INDIRA GANDHI NATIONAL OPEN UNIVERSITY (IGNOU)

DEPARTMENT OF RURAL DEVELOPMENT

THE ROLE OF AGROFORESTRY PRACTICE FOR SUSTAINING THE RURAL LIVELIHOOD:-THE CASE OF BORECHA WOREDA, ILLUBABOR ZONE OF OROMIA REGIONAL STATE, ETHIOPIA

MASTER THESIS RESEARCH PROPOSAL

PROGRAM: RURAL DEVELOPMENT

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INTRODUCTION

1.1 Background

No problem of underdevelopment can be more serious than food insecurity that has an important implication for the long-term economic growth of the low-income counties (World Bank, 1986). The series of African food crises in the seventies and eighties have led to sustained interest in the various factors that influence peasant food security (Yared, 1999). According to Gezahegn (1995), despite the available resources and the efforts made by the respective countries' governments, food insecurity has remained one of the most crucial issues in Sub-Saharan Africa (SSA). The causes of food insecurity, in Sub-Saharan Africa, are highly related with poverty and mainly include unfair rural development policies, war, lack of technological changes, institutional weakness and lack of basic infrastructures, and drought (Young, 1992).

Ethiopia is one of the African countries known for structural food insecurity (Greater Horn of Africa Food Security Bulletin/GHAFSB, 2004). Food insecurity is one of the defining features of rural poverty, particularly in moisture deficit northeast highland plateaus. Food insecurity is divided into two categories namely chronic and acute. Chronic food insecurity is commonly perceived as a result of overwhelming poverty indicated by a lack of assets. Acute food insecurity is viewed as a more of a transitory phenomenon related to man-made and unusual shocks such as drought (Federal Democratic Republic of Ethiopia/FDRE, 2002).

Food insecurity in Ethiopia derives directly from dependence on undiversified livelihoods based on low-input, low-output rain fed agriculture. The concept of food insecurity incorporates low food intake, variable access to food, and vulnerability–a livelihood strategy that generates adequate food in good times but is not resilient against shocks. People are food insecure not only because their food consumption level is low, but also because their access to food is variable and unpredictable over time; from one year or season to the next (Devereux, 2000).

The problem of food insecurity has continued to persist in the country as many rural households have already lost their means of livelihood due to recurrent drought and crop failures (Ayalneh, 2002). In many parts of Ethiopia most households are only able to meet their food requirements for less than six months of the year. This is particularly true in low land areas where rainfall is generally low and is extremely variable and unpredictable that leads to low yield and frequent crop failures (Kidane, 2003).

According to FDRE (2002), the causal factors of increasing food insecure caseload in the country are the interaction between environment, high population growth, diminishing land-holdings, and a lack of on-farm technological innovation which led to a significant decline in productivity per household. These trends have combined with repeated effects of drought over the years. However, causes of food insecurity in the lowlands pastoral and agro-pastoral areas are much more complex.

The Ethiopian pastoral areas are estimated to occupy about 61-65% of the total area of the country and are home to 12-13% of the total population. In addition, out of the total estimated livestock population of the country, the pastoral areas constitute approximately 30% of the cattle, 52% of the sheep, 45% of the goats, and 100% of the camels (Beruk, 2003b). However, recent livestock population estimates obtained from the pastoral areas raise these figures to 49% of the cattle, 47.5% of the sheep, 51.5% of the goats, 100% of the camels and 12.9 % of the equines. Livestock are critical to the well-being of lowland households in terms of income, savings, food security, employment, traction, soil fertility maintenance, fuel and the like. This sub-sector is also important to the national economy, contributing 16% of total Gross Domestic Product (GDP), one-third of agricultural GDP, and 8% of export earnings. Improvements in the sub-sector, therefore, have the potential to contribute significantly to national income and to the welfare of many poor rural families (World Bank, 2001).

The Ethiopian Somali Regional State (ESRS) is one of the predominantly pastoral and agro-pastoral areas in Ethiopia. The production system of the Region is divided into three categories: large nomadic pastoralism, livestock-based mixed farming and crop-based agro-pastoralism. About 80% of the population in the region depends on the first two production

systems while the reaming 20% depends on crop-based livestock production (Ethiopian Roads Authority/ERA, 2003). According to ERA (2003), despite the huge potential of the region for livestock production, agro-pastoralism is very underdeveloped which is characterized by low production and productivity, vulnerable to serious environmental and agro-ecological degradation, food shortage and recurrent drought. Hence, food insecurity and famine are the facts of life in the agro-pastoral areas of the region.

In order to address the challenges of food insecurity in ESRS and other parts of the country, FDRE issued Ethiopia's Food Security Strategy (EFSS) in November 1996 and updated it in January 2002. The strategy in late 1996 incorporates only a couple of paragraphs on pastoral issues leave alone the agro-pastoral context. But the EFSS was revised in 2002, the government tried to elaborate on the above-mentioned issues (Beruk, 2003a). In general, the objective of EFSS is to ensure food security at the household level. The strategy document highlights the government's plan to address problems of food insecurity in the country. To ensure sustainable food security in the country rural development policies and strategies were also formulated. The rural development policy envisages that development and food security would be ensured through agriculture-led and rural-centered development. The policy emphasized targeted interventions for drought-prone and food insecure areas, such as SRS, which are characterized by erratic rainfall, vulnerability, soil degradation, low per capita, *etc.* (Food Security Programme Proposal/FSPP, 2003).

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1.2 Statement of the Problem

More than 40% of the population in the Horn of Africa (HoA) is undernourished and millions are food insecure. Those suffering most from food insecurity are subsistence farmers, pastoralists and agro-pastoralists whose livelihoods largely depend on agriculture and animal production. Counting between 15 to 20 million people in the HoA, pastoralist communities live mainly in arid and semi-arid low lands and particularly suffer from drought as not only do they see their food consumption reduced, they also risk to lose their assets (FEWS NET, 2010)

The ESRS is one of the Regional States in Ethiopia. It has nine administrative zones and 68 *woredas.* According to (Disaster Prevention and Preparedness Commission/DPPC, 2004), the food security situation in most parts of the Region in general and agro-pastoral areas of Jijiga Zone in particular is in a serious problem. In 2004, for instance, Jijiga zone experienced lowest rainfall of *Gu* season (main rainy season from February/March to June/July in Somali Region). In the same year, it was reported that the food security situation in most parts of the region especially in the seven zones receiving *Deyr* rains (short rains from October to November in Somali Region) is below normal to poor, with situation in some w*oredas* considered as a near-emergency. The remaining two zones, Jijiga and Shinile, receive *Karan* rains (rain season from mid July to mid September in Jijiga and Shinile Zones of Somali Region).

According to Regional Disaster Prevention and Preparedness Bureau /DPPB (2006b), food security situation in Jijiga zone is below normal especially in Awbare *Woreda*, which was suffering from water related problems. This happened due to poor *Gu and Deyr* rains in 2014, and the prices of basic food grains were slightly higher than normal following poor *normal* harvests.

Food insecurity is the real and major problem in Awbare *Woreda*. Despite this, studies on household level determinants of food insecurity and local copping strategies are rare in the area.

Hence, this research was initiated to address knowledge gap as far as food insecurity and local copping strategies in the agro-pastoral context is concerned.

1.3 Objectives

The overall objective of the study is to assess the food security status and coping strategies among the agro-pastoralist households in Awbare warada.

The specific objectives of the study are:

1. To assess food security status of rural households in the study area,
2. To identify the determinants of food security status of the rural households, and
3. To identify local food insecurity coping strategies employed by rural households.

1.4 Scope and significance of the Study

The study will be conducted in Awbare District, which is one of the 68 districts of Somali region. Households are the units of analysis of this study. The scope of this research is limited to the assessment of the food security status and the coping strategies. Even if the problems of food insecurity are multi-dimensional and dynamic, this study emphasizes only household level by taking 'snap-shoot' at a particular period of time. The study about the determinants of food insecurity and local coping strategies of rural agro-pastoral households is vital because it had significance in insuring food security in the study area. Insights generated by the study may help the concerned agencies [Governmental Organizations (GOs) and Non-Governmental Organizations (NGOs)] to design and implement effective food security strategy that complements successful and sustainable strategies of the concerned households.
In addition, the results of this study may contribute to other studies on food security in the agro-pastoral context.

2. LITERATURE REVIEW

Many definitions and conceptual models all agree in that the defining characteristics of household food security are secure access at all times to sufficient food. Moreover, there are four core concepts, implicit in the notion of "secure access to enough food all the time." These are sufficiency of food, defined mainly as the calories needed for an active, healthy life; access to food, defined by entitlement to produce, purchase or exchange food or receive as a gift; security, defined as the balance between vulnerability, risk and insurance; and time, where food insecurity can be chronic, transitory or cyclical (Maxwell and Frankenberger, 1992).

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. (FAO, 2002).

Food security has three major components: availability, access and utilization (Kifle and Yoseph, 1999). And food availability refers to the need to produce sufficient food in a way that generates income for small-scale producers without depleting the natural resource base,

and to the need to get this food into the market for sale at prices that consumers can afford (Haddad, 1997). According to Kifle and Yoseph (1999), availability is basically the household's capacity to produce the food it needs.

The second component relates to people's ability to get economic access to this food. Economic access is typically constrained by income. If households cannot generate sufficient income to purchase food, they lack an attainment to food.
The third component concerns an individual's ability to in and use food for growth, nutrition and health. In an environment lacking clear water, sanitation, child care and health facilities, the ability to use food to promote health and nutrition will be impaired (Haddad, 1997).

The conceptual framework of food security has progressively developed and expanded based particularly along with the growing incidence of hunger, famine and malnutrition in developing countries. The concept of food security attains wider attention in the early 1980's after the debate on 'access' to food and the focus of the unit of analysis shifted from national to global levels to household and individual levels. These shifts gave way to a dynamic development in the area, which in turn had served as an instrument through which the ultimate goals of human beings are effectively addressed (Debebe, 1995).
According to Frankerberger, (1992) household food security indicator are divided in to process, access and outcome indicators. He further explained each indicator as:

a) Process indicator: reflect food supply/availability that includes inputs and measures of agricultural resources, institutional development and market infrastructures, and exposure to regional conflict and its consequences.
b) Access indicators: are various means or strategies used by households to meet their households food security needs.
c) Outcome indicators: can be grouped into direct and indirect indicators. Direct indicators of food consumption include those indicators, which are closest to actual consumption rather than marketing channel information or medical status. Indirect indicators are related to nutritional status assessment and generally used when direct indicators are either unavailable or too costly (in terms of money and time) to collect.

It is necessary to identify the risks to food entitlements. These can originate from many sources and include variability in crop production and food supply, market and price variability, risks in employment and wages, and risks in health and morbidity. Conflict is also an increasingly common source of risk to food entitlements (Maxwell and Frankenberger, 1992).

The most food secure households are those which achieve adequate access to food while using only a small proportion of available resources; the most food insecure, those most at risk, fail to achieve adequate access even by devoting a large proportion of available resources to food (Maxwell and Frankenberger, 1992).

Risks to food entitlement could originate from a number of sources such as: weather variability, food production and supply variability, variability in price and market, health hazard and morbidity causing risks, employment and wage variability. In general, it could be environmental, natural, political, social, cultural and economic risks (Sen, 1981).

The measurements of food insecurity at different levels are described by Von Braun et al. (1992) as follows.

Country level: Food security at the country level can be monitored in terms of demand and supply indicators; that is, the quantity of available food versus needs, and net imports needed versus import capacity.

House hold level: food security at household level is best measured by direct surveys of dietary intake in comparison with appropriate adequacy norm. However, it measures existing situation and not the down side risks that may occur. The level of, and change in, socio economic and demographic variables such as real wage rates, employment, price ratio, and migration properly analyzed, can serve as proxies to indicate the status of and changes in food security. Indicators and their risk patterns needed to be continually measured and interrupted to monitor food security at the household level.

Individual level: Anthropometric information can be useful complement because measurements are taken at the individual level. Yet such information is the outcome of change in the above indicators and of the health and sanitation environment and other factors. Most important, this information indicates food insecurity after the fact.

3. RESEARCH METHODOLOGY

3.1 Description of the Study Area

Awbare is one of the seven w*oredas* of Jijiga Zone of ESRS. The *Woreda* is located in the Northeastern corner of the Region bordering Northern Somalia and lies from 9^0, 18' and 10^0, 12' N. Latitude and 42^0, 37' and 43^0, 26' E. Longitude. Awbare town, the administrative center of the *Woreda* and the fourth largest in the region, is located 74km Northeast of Jijiga just 5km of the international borderline. It is bounded by Shinile Zone in the Northwest, Jijiga *Woreda* in the South, Kebribeyah *Woreda* of Jijiga Zone in Southeast and Northern Somalia in the Northeast, East and Southeast (ERA, 2003).

The total area of the *Woreda* is 3,862km^2 and it has a population of 241,527 (July 2002). This gives a population density of 62.5 people per km^2, which is above the average density of the zone (53.9), of SRS (13) and of the country (60). The average household size is 5 and the percent of population under 15 is 47%. The *Woreda* has 66 *kebeles* of which 7 urban and 59 are rural *kebeles* and also 55 *kebeles* are agro-pastoral while the rest are nomadic pastoral (ERA, 2003).

Topography is mainly flat lowland with altitudes ranging from 1200 to 2117 m.a.s.l. Except the Eastern part which turns rugged as it dissents to the Shinile *Woreda* lowland. Dominant Climate is *Kolla* with mean annual temperature (MAT) of 25^0C for *Belg* and 20^0C for *Kiremt*. Rainfall in (mm) is scant and erratic with mean annual rainfall (MAR) of 400-900mm. Almost all the 386,200ha of the *Woreda* falls within arable land of which 276,900ha or 72% is productive land and mostly suitable for dry-land crop production with length of growing period (LGP) of between 100-120 days (ERA, 2003).

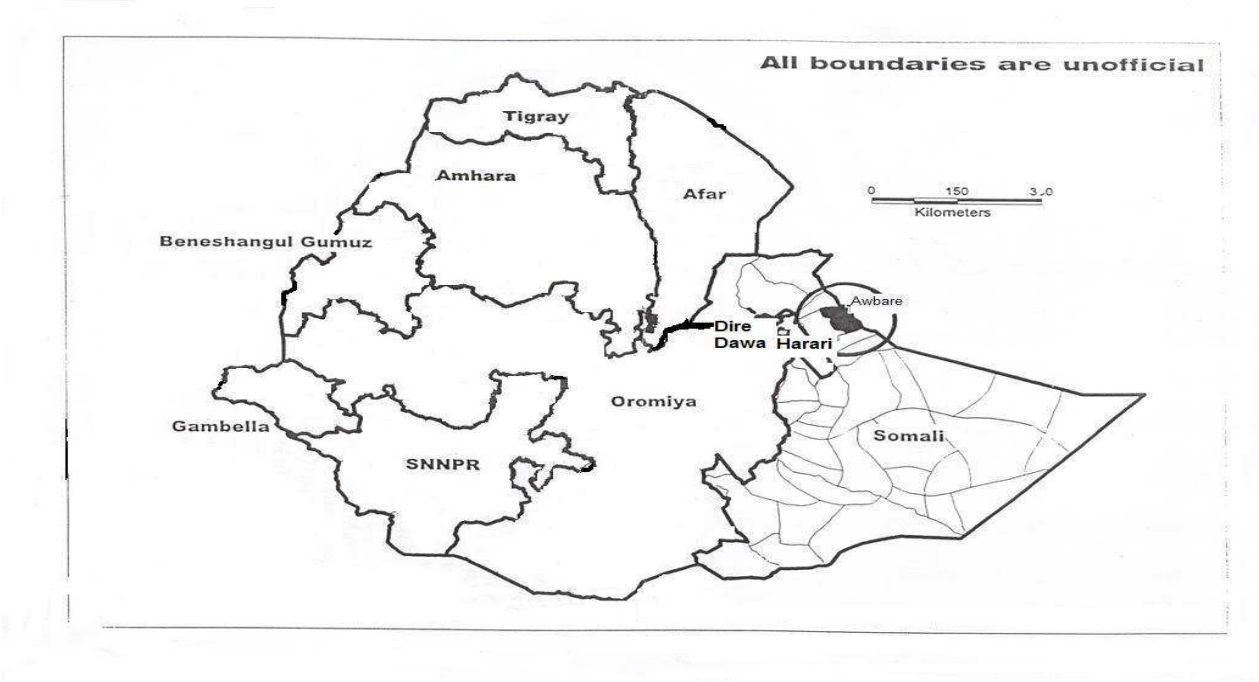

Figure 1. Location of Awbare *Woreda* in the map of Ethiopia

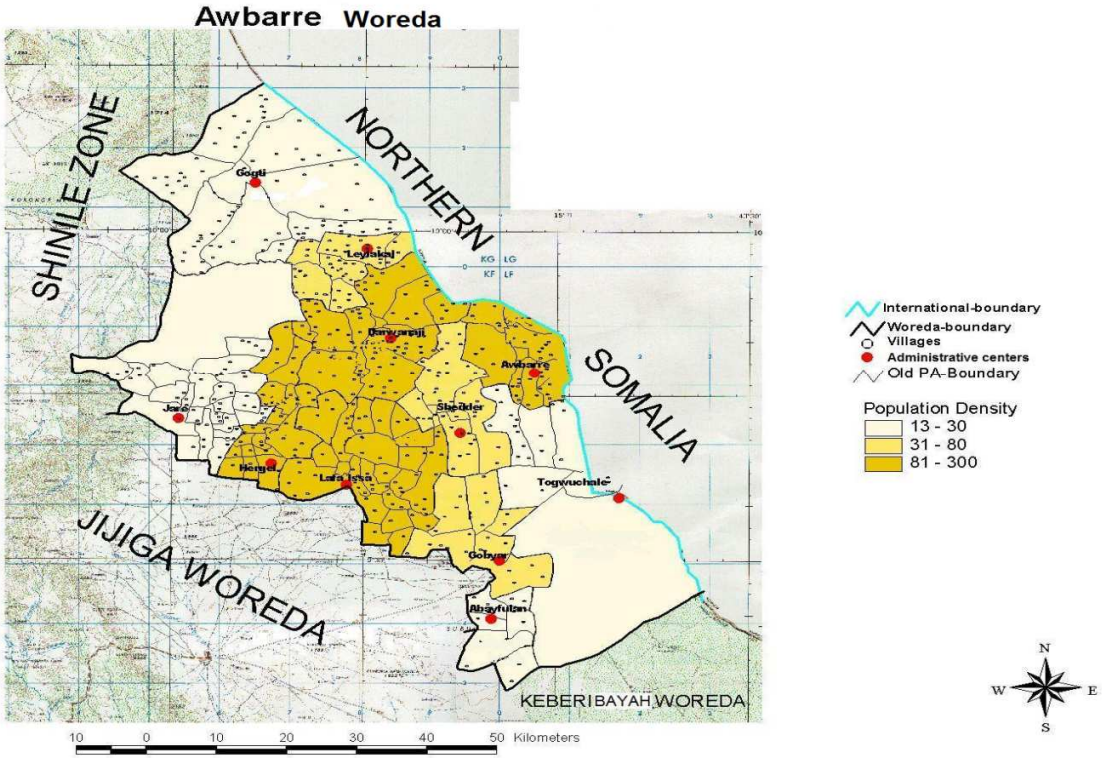

Figure 2. Map of Awbare *Woreda* showing major administrative centers.

3.2 Sources and Methods of Data Collection

In this study both primary and secondary data will be will be used. Primary data will be collected through survey using questionnaire based on the purpose of the study from the randomly selected 140 households in Awbare. The questionnaire will be pre-tested and improved based on the result obtained from the pre-test. In addition to this, questionnaire, personal observation, informal discussion with rural households and development agents will be held.

Moreover, secondary information of qualitative information about the research topic will be collected from the different regional organizations; like, Agricultural development office, regional agricultural research organization, Disaster Prevention and Preparedness Bureau, Central Statistics Authority and NGO's for the various documents related to food insecurity and copping strategies. Information in the region generally and specifically Awbare district.

Finally, enumerators will be recruited and trained to equip them with the necessary interviewing techniques based on the subject of the research. After the training, enumerators will collect the primary data using questionnaire with close supervision of the researcher.

3.3 Sampling Technique

In this study, a multistage sampling procedure will be used to select sample households. First stage, Awbare district was selected purposively (based on personal observation and previous studies and the government efforts in relation to and food security). Second stage, 4 kebeles will be selected among the 66 kebeles in using a random sampling technique. Finally, households are the basic sampling unit for this study, 140 households will be selected randomly from the 4 kebeles. The number of households to be selected from each of the 4 kebeles will be based on probability proportional to sample size. Selection of starting point from the farmer's list will be by lottery method.

3.4 Methods of Data Analysis

This study will use both descriptive statistics and economic model. The descriptive data analysis method that will be used are mean, percentage, ratios, frequencies, standard deviation, di-square and t-test. They will be used to analyze and compare factors between food secure and food insecure households based on the socioeconomic characteristics of the samples.

3.5 Chapterizition

The chapterizition of the thesis is proposed to be made, keeping in mind the objectives and research question. This study will be organized in five chapters. The first chapter will consist of the introduction. Under the introduction background information which describe the concept of the food insecurity and coping strategies. Statement of the problem, objectives of the study and scope and significance of the study will also be made in the first chapter.

The second chapter will consist of the review of the related literature which the definitions and of food insecurity and coping strategies and food security related studies conduct previously will be done. In the second chapter the frame work of the study will be also be described.

The third unit will consist of the methodology of the study; brief description of the study area, selection of the study site, sampling techniques, data collection procedures and methods of data analysis will be done.

The fourth chapter of the study will consist of result and discussions of the research. In the fifth chapter conclusions and recommendations will be given. Finally, references and appendices which will constitute tables, glossary of terms, and interview schedule used in the research will be given.

4. Work and Logistic schedule

a. Work plan

S. No	Research Activity	Duration
1	Initial literature review	July, 2015
2	Construction of the interview schedule	August, 2015
3	Getting interview schedule commented	August, 2015
4	Recruitment of the and training of the enumerators	August, 2015
5	Selection of the respondents	August, 2015
6	Pre-testing of the interview schedule	August, 2015
7	Conduct the actual survey	August, 2015
9	Collection of the secondary data	September, 2015
10	Additional Literature review	September, 2015
11	Data Cleaning, Coding, Entering and analysis	September, 2015
11	Data analysis and writing draft report	September to October, 2015

12	Accepting comments and preparing the final research	October, 2015

b. Logistics Plan

S. No	Description of the Item	Estimated Cost (ETB)
1	Personal cost	
1.1	Enumerators cost for data collection	4,000.00
1.2	Cost for acquiring information from internet, books, magazines other related cost	3,000.00
2	Vehicle and transportation cost	3,500.00
3	Stationary and Production cost	
3.1	Stationary	1,000.00
3.2	Print and photocopy	1,000.00
3.3	Miscellaneous	500.00
	Total	13,000.00
	Contingency (10%)	1,300.00
	Grand Total	**14,300.00**

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