landlessness problem in the area.

CHAPTER VI
SUMMARY, CONCLUSION AND RECOMMENDATION

6.1. Summary

The primary objective of this research was to investigate the survival strategies and food security situation of one group of the community that are denied of access to one of the most crucial factor of production in rural Amhara. The study was conducted in Dehana 'Woreda' of the Anhara National Regional State, one of the structural food insecure areas in the region.

The study was principally based on household survey conducted on 181 sample household heads (70.7% male and 29.3% female heads) randomly selected from the list of landless households in the three purposefully selected sample PA administrations. The information obtained from the survey has been consolidated by the data and information obtained through various PRA tools such as FGDs, key informant interview, personal observation as well as review of secondary sources.
The sample households have the following major characteristics: close to 76% of the sample household heads are below the age of 35 year and the remaining 24% are within the age limit of 35 – 43; higher rate of dependency ratio (110%); average family size of a household is four people; the majority (74.6%) are married; and relatively higher level of literacy (59%).

The survey results indicate about 35% of the total household heads in the sample PAs are found to be landless. Out of these landless households about 90.6% are youth that were made ineligible to access land due to the age requirement during land redistribution. The remaining landless groups include demobilized soldiers; people displaced from other areas, and people by-passed for no reason.

With regard to their survival livelihood strategies, paradoxically, the landless are also heavily dependent on agriculture oriented activities to derive their subsistence.

livelihood system of the households extricate itself from heavy dependence on risky rain fed agriculture.

On the other hand, the communities often devise a mechanism by which they can handle new phenomenon like landlessness using the resources at hand. In this regard, the informal land markets operating in the area that give some loophole to the inflated problem of landlessness are worth mentioning. But problems attached to them, such as favoring the better-off, absence of clearly set modalities (subjectivity) and lack of legal enforcement minimize their significance. Furthermore, their ability to sustainably solve the problem of landlessness in the future is also highly questionable. Another downside of informal land markets (in this case sharecropping) is its adverse impact on sustainable use of land due to the tenant's reluctance to invest on the land for fear of eviction by the landowner.

In general, besides short term measures that needs to be taken to temporarily curb the food security situation of the landless population, a creative and strategic policy initiative need to be put in place to fundamentally alter the grim picture of food insecurity in the area.

6.3. Recommendation:

After coming to learn all the multifaceted problems and the level of poverty and food insecurity on the ground, the temptation of flooding lots of recommendations, which sometime could even be bit ambitious can't be totally ruled out. However, given the apparent capacity limitation of the government and other pertinent development actors, it has been tried to harness issues that are seemingly ambitious and focus on issue that are within the realm of possible in the foreseeable future. Nonetheless, some of the recommendation still may not be amenable to the short term policy interventions, and can only be addressed in the long term. The recommendations are not just researcher's private creations; rather they are synthesis of variety of views and suggestions by people on the ground including key informants, focus group discussants and other professionals that were contacted in the course of the research.

One of the short term solutions to the landless is trying all possible means to access them land. During the FGDs particularly those who were representing the landless were pointing out the presence of land in the hands of a number of civil servants who are permanent employees and earning sufficient salary from the government. Some KIs and landless FGD participants were also mentioning the presence of reserve land that had been owned by the deceased that do not have legal heir. Hence a detailed inventory of such lands needs to be made so that distribution may be made to some of the landless. It has also been noted during the discussions that there are some communal lands that are potentially irrigable using water pumps and even through traditional irrigation system. Such lands should also be surveyed properly and given to organized landless youth with some starting capital and proper training on intensive farming.

Similarly, as per the information from key informants, there is a vast area of land in the 'Woreda' closed from animal and human interference for regeneration purpose. Although such lands are highly degraded and cannot be used for any economically viable activity in the short term, they can still be distributed to the landless so that they may properly manage and draw some benefits from sale of hey and even plant seedlings. Experiences from the neighboring North Wollo Zone have shown the significance of such initiatives not only to the landless youth but also to the land itself. But these needs to be implemented with greater caution and closer supervision as most of these lands are highly sensitive to degradation.

The other possible solution still within the sphere agricultural sector is animal husbandry. The significance of livestock sector in the area has been described in the above section. Waghimra in general and Dehana in particular is known for its livestock resources mainly for its small ruminants and beekeeping. Through mitigating the bottlenecks associated with the sector such as animal epidemics through training and deployment of para-vets from the community members, the possibility of making attractive venture to the landless is within the realm of possible. In this regard due emphasis should be given to the apiculture sector for its low demand of land and labor. Most of the FGDs participants were explaining the effectiveness of the introduced

improved beehive, Zander, in increasing the quality and quantity of honey from 5 – 10 Kg from a traditional hive to 25 -30 Kg/hive.

This is a tremendous achievement; and can be taken as a viable solution to the problem of landless youth. In this regard the farmers were complaining about the high price of the improved hive, which is increasing year after year. The government and other development actors should give due attention on this issue in terms of subsidizing the price and proper targeting of the landless that have the capacity and interest to be engaged in such activities. Other possible option is increasing access to subsidized credit with longer loan period to the landless so that they can pay their loan after two three harvests.

The other solution still within the sphere of agriculture is provision of legal enforcement or recognition to rural informal land markets, in this case, sharecropping. As it has been mentioned in the above sections informal land markets are playing critical role in factor allocation and accommodating the landless. However, the study revealed that these markets lack some sort of fairness, and disproportionately favoring the land owners at the expense of the tenant. Lack of legal recognition of these markets highly minimize bargaining power of the landless/tenants. And thus providing some sort of legal recognition and improving the modalities of agreement can benefit both parties and encourage sustainable use of land.

But there is a general consensus among all parties, including the landless themselves, that such things are just temporary solutions and cannot fundamentally solve the problem of the growing landlessness in the area. In view of this, a more creative and sustainable solution needs to be sought to the problem.

Expansion of the nonfarm sector is another important solution to the landless. Farming in the area is highly susceptible to slight deviation in either amount or distribution of rainfall. In light of this, the significance of nonfarm and off-farm activities that are not correlated with rainfall is very high. However, as it has been stated in the above sections the contribution of nonfarm and off-farm sector to the total annual income of landless households is small about 22%. This is due to various reasons like lack of marketable skill, absence of start-up capital, poor demand, and poor infrastructure and marketing.

Thus, under the current situation, well targeted public employment generation programs are instrumental in solving the problem of landlessness. In this regard, the ongoing productive safety net program is contributing a lot in averting mass starvation and protecting the asset base of the community through enabling them to bridge the food gap during the critical months. According to KIs, the program, on top of benefiting the direct beneficiaries has also a trickle down impact through stabilizing the price of crops in the local market.

However, clear setbacks are observed in the process of targeting through including inaccurate proxy indicators like livestock ownership. The landless are struggling to fill their factor deficiency by making desperate attempt to access draught power so that they can access land from the informal land market. But this coping mechanism seems to be misunderstood by 'Kebele' administration and made them to be ineligible for the safety net program as such people are categorized with the better-off. The other important issue that requires the attention of policy makers in the process of implementing programs like productive safety net is, the beneficiaries need to get time for their own activities. It has been noted during the FGDs that safety net beneficiaries are engaged in public works for most of the days in a week, which give little chance to them for undertaking their own affairs and productively invest their loans. In general the nonfarm sector has to be further promoted through encouraging the inception and development of urban and market centers; improving the communication and other infrastructure; improving access to credit and marketable skill training; and increasing availability of public works.

Finally, the landless are not just an inland; they share both the problems and opportunities which other community members are facing; this is indeed notwithstanding their high vulnerability to this problems. Therefore addressing the chronic poverty and food insecurity in the area will in one or another way addresses their problems and improves their livelihood. In this regard, the government and other development actors should give due emphasis to the following issues:

- Well developed infrastructure not only increases the range of people's livelihood option but also improve payoff from these option. Despite encouraging

Journal of Agricultural and Development Economics Vol. 1, No 1, 138-153, Addis Ababa

Chambers, R. (1983). *Rural development, putting the Last First*. London, Longman

De Vaus, D.A. (1996). Survey in Social Science Research. London: ULC Press

Debebe Habtewold (1995). " *Food Security: A Brief Review of Concepts and Indicators*" in Mulat Demeke, Wolday Amha, Simeon Ehui, Tesfaye Zegeye (eds.) Food Security Alleviation In Ethiopia: Problems and Prospects; Agricultural Economics Society of Ethiopia, Addis Ababa.

Degefa Tollosa (2005). *Rural Livelihoods, Poverty and Food Security in Ethiopia; A case study at Erensa and Garbi Communities in Oromia Zone, Amhara National Regional State*, Norwegian University of Science and technology, Doctoral thesis, Trondheim.

Dehana 'Woreda': FEDO (2004). *Socio-Economic Data of Dehana 'Woreda' (Amharic)*. Amdework

Dehana 'Woreda': FEDO (2008). *Socio-Economic Data of Dehana 'Woreda'* (Amharic), Amdework

Dejene Aredo (2004). *Contribution of NGOs to Household Food Security : The case of World Vision Ethiopia*; ANRS. Addis Ababa, Ethiopia.

Desalegn Rahmato (1984). *Agrarian Reform in Ethiopia*, Uppsala: SIAS. Dong . Xiao-Yuan. Institute of African Studies.

Desalegn Rahmato, (1992). *The Dynamics of Rural Poverty: Case Studies from a District in Southern Ethiopia*. Monograph Series 2/92, IDS, AAU

Desalegn Rahmato, (2004). *Searching for Tenure Security? The Land System and New Policy Initiatives in Ethiopia*, FSS, No.14. Addis Ababa.

Devereux, S and Maxwell, S. (2001). Food Insecurity in Sub-Saharan Africa, University of Natal Press Piemartzburg. South Africa

Devereux, S. (2000). Food Security in Ethiopia. A discussion paper for DFID, Addis Ababa

DFID (2001). *Sustainable Livelihoods Guidance Sheets*, London

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